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TAKE A RIDE - INSIDE ANDROID / UNLEASH THE POWER OF ANDROID

FIND INSIDE

GRADUATE ATTRIBUTES

01

ENGINEERING KNOWLEDGE: Apply Knowledge of Mathematics, Science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

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02

PROBLEM ANALYSIS: Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

03

DESIGN / DEVELOPMENT OF SOLUTIONS: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.

04

CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS: Using research based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.

GRADUATE ATTRIBUTES

05

MODERN TOOL USAGE: Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

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06

THE ENGINEER AND SOCIETY: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

07

ENVIRONMENT AND SUSTAINABILITY: Understand the impact of professional engineering solutions in societal and environmental context and demonstrate knowledge of and need for sustainable development

08

ETHICS: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

GRADUATE ATTRIBUTES

09

INDIVIDUAL AND TEAM WORK: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

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10

COMMUNICATION: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.

ELIFE-LONG LEARNING:

Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



PROJECT MANAGEMENT & FINANCE:

Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects inmultidisciplinary environments.



PROGRAM SPECIFIC OUTCOMES

PSC-01 To develop the culture of augmenting existing technologies to create scalable IT solutions.

PS0-02

To combine various technologies like loT,Cloud and Analytics to provide integrated solutions to real time problems of government or industries.

PSO-03

To master in moulding any probleminto a web or internet basedsolutions.

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DEPARTMENT OF INFORMATION TECHNOLOGY

ABOUT THE DEPT:

The department of Information Technology, started its journey in the year 2002 and is committed to deliver the program with rigor and with active industry participation. Department has 120 seats intake at first year and 24 seats as lateral entry at 2nd year for engineering diploma students. The department believes in student centric approach. Its dedicated team of faculty members inculcate relevant knowledge, skills and attitude in students to become successful professionals. The U.G. programme is accredited by National Board of Accreditation (NBA), New Delhi for three years w.e.f. 16.09.2011. UG Programme has been re-accredited for 3 years by NBA w.e.f 1st July 2016. Also the programme is permanently affiliated with UOM since AY 2015-16 onwards.

MISSION:

The IT department is committed to enrich students by rigorously implementing quality education with focus to make them industry ready, while imbibing in them professional ethics and social values to become responsible citizens

VISION:

"The department of IT will strive to be at the top position among the renowned providers of IT education"

FOREWORD

DR. KAMAL SHAH DEAN , R & D CELL

In today's fast-paced world, rekindling the flame of invention and encouraging curiosity in young brains is critical. The Department of Information Technology publishes Ezine, which attempts to incorporate student ideas and encourage active engagement in the learning process. Ezine has established a significant benchmark in showcasing students' hidden inherent talent by providing them with an unrivalled opportunity and an excellent platform to not only express their ideas and creative potentials, but also to voice out their personal opinions on topics that are of utmost importance in the lives of students.

A departmental magazine is designed to not only disseminate information, but also to introduce a whole new intriguing and thrilling arena of content in which students can explore their hobbies and feed their curiosities. Unlike previous technical journals, Ezine has expanded beyond science and technology to include other important fields, giving students the opportunity to investigate inter-disciplinary aspects of themes and to excite their natural curiosity. The Editorial Committee has made excellent use of the platform offered to them in harnessing the talents of all of the energetic students.

I want to express my heartfelt gratitude to the entire Editorial Board for bringing us this much-anticipated college magazine, which meets not only the stringent standards of punctuality but also curates information of the highest quality.



DR. BIJITH MARAKARKANDY HOD-IT DEPARTMENT

It gives me immense pleasure to write a foreword for the online magazine Ezine which show cases the creativity and technical writing skills of the students.

The Department takes all out efforts for attainment of all the Program Outcomes as suggested by the Accreditation bodies. The publication of Technical magazine by the students demonstrates attainment of several Graduate attributes key among them being Communication, Individual and Teamwork.

Congratulations to the students whose articles have been selected for publication in the current edition of the Magazine. Thanks to the editorial and Design team for their contribution in bringing out a beautifully crafted magazine with appropriate infographics. DR. SANGEETA VHATKAR DEPUTY HOD, ACM BRANCH COUNSELLOR

> " IT'S NOT ABOUT IDEAS ITS ABOUT MAKING IDEAS HAPPEN"

Technology is just a tool. In terms of getting the people work together & motivating them.

In TCET students have been engaged in various path-breaking innovative research activities all throughout year. E-zine magazine is yearly magazine published under TCET-ACM Professional body. This year E-zine magazine focus on current trends and technology like Android & Green IT. This E-zine magazine also motivate non-technical articles and sketches. Every year students are participating in the event with full enthusiasm. This online E-zine magazine is useful for researcher and innovators. Students have developed a great habit of exploring unique ideas in various trending technologies. The department aim to facilitate Holistic student development with multidisciplinary learning, and I am sure that many students will make indelible mark nationally and internationally in the field of information technology.

My Heartiest congratulation to TCET-ACM publication head and congratulation to entire editorial team for great work. I am confident that E-zine magazine will provide platform for overall development of stakeholders.

I am thankful to the management of Thakur college of Engineering and technology for providing State-of-Art Infrastructure and all possible support in carrying out multidimensional activities and events.

DR. AADITYA DESAI FACULTY IN-CHARGE FOR EZINE

"Reading is a passport to countless adventures" —Mary Pope Osbourne

Dear readers,

E-zine has been the mirror of the activities that have been carried out in the IT department for years together. We have been very fortunate to be associated with this wonderful technical magazine which is not just a collection of articles but also the true indication of the latest technological advancement in the arena of Information Technology.

In the current edition of E-zine our focus was on two areas especially Android development and Green IT. With the invent of free Android operating system by Google in 2008, the floodgates for various mobile smartphone applications opened and with it began the new era of smart phone technology advancement. Application development in smartphones is not only limited to technological knowledge but also it deals with the aspect of creativity of the developer.

Green IT is another important area in IT which is normally neglected. But very few people know that by just using an efficient algorithm or programming language we can save lot of energy that is used for the functioning of the computer.

The articles in this edition of E-zine are very interesting and will pique your enthusiasm towards these areas that I just mentioned above. The editorial team has put in lots of efforts to make this edition of E-zine successful.

I wish all the best to the editorial team and the readers and hope that you will enjoy reading articles in this edition of E-zine. Thank you!

MS. PRASHALI SRIVASTAVA

ACM TCET - PUBLICATION HEAD

What I do believe is that there is always a relationship between writing and reading, a constant interplay between the writer on the one hand and the reader on the other.

- Guillermo Cabrera Infante

Greetings from the Ezine team to all of you! Ezine's mission is to provide a platform for students, researchers, faculty, academicians, and others to share, showcase and exchange knowledge and ideas about technology, research, innovation and development.

The 13th edition has arrived!

We have lined up a cluster of interesting and enlightening articles. In this version, we have attempted to embrace articles from assorted themes such as Android and Green IT. We also included non-technical articles as well as an article by an industry expert.

I'd like to express my profound gratitude to the faculty in charge, Mr. Aditya Desai, as well as the Design Director, Editors, Designers, Reviewers, and the contributing authors for creating this edition.

We hope to return with a much more exciting and value-added Volume, next semester. Until then, enjoy this reading!



ANDROID THEME

[OCTOBER EDITION]







What is Android?

For anime fans Android is just a robot that has a human form. But to us coders Android is our playground. Playground where you can make apps, where you can make custom ROMs, where you can customize a small handheld touchscreen device to whatever you like. It feels like Android has been a part of her life for a really long time but it's fairly young. Founded in California in October 2003 by Andy Rubin, Rich Miner, Nick Sears, and Chris White, Android was a small fish that had ambitions to swim with the sharks. In the ocean of handheld operating systems Symbian and Microsoft Windows Mobile were the sharks it would have to take on head first to be able to swim.



Described to have tremendous potential in developing smarter mobile devices Android failed to receive funding. But it all changed in July 2005, this small fish received a huge bait when Google acquired the company for at least \$50 million. Very few people are aware but Android is actually based off a Linux kernel! Yeah, where else do you think its customisability comes from?

Android like a tree branched out into several other parts. Google developed several variations of Android for specific use cases, including Android Wear, later renamed Wear OS, for wearable devices such as wrist watches, Android TV for televisions, and Android Things for smart devices and Internet of things. The open and customizable nature of Android allows device makers to use it on other electronics as well, including laptops, netbooks, and desktop computers, cameras, headphones, home automation systems, game consoles, media players, satellites, routers, printers, payment terminals, automated teller machines, and even robots (imagine an android running on android) ! And all of this was possible due to Android's Open-source nature.

The main thing that separated Android from other operating systems was its open-source code. And this open nature has encouraged a large community of developers and enthusiasts to use the open-source code as a foundation for community-driven projects, which deliver updates to older devices, add new features for advanced users or bring Android to devices originally shipped with other operating systems. You see Android for coders and developers it's like what dream is to humans. You can do whatever you want to in your dreams and in the same way you can do whatever you like on a phone with Android.

As of now most of the phones available on the market run on Android. Android has somewhat become a go to operating system for new and older smartphone companies alike. Unlike other operating systems such as iOS, Android lets you be yourself customize the smallest things on your phone which is nowadays being treated like an extension of yourself. In just a couple of decades the small fish that ambitioned to swim with the sharks is now a whale that rules the ocean of operating systems for handheld devices and will keep ruling it till some another small fish with similar ambitions outgrows it.

Kailash Ahir SE ITA

GOOGLE ANDROID

"A Business model describes how your company generates, deliverers and captures value"

- STEVE BLANK

GOOGLE'S ANDROID BUSINESS MODEL

Admit it, we are surrounded by Smartphones. Android enjoys around 72.44% per cent of the global market share as of September 2021. But it is just an operating system owned by Google.

So how exactly does Google generates revenue from Android?

The Android operating system is a mobile operating system that was developed by Google to be primarily used for touch screen devices, cell phones, and tablets. Its design lets users manipulate the mobile devices intuitively, with finger movements that mirror common motions, such as pinching, swiping, and tapping. Now number one point to be that many people may think that Google charges cell phone manufactures to use android

OS on their devices, but a BIG NO! Here comes the interesting thing that Android is an open source meaning anyone can install android system on their device

So the question is how is Android still in the market if it's not charging any money?

Here comes the Android revenue model in picture. Google has two major sources of income that is keeping android floating still in the market.

FIRST Google avoids additional costs for paying to be default search engine of any other OS. In 2014 Google paid alone Apple \$1 billion to just keep Google search bar on their iphones. One more smart move they made is as they kept android for free, which eventually helped cheaper phones to be manufactured and developed as they don't have to put up with the licensing fee as long as they have the hardware.

As being an Android Smartphone, they have default Google owned apps like Google search, Google play, YouTube. And to surprise you more the main android framework is signed through Google account so ultimately you need to have Google account to use your Android .It is a way easier to record your behavioral pattern. They know a lot more than you about yourself. What you have been browsing on your phone, your tickets through your Gmail, your location and what advertisement to advertise in your location and the list is endless. Basically Android is your Google data acquirer in a pocket.





So here it is in simple terms: Android is open source. Google possibly cannot earn through licensing so it created the OS such that User information is more freely available to have a better network of advertisement for their advertisers and of course displaying Advertisements is much more convenient on this portable device.

The number of Android-powered smartphones powered in fourth quarter of 2015, according to research group Gartner, was 325,394.4. That accounts for almost 81% of the market, dwarfing the 71,525.9 for Apple's iOS

Android operating system has generated revenue of \$31 billion and \$22 billion in profit for Google since 2008. This was revealed by Oracle Corp's lawyer in court in a case the company was fighting against Google.

These all the things just proves one thing that surely Google's Android Business model was a successful one. Still there is always a scope of improvement Business is all about innovations and creativity.

Payal Chandak SE AIML

MALWARE DETECTION IN ANDROID USING MACHINE LEARNING

Why is malware detection important?

Android is a mobile operating system based on the Linux kernel and other modified versions of open-source software, developed primarily for touchscreen mobile devices such as smartphones and tablets. The biggest challenge Android has faced for many years is malware.

Malware is a virus or malicious software designed to harm your system. The various types of damage that a system suffers include hardware failures, personal information leaks, and information loss from the system. 4,444 researchers discovered that 87% of all Android smartphones are exposed to at least one critical security hole, and 95% of Android devices can be hacked with simple text messages via malicious links. Apple is also equally vulnerable. In September 2015, 40 apps were removed from the official app store after being infected with XcodeGhost, a type of malware designed to turn Apple devices into network of botnets. Despite Apple's highly advertised protection, the malware not only sneaked up but was also placed on top of legitimate apps, making it difficult to detect.



There are three ways to analyze malware: static, dynamic, and hybrid. Static methods perform malware analysis without executing code and check for associated malware files. Static methods provide faster output than dynamic methods. Dynamically analyze malware behavior and actions in a protected environment. The reason for the protected environment is to avoid the risk of damaging your system while investigating malware. The dynamic method works well, but it also takes time and setup. The world has suffered a lot from the rapid development of malware attacks. Most existing antivirus programs use signature-based detection of malware, which is inefficient due to the proliferation of malware numbers and types.

Why is machine learning a good idea?

Now consider what machine learning is and why it is the best approach to deal with malware detection. Machine learning consists of many algorithms and methods that allow a system to learn without being programmed. The system formalizes the principle after getting the new data type. Machine learning models are formalized by several data properties. Supervised learning is used to detect malware. Simply put, supervised learning uses tagged datasets to train algorithms for classification or prediction purposes. Suppose your dataset contains two types of content: a harmless file and a malicious file. In the training phase, these two files are first trained with different algorithms and created according to this predictive model. For testing purposes, the setup requires a protected environment to prevent damage to the system. Then, after the unknown file is processed by the predictive model, the model determines whether the unknown file is a harmless or malicious file.

Algorithms Used:

The machine learning algorithms implemented on Android to detect malware detection are based on behavioral and anomaly-based software analysis. The most important algorithms used for machine learning are support vector machines and KNNs.

The procedure is to get the record and divide it into two subsets. The first subset is used to fit the model and is known as the training dataset. The second subset is not used for training the model. Instead, the input elements of the dataset are provided to the model, predictions are made, and they are compared to the expected value. This second dataset is called the test dataset. Training datasets are used to tune machine learning models, and test datasets are used to evaluate machine learning model tunes.

The goal is to estimate the performance of the machine learning model for new invisible data. Therefore, I expect to actually apply the model. To adapt it to available data with known inputs and outputs, make predictions for new examples in the future that do not have the expected or target values. If a large enough data set is available, the tensile test method makes sense.

The Support Vector Machine (SVM) is one of the most popular supervised learning algorithms used for both classification and regression problems. However, it is mainly used for machine learning classification problems. The goal of the SVM algorithm is to create decision boundaries that can divide n-dimensional space into classes so that new data points can be easily placed in the correct category in the future. This best decision limit is called the hyperplane. SVM chooses extrema to help create a hyperplane. These extreme cases are called support vectors.

K Nearest Neighbor (KNN) is one of the simplest machine learning algorithms based on supervised learning strategies. The algorithm gets the similarity between the new case / data and the available cases and places the new case in a category that is very similar to the available categories. The KNN algorithm stores all available data and isolates new data points based on similarity. This means that you can easily classify where the new data came from using an algorithm. It can be used for configuration and editing, but is primarily used for problem editing. KNN is a nonparametric algorithm. That is, there are no assumptions about route data.

Malware Analysis Method:

Static Check: Static analysis is the process of analyzing malware binary files without actually executing code. Static analysis is typically performed by determining the signature of the binary file, which is the unique identifier of the binary file, and can be performed by calculating the encryption hash of the file and understanding each

component. Analyze both the intent filters and permissions required in your app's "manifest.xml" file. Malware binaries can be reverse engineered by loading the executable into a disassembler such as IDA. Machine executable code can be translated into assembly language code for easy reading and understanding by humans. The analyst then examines the program to better understand what the program can do and what it is programmed to do.

Keywords related to these malicious files include "READ_SMS", "PROCESS_OUTGOING_CALLS", "MOUNT_UNMOUNT_FILESYSTEMS", "INSTALL_PACKAGES", "READ_CONTACTS", "DISABLE_KEYGUARD". Dynamic Check: Dynamic analysis involves running malware. Eliminate the infection or prevent it from spreading to other systems. The system is set up in a closed, isolated virtual environment so that you can thoroughly investigate malware samples without the risk of damaging your system. Advanced dynamic analysis allows you to use the debugger to determine the functionality of malware executables that was difficult to retrieve with other techniques. Unlike static analysis, it's behavior-based, so you rarely miss

Related system calls made by malicious files include Read, Write, Chmod, Access, Lseek, Getpid, and Rename, etc

Metrics:

important behaviors.

The metric is used to evaluate machine learning algorithms. Conformance = True Positive True Positive + False Positive Recall is another important metric defined as the percentage of samples from the class correctly predicted by the model. The recall rate is also called the true positive rate.

Recall = True PositiveTrue Positive + False Negative F1-Score is used to evaluate the performance of the model and works in binary classification problems: F1score = 2 x Precision x RecallPrecision + Recall Accuracy = True PositiveTrue Positive + True Negative

Note- When using machine learning to detect malware:

A complete and large dataset is important. Therefore, in this model, do not consider other factors when determining whether a file is malicious or harmless. Let's take a look at the famous example from the photo, the classification of tanks vs. forests. The model was trained in many photographs of tanks and forests. But after evaluating the model, the conclusion was that the model was trying to classify based on the sky. For malware detection: If most of the malicious files are large compared to the harmless files, the predictive model classifies the larger size files as malicious, which is incorrect.

Conclusion:

Malware detection is necessary given that most people nowadays have smartphones. Machine learning models for detecting malware work with algorithms SVM and KNN. The performance and effectiveness of a model is based on its accuracy and true positive rate. The correct answer rate of 79.08% for SVM and 80.50% for KNN, and the true positive rate of 67.00% for SVM and 80.00% for KNN. This shows that machine learning models based on SVMs and ANNs are effective in classifying malware. There is still a need for user-friendly applications based on this technology. To fight a rare type.

EVERY GREAT APP STARTS WITH A SIMPLE IDEA -ANDROID OS

INTRODUCTION:

The process of android development is the development of any application for the Android operating system utilizing the Android software development kit (SDK) on android studio. Google created Android, a mobile operating system based on open-source software. Because Android is widely adaptable (because of its open source nature), most Android developers have employed a variety of graphical user interfaces, even though they all use the same underlying operating system. The Android Open-Source Project is the open-source code that is used to create Android applications (AOSP). The SDK, which is publicly available, can be used to construct any Android application. These packages guide any tool that is constructed in Android OS and written In Java. These packages guide any tool that is constructed in Android OS and written In Java. These run-on Java Virtual Machines (JVM).

Why Android has been so popular these days?

Since 2011, Android has been the most popular operating system, with over 2 million monthly active users. Android comes in a variety of flavours, each with its own set of features that set it apart from the rest. Android 11 is the most recent Android version to hit the market.

The fact that many more smartphone and device makers utilise Android as the operating system for their products is a big part of Android's popularity. iOS, on the other hand, is only available on Apple's iPhones and iPads. Secondly, Android has a varied price range of devices as compared to iOS. Apple's most affordable smartphone is still out of reach for most people in countries with developing economies and weak exchange rates for the dollar. Despite the fact that Apple has opened up the iOS ecosystem to accommodate some third-party devices, the iOS platform remains a somewhat closed mobile platform. Android, on the other hand, offers a far larger ecosystem of peripherals and wearables.As a result, you can have a Samsung smartwatch, Google Home speaker, and Huawei smartphone and the different devices will work together. Furthermore, transferring data and syncing devices are easier. The proliferation of Android-powered devices doesn't only mean more Android phones and tablets, but also greater variety among devices. Initially, Android lacked some of Apple's software features, most notably a virtual assistant like Siri. The success of Google Assistant and its voice control capabilities has helped Android catch up in many ways in recent years.

CONCLUSION:

Mobile operating systems other than Android are now lagging in comparison to Android. With one operating system, called "Android," you may access all Google services. As Android versions are released, its features become increasingly sophisticated.. It has over 85% market share in nations including Brazil, India, Indonesia, Iran, and Turkey Having the largest installed base of any mobile platform, android is growing faster than ever. In the last two decades, android has developed a lot hence becoming the best-selling OS since 2011.

INTRODUCTION:

In our project, we created an app that allows users to easily communicate with police, nearby hospitals, or the fire department in an emergency, as well as set someone's contact as an emergency contact. In addition, our app includes an emergency SMS feature. In addition, there is an admin side and a user side in our app, where the admin side can easily add different contacts and the user side must first register before using our app. With our app, we solve the problem of people not knowing who to call in an emergency or simply having an easy way to communicate during an emergency.

The Benefits of a Medical Emergency App

Effortless Communication Between the Hospital and the Patients Patients can schedule appointments online using a custom mobile app that is integrated with hospital management solutions. This provides your patients with immediate access, eliminating the need for them to leave their home and wait in a long line at your hospital.

Handling Emergency Situations Has Been Made Simple

The hospital's dedicated mobile app can handle emergency cases quickly and easily. In the event of an emergency, the mobile application will notify the doctors, and the doctor will immediately send all necessary information via the app.

Improved Departmental Coordination

A healthcare integrated mobile app allows doctors and hospital staff to stay in touch with patients. It enables effective coordination between the two by streamlining the process between different departments, such as upcoming appointments, test results, and reports, notifying hospital staff about the reports/documents required for the diagnosis, updates on the patient's ongoing treatment, and alerting them if any medications are due.

Simple Data Collection Integration with Wearables The mobile app can work in tandem with wearable devices such as pedometers and smartwatches. These devices collect health information such as pulse rate, blood pressure, and so on. The mobile app will collect daily health updates from these wearable devices and save them in a database. Healthcare app development is a lucrative business opportunity.

Many people see the integration of technology into the healthcare industry as a great business opportunity. The incorporation of cutting-edge technologies such as Artificial Intelligence (AI), Blockchain, and Internet of Things (IoT) into healthcare apps has created an exceptional opportunity for many entrepreneurs.

Conclusion:

Medical devices and apps are already valuable tools for HCPs, and as their features and applications expand, they are expected to be integrated into nearly every aspect of clinical practise. However, some HCPs are still hesitant to use them in clinical practise. Although medical devices and apps unquestionably provide many benefits to HCPs, they are currently being used without a thorough understanding of the risks and benefits associated with them. To ensure a fundamental level of quality and safety when these tools are used, rigorous evaluation, validation, and the development of best-practice standards for medical apps are critical. With such measures in place, the main determinant of an app's value may ultimately be its ability to provide meaningful, accurate, and timely information and guidance to the end user in order to serve the critical purpose of improving patient outcomes.

INTRODUCTION:

It is very common to start a small-scale business with limited resources in order to provide high-quality services. People are becoming more interested in online business these days. Assume there is an online business where customers can order their needs and the goods will be delivered on time. Customers today are drawn not only because placing an order online is very convenient, but also because they have visibility into the items offered; similarly, online food ordering system customers can order their favourite foods, and this database will be the barrier for customers and restaurants to provide the services.

Features:

Menus available online (original and searchable format)

The ability for restaurant owners to register their menus.

Simple search for restaurants in your area

Check out the restaurant ratings and write a review.

Food ordering is simple, quick, and convenient.

The menu is available online. 24*7*365 There's no need to recite the entire menu over the phone.

People all over the world can now view and print an online menu.

Menu with actual product images, enhancing the uniqueness of your online presence.

Prior knowledge of delivery time aids in preparation and provides better service.

Online Food Ordering System

Growth of Online Ordering and Food Delivery System After Few Years

Objective:

Effortless Communication Between the Hospital and the Patients Patients can schedule appointments online using a custom mobile app that is integrated with hospital management solutions. This provides your patients with immediate access, eliminating the need for them to leave their home and wait in a long line at your hospital.

Handling Emergency Situations Has Been Made Simple

The hospital's dedicated mobile app can handle emergency cases quickly and easily. In the event of an emergency, the mobile application will notify the doctors, and the doctor will immediately send all necessary information via the app.

Advantages:

Reduce the number of timeconsuming phone orders and illegible fax orders.

There will be no more busy lines or the need for additional phone lines.

A competitive advantage at an affordable price.

Greater regional customer reach.

Provides a marketing and promotion channel, lowering your advertising costs.

Conclusion:

Creating a database is never an easy task. During the process of creating the database, we learned many things such as taking real-world objects into consideration and creating entities and attributes, normalizing the entire schema and analyzing functional dependencies, and the most important part is retrieving the data.

Finally, for each front-end application we create, a concrete database model should be created to represent the application. "Online Food Ordering System" will represent real-time anomalies in our case.

DEEPAK GUPTA TE ITA

GREENIT THEME

[NOVEMBER EDITION]

DATA CENTERS : EFFICIENT APPROACHES TO GREEN IT

The increasing demands and energy consumption have prompted us to consider the hardware, software languages, data centers, and algorithms we use to manage data, as this has emerged as a pressing need. This has resulted in a focus on reducing energy consumption, which has resulted in two primary concerns: The data centers' ever-increasing energy consumption. The rapid increase in demand for personal computing devices such as smartphones, laptops, batteries, and others. This article discusses the static and dynamic aspects of cloud computing, as well as solutions to reduce their environmental impact and energy consumption. The use of efficient programming languages and algorithms is also covered in this section.

INTRODUCTION

A Data Centre is a physical facility used by businesses to house critical applications and data. Because IT services are critical to business sustainability, they typically include redundant or backup components and power supply systems, data transmission links, environmental controls, and various protection devices. For the vast and vivid increase in computing capacity, a scalable and efficient information technology (IT) infrastructure, storage, network bandwidth, staff, and enormous capital expenditure, operating costs are required. Cloud data centers are the powerhouses of today's demanding IT infrastructure, and there is an urgent need to improve their performance. Production flows, Social Media, Big Data, Bitcoin, Artificial Intelligence, and even business processes are all examples of this. These and other trends are resulting in an increasing amount of data being stored and processed in data centers. Datacenter capacity is expanding at a rapid pace. According to Ci

According to Cisco's analyses, the worldwide computing capacities of data centers measured in workloads and compute instances will more than double (2.3 fold) between 2016 and 2021, while data storage capacities in data centers will grow by a factor of nearly 4 to 2.6 ZB during the same period. However, the majority of available analyses assume a more or less significant increase in energy consumption. The vast potential of online banking, social networking, e-commerce, e-government, information processing, and other applications results in large-scale and vast workloads. Meanwhile, the computing and communication processing capacity of many private companies and public institutions, ranging from transportation to banking, manufacturing to housing, has been increasing. Measuring A programming language's energy efficiency To understand the energy efficiency of various programming languages, comparable implementations with a good representation of different problems and solutions are required.

It will allow us to produce results that are as energy-efficient as popular programming languages. These findings can also be used to investigate the relationships between energy consumption, execution time, and memory usage. So, in order to address the issue of efficiency and reduce energy consumption, we have discussed four solutions here. Energy Conservation: Improving the efficiency of a data center while reducing energy consumption is a pressing need, but there is also a need to look for ways to mitigate the impact on data servers. Solid-state discs should be used instead of hard drives. Refresh your storage array's hardware. Install a direct current (DC) power supply in your data center. Reduce RAID levels to increase capacity while saving energy. Improve your storage software. Make use of the cloud. Replace worn-out hard drives Enable thin provisioning. Remember to include deduplication and compression.

Data Redundancy:

Deduping and compression are required. Both of these storage efficiency methods allow you to store more data while using less power. Because of its redundantly built architecture, a typical data center consumes a large amount of electricity. Of course, choosing a site location that is physically secure and has consistent access to power, water, and communications is an important first step. Cooling plants that run efficiently without sacrificing dependability CRAC system enhancements include reduced overcooling, lower server temperatures, and increased server reliability and density. It is necessary to use re-used energy from the environment (air, waste heat, water, etc.). Organizations can successfully build and implement green data center initiatives that maximize efficiency and return on investment by following these five steps: Conduct a Baseline Energy Audit Select Green-Friendly Materials and Environmental Attributes Prioritize the Reduction of Data Center Power Usage Optimize Data Center Cooling Design Modular Data Centers

Software Language:

Is quick language always the most energy-efficient?

Understanding this correctly may address whether energy effectiveness is merely a performance issue, allowing inventors to retain a lesser understanding of how energy and time relate during and between languages. - What is the relationship between memory

operation and energy consumption?

Understanding how memory operation affects energy consumption will enable inventors to learn more about memory management if energy consumption is a concern.

Can we automatically choose the most simple programming language based on energy, time, and memory operation?

Inventors are frequently concerned with a single (possibly limited) resource. For example, energy and time are all three, as are time and memory space and energy and memory space. By analyzing these trade-offs, designers will be able to determine which programming languages are best for a given script.

Is it faster and greener?

When analyzing energy consumption in software, a common misconception is that it will bear within the same time frame as prosecution time. In other words, shortening a program's execution time results in an initial quantum of energy savings.

How does memory operation affect the energy consumption of the memory?

There are two main scripts that could have an impact on this energy consumption: nonstop memory operation and peak memory operation. Pascal (66Mb), Go (69Mb), C (77Mb), Fortran (82Mb), and C (88Mb) were the top five languages that required the least amount of memory space (on average) to execute the results. JRuby (1309Mb), Dart (570Mb), Erlang (475Mb), Lua (444Mb), and Perl (437Mb) were the last five languages; only Erlang is not an interpreted language. The collected languages demanded 125Mb on average, the virtual machine languages demanded 285Mb, and the interpreted languages demanded 426Mb. If sorted by programming paradigm, imperative languages required 116Mb, while object-oriented languages required 249Mb. Furthermore, the top five languages that consumed the least amount of DRAM energy (on average) were C (5J), Rust (6J), C (8J), Ada (10J), and Java (11J); only Java is not a collected language. Lua (430J), JRuby (383J), Python (356J), Perl (327J), and Ruby (295J) were the bottom five languages; all are interpreted languages. The collected languages consumed 14J on average, the virtual machine languages 52J, and the interpreted languages 236J.

CONCLUSION

Although the various studies presented assume greater or lesser increases in data center energy consumption in recent years, estimates of both the absolute amount of energy consumed and the increases in energy consumption vary significantly. Forecasts for the development of future data center energy consumption differ even more. Improving energy efficiency will thus remain critical in the future. In the future, the emphasis will be on improving the energy efficiency of IT components, as significant improvements in infrastructure such as cooling and uninterruptible power supply have already been made. Measures that have no direct impact on data center energy efficiency, such as the use of waste heat and operation with (fluctuating) regenerative energy, will also become more important in the future. Initial approaches, such as considering the UN's 17 Sustainable Development Goals, are already in place. Finally, because developers frequently have limited resources and may be concerned with more than one efficiency characteristic, we determined which languages were the best/worst based on a combination of the previous three factors: Energy & Time, Energy & Peak Memory, Time & Peak Memory, and Energy & Time & Peak Memory.

What was the worst disaster in 2019 and 2020?

These years will be remembered as the year of the coronavirus pandemic. The pandemic, on the other hand, brought our human life and movements to a complete halt. The never-ending natural disaster holocaust has exacted its vengeance on human life. Natural disasters kill an estimated 60,000 people worldwide each year, according to statistics. Natural disasters were solely responsible for 0.1 percent of deaths worldwide over the last decade. Perhaps the death toll has decreased over the last decade. However, the number of natural disasters has increased at a faster rate.

In India, for example, there has been a relative change of +81 percent in deaths caused by natural disasters between 2016 and 2019. Despite the tremendous growth of the human population over the period, significant progress has been made in the global end-of-life decline. The main reasons for this are effective response systems, resilient infrastructure, and an increase in living standards. At the same time, people who live in extreme poverty or have a low HDI score are more vulnerable to natural disasters.

Is Climate Change Real?

As a result, we must ask why there has been such an increase in the number of natural disaster events around the world. It will reduce us to two main factors (i). Changes in the Climate (ii). Human intervention in Nature entails the same thing.

The global climate is changing and will continue to change over the next few decades and centuries. Perhaps the HDI, GDP, or Happiness Index of the world have not increased significantly in this decade. However, our planet's temperature has risen by 1.2 degrees Celsius. 2020 was one of the three warmest years on record, according to the World Meteorological Organization. Between 2019 and 2020, Greenland lost 152 gigatonnes of ice. An increase in ocean level is recorded at the same rate; the ocean's temperature also rose. 80% of the ocean area has experienced heat waves costing marine life. So, learning about climate change becomes essential, including global warming, caused by the emission of greenhouse gases and the resulting shift in weather patterns. Since the mid of 20th century, there has been an unprecedented impact on Earth's climate system. Deniers of Climate Change

But do you believe in global warming?

According to this Statista data, sourced from YouGov, approximately 19% of people in the United States do not believe climate change is real. It is critical to understand this because we have seen America hold global meetings to reduce carbon emissions. At the same time, 5% of Americans denied that climate change was occurring. Around 16% of Indians do not believe climate change is real and that humans are to blame. It demonstrates how fake news and the spread of conspiracy theories cause people to live in denial of what is happening.

The Industrial Revolution's History

Britain discovered a cheap alternative energy source to woods in the 18th century, namely coal. It accelerated industrialization throughout Western nations, resulting in the release of carbon footprints into the atmosphere. Slowly and steadily, other developed countries followed the same path that led to the Climate Change crisis, which has now resulted in their cleaning. It should be noted that western nations heavily relied on fossil fuels to develop their economies through industrialization. However, in today's blame game, developing countries are being held accountable for their actions

However, as previously stated, climate change is not instantaneous; it is the cause of the period. Between 1990 and 2019, China and India increased by 370 and 336 percent, respectively. Still, it is nothing compared to historical emissions by the United States of 25% and the European Union (including Britain) of 22%, while China currently stands at 13% and India at 3%. However, they are now blaming developing countries for global warming. Is it morally permissible to do so?

On the other hand, between 1990 and the present, production in developing countries has increased while consumption has remained relatively stable. The developed world has steadily de-industrialized, leaving developing countries to do all of the dirty work.

According to the Global Carbon Project, America is responsible for 5.77 billion tonnes of consumption-based CO2 emissions, with annual CO2 emissions of 5.42 billion tonnes. As can be seen, consumption-based emissions are significantly higher than consumption-based emissions. The Paris Agreement President Biden invited 40 world leaders to the Leader's Summit on Climate in March 2021. Countries announced their ambitious new climate targets here, ensuring that countries accounting for half of the global economy have now committed to reducing emissions. However, we recall former US President Donald Trump's decision to withdraw from the Paris Agreement.

Who will take responsibility for ensuring that such events do not occur? Who will bear responsibility if a new administration in any country refuses to withdraw from the Paris Agreement?

India reiterated its target of 450 GW of renewable energy by 2030 at the Summit. It announced the formation of the "U.S.-India 2030 Climate and Clean Energy Agenda 2030 Partnership" to raise funds and accelerate clean energy innovation and deployment this decade. The Performance of India

India is doing its part to reduce greenhouse gas emissions. On the global performance index for climate action, India ranked seventh, ahead of the leaders of climate action, the United States and France. India pledged to reduce emissions by 33-35 percent by 2030, and by 2021, the country had achieved 21 percent of its goal.

India pledged to increase non-fossil fuel electricity to 40% by 2030, and it has already achieved 38%, falling just 2% short of the target. However, much more work is required on the third component to achieve 2.5 to 3 billion tonnes of carbon dioxide equivalent in forest cover by 2030. India is one of the few countries on track to meet its Paris target. India has some of the lowest solar tariffs in the world, resulting in a 9 percent decrease dependent on thermal capacity.

While expectations are high, India expects developed countries to take aggressive measures to reduce carbon emissions. India has emphasized that it is making significant progress on its climate commitments, even though developed countries are not. "We've gone above and beyond. Instead, why don't you ask the countries lecturing us to change their ways? None of the developed countries has ratified the Paris Agreement "Minister Javadekar stated. Finally, the world can no longer afford to put off climate action. As the world emerges from Covid-19, there will be a need to invest in green technology and commit to higher climate ambitions to ensure a sustainable future

DEVELOPING COUNTRIES: NEW E-WASTE DUMPING BIN FOR THE DEVELOPED WORLD?

Around the world, 90% of e-waste is illegally traded or dumped. And every year, 90 percent of trash ends up in countries like India and the rest of Asia, according to a 2015 United Nations report, and the trend and tremendous rise in demand for electronics will have a different picture, which may be worse than it was in 2015. According to the World Economic Forum report from 2019, Western Europe is at the top of this list. This report focuses on how ewaste is illegally imported into the developed world through illegal channels in order to avoid detection by authorities, as well as how the developed world moves its e-waste operations undocumented.

The Story of Human Intervention with Nature is not about a global conflict, war, or controversy played out on a global stage; it is about surviving and allowing this environment to prevail for humans and all other living things.

When so-called world leaders talk about Global Warming, Climate Change, and other well-known terms for mother nature, they forget how developed countries pollute the developing and underdeveloped worlds with their E-Waste.

India is one of the countries that has been used as a garbage dump by the developed world. It's not a new trend that's entered the scene, but it does have a long history. It's also fascinating to learn how broken electronics like computers, laptops, smartphones, televisions, refrigerators, and other readily available electronics end up in countries like India.

Finally, we will see how developed countries have used developing countries as a trash can, and how this has harmed the local people of the developing society and their environment.

How dangerous is this for the residents?

Rare and potentially hazardous materials are used in today's electronics. Smartphones, for example, contain rare metals such as gold, iron, and copper, as well as other elements such as lead, cobalt, mercury, silicon, and others.

The irony is that the majority of these elements can be extracted and reused. But this does not happen all over the world; massive amounts of waste, including rare elements, end up in massive landfills, which then degrade into toxic dumps, slowly spreading diseases and making people sick.

People in Accra's capital, Accra, who live near dumps or landfills, burn this waste to recover copper and other metals. Ghana once saw a large number of locals coughing blood to test its effect, which is still going on today. According to the report, locals have complained of chest pains and headaches, which explains why people are inhaling toxic smoke and, possibly unknowingly, the tiny particles are entering their bodies through the mouth.

The same thing occurs in India. A large amount of illegal waste that ends up in India ends up in the hands of informal waste pickers. Locals who live near landfills or work in the industry have suffered from decreased lung function, skin disorders, and gastric diseases that cause cramps and liver damage.

Is India helpless in the face of e-waste?

As a result, the question arises as to whether India is capable of restricting and enforcing strict sanctions against the West for dumping waste in India. In 2011, India passed legislation requiring only authorized dismantlers and recyclers to collect electronic waste. To address this issue, this law was strengthened later in 2016 by imposing a complete ban on importing ewaste. Still, it appears that the illegal transfer of e-waste is unabated, and the West, rather than constructing a rigid system, is transferring their waste. Only 35% of waste in Europe is collected for recycling; the rest is disposed of in landfills, the ocean, or in countries such as India.

India is the world's "third-largest" producer of e-waste. The crisis in India is twofold: one is dumping from the West, and the other is India's e-waste. According to a UN report on e-waste, India is now the world's third-largest producer of electronic waste. There is a greater need for India to properly handle and dispose of this waste. Otherwise, it will have serious consequences not only for humans and locals but also for the environment.

- What do you do with your old electronics as a consumer?
- Do you put them in and then forget about them?
- Do you throw them in the nearest garbage can?
- Do you resell them? Are you going to recycle it?

So, if consumers do not do their part, they will most likely end up in massive landfills. The number of such landfills is growing by the day, and based on current trends, it will only continue to grow. According to a UN report, India is now the world's third-largest e-waste generator, trailing only the United States and China.

Electronic Waste and India: A Research Paper

Dr. S. Chatterjee Department of Information Technology Scientist-E Every year, Indians generate more than three million metric tonnes of e-waste, and e-waste is an unavoidable byproduct of technology. They have infiltrated every aspect of human life, and Indians are increasingly purchasing them; the pandemic has accelerated their demand. Smartphone shipments to India increased by 23% in the first quarter of 2021, with over 38 million units sold. By the end of 2020, over 500 million people in India will have used a smartphone. Almost eight million laptop computers were shipped to India. More products are being purchased by Indians, resulting in more waste. According to government data, 1 million tonnes of e-waste will be generated in India by 2020. When compared to the previous year, this represents a more than 31 percent increase. Most importantly, this does not include the waste that is handled and ends up in the hands of the informal sector. In India, the informal sector handles approximately 95 percent of e-waste, implying that the crisis is much larger than it appears

Kiran Kishor Maharana TE ITA

AN OVERVIEW OF CARBON TRADING IN INDIA AND ITS LEGAL FACTS

The companies in the developed world are required to meet certain carbon emission targets set by their respective government. However, if these companies are not able to meet their emission targets, they have an alternative of purchasing these carbon credits from the market is from someone successful in meeting these targets and who has a surplus of these credits. This process is known as carbon trading. Carbon trading is also very advantageous for the companies of the developing world as it provides monetary gains in exchange for carbon credits which helps these companies to purchase or change their technology. This technology change eventually helps the companies to reduce carbon emissions.

How Do Carbon Trading Permits Work?

The model used in all current emissions trading systems is called "Cap and Trade" and grants those who release the emissions a specified number of permits. A polluter must have sufficient permits to cover the emissions it releases. Each permit in existing CO2 trading systems is considered to be one tonne of carbon dioxide equivalent (CO2e). According to the model, theoretical model, (but rarely in practice) permits are to be sold - usually by auction - so that from the outset, polluters are forced to put a price on their emissions, and are incentivised to reduce to a bare minimum the permits they seek. What Are Offset Credits? Every current and planned carbon 'cap and trade' scheme involves offset credits in one form or another. Credits are a supplementary source of permissions to pollute that can be bought in from countries or industries outside the cap, usually in the developing world. Their purchase allows the emitter to exceed the emissions cap by paying someone else somewhere else to reduce their emissions instead. It is important to remember: offsets do not reduce emissions, they merely replace them. Does Carbon Trading Work To Reduce Emissions? Carbon trading is increasingly criticized, not least because carbon dioxide emissions in industrialized countries are not declining at the necessary rate to avert catastrophic climate change .Fern and many scientists, economists and NGOs believe that carbon trading is a dangerous distraction from the need to end fossil fuel use and move to a low carbon future. We do not have time to wait for a high price on carbon: we must shift to a low carbon energy, agriculture, transport and industrial world now. The best way to do this is through direct regulation. Fern's initial interest in carbon trading came about because trees were seen as a way of offsetting carbon cheaply, while simultaneously providing money to protect trees.

ZOYA KHULLY TE-ITA

ION-TECH THEME

Is your food healthy?: the way to get a healthy life?

Keywords – Healthy Food, Healthy, wellness industry, Healthy Life 2020 the year of the CoronaVirus pandemic, shattered life.

Soon healthy became quite a choice of living, and it became part of life. The word health alone was marketable enough that immunity became a brandnew norm for everyday human life. The merchandise from ice-creams to candy bars started promising for immunity which can soon lead to this worth of 4.2 trillion dollars business of world health and wellness industry to extend 4.10% within the coming 4 to five years. In the 90s, when cornflakes entered the market, a breakfast revolution was observed. People started drinking tea, followed by quinoa oats, smoothies, and seeds like chia, sunflower, pumpkin flax, sesame hemp and plenty of others. Soon this clutter slowly replaced the standard home-cooked meals.

So here is that the truth for a few of the favorite healthy food –

Humans were never more insecure about their bodies as we are today, and this mindset helps the market growth, not your human lifespan.

1. Green Tea

It sells shortcuts to become thin, otherwise you can become healthy. It's one among the foremost selling wellness products as of now, this industry worth 18.4 billion dollars. The three cups of tea on a daily basis and what it takes to be a superhuman, as they claim. You'll be able to prevent diabetes, burn fat, improve your brain function even you'll be able to be proof against cancer. But what's hump helps improve metabolism, which may be served by the other tea like black, Earl Grey , duke of Northampton and lots of others. Coming to its scientific part, theaflavins in tea-leaf and also the catechins in tea are equally effective.

2. Gluten-free

It is a replacement trend, and lots of will claim it a secret to become healthy. But what does science says? Gluten is simply a mix of proteins like gliadin and glutelin , and it will be found in carbohydrates, wheat, barley. So are these foods harming your healthy life? So these products are just for upset or gluten-sensitive people. But as per estimate, 20% of American citizens are going gluten-free, where only 12% of individuals suffer from these diseases or disorders.

3. Cow Milk

There is no reason to interchange cow milk unless you're a vegan or lactose intolerant. You may see suggestions like cow milk causes you to fat. Choose soy or almond milk, but what does one end with? Helping the market of soy mil to achieve 23.2 billion dollars And science says there's roof being within the perspective of the composition. That sou or almond milk is healthier than cow milk. But cow milk wins the race once you speak about protein content in it.

4. Protein powder

Firstly the merchandise is for those that cannot reach their protein mark, typical for a girl at 46 grams and 56 for men a day. But there'll be no harm if you don't meet some days of the week. These products are as heavy as dumble and value a fortune the maximum amount as gold. These products are too new, and that we don't even know the long-term effect or risks related to them after we consume them. Instead, the right choice would be soya chunks, milk, eggs and nuts, and it's known to everyone. And there are thousands of examples which individuals choose over homemade food and understand them to be healthier.

So what to do?

1. sleep in calories deficit burn quite you're taking in.

2. Drinking more water is important and can help function adequately, remove waste, and transport nutrients and oxygen throughout the body.

3. Get enough sleep. Someday extra one hour of sleep than a unique half-hour gym workout would be a more helpful and efficient day—also, less sleeping cause overeating and typically food.

4. All fruits and vegetables vary; vitamins and minerals accept anything you can-no have to fancy.

5. hamper on processed food.

6. Avoid trigger foods like candy bards, chocolate, chips, cookies, or anything with high sugar, salt, fat, or flour density.

7. Prepare your meal.

8. Move towards low calorie and low-fat alternatives. And few steps like this will make sure you a healthy life than any sale pitch product you get fascinated to. Eat healthily, exercise, keep a positive attitude, with robust psychological state, is that the only mantra.

Kiran Maharana TE ITA

SELF-EXPLORATION: HARMONY IN ONESELF

Body, soul and mind is that the reflection of Humankind. an ideal sink of those three together within reflects out a peaceful soul. Peace in self brings immense happiness. And by being harmonical with self, one can welcome peace in life and every one that good heart desires. Harmony with self is about reaching excellence in everything we do and seeking the perfect in an exceedingly balanced manner.

To achieve Harmony in self, one must follow the environment, which are never unaccustomed us but go unnoticed. Little attention to those details can help one to become the simplest version of ourselves. Fight the fear out. Fear is our worst enemy. So, we want to beat it.

Harmony within Oneself (Self-Exploration) -It is the method to seek out out what's valuable to me by investigating within myself.

> Self-Exploration could be a process of discovering something innate, invariant and universal altogether mortals.

Man service is service to God. Genuine service has twin benefits- it causes you to happy and offers happiness to others. Offer service and receive the love of God.

Jane Austin rightly say-

"To sit within the shade on a fine day and appearance upon the verdant green hills is that the most perfect refreshment". Nature is an integral a part of kinsfolk. somebody's being could be a component of heaven and earth or nature.

There is little doubt there are sufferings and misfortunes in our lives, but nature plays a vital role; as soon as we expect of nature, we forget our sorrows and revel in as quickly as we visit beautiful streams.

The immortal drink which is pouring unto us from heaven's brink within the variety of nature. 'Trees give peace to the souls of men'. We need to explore our fundamental values. to maneuver one step closer to guide a self-exploration journey, we want to journal our thoughts. Journaling could be a time to process emotions and internalize what's happening in our lives.

When we commence our journey of selfexploration, we strengthen our sense of purpose. Setting goals, vision and intentions are one in all the foremost accessible paths towards selfexploration. One should often take calculated risks.

Self-introspection plays a significant role to form Harmony within oneself. If we are threatened with death or occupancy one direction stupidly, at that point, only introspection will help us to form Harmony and provides peace. Coexistence has been defined in numerous ways -To exist together (in time or place) and to exist with mutual tolerance. To learn to measure with a difference and recognize it. To have a relationship between people or groups within which none of the parties tries to destroy the opposite. Sentient life may be a life that's self-aware, having the capacity to look at and see the past, present and future, and reaching onto levels that transcend these concepts within the course of its development as an entity with consciousness. Sentient life forms exhibit a capacity for increasing self-determination and self-emancipation. Insentient means are destitute of feeling or realization. It is not self-aware; it exists because of an interdimeric system with the capacity to evolve, grow and become self-aware at advanced stages. Examples of non-sentient - Life are the Gaia of the world, eco-systems, vegetable life and primitive animal life. Understanding the requirement of self (I) and body-Sukh and Suvidha -Sukh and Suvidha -"Sukh" means happiness in the Hindi language, opposite to "Dukh". "Suvidha" means comfort in the Hindi language, which is the opposite

of Aa- Suvidha.

The modern man considers "Suvidha" the first mission of life and always tries to extract extra money to satisfy his whim and provides happiness to his family. Needs of individual -Physiological Needs Safety Needs Love and Belonging Esteem Self-Actualization Physiological Needs -For the foremost part, physiological needs are obvious-they are the literal requirements for human survival. If these requirements aren't met (except clothing, shelter, and physical activity), the chassis cannot still function. Physiological needs include: Clothing and Shelter Sound sleep Mental satisfaction Air, water, and food Safety Needs -Safety and Security needs include: Personal security Financial security Health and well-being Safety net against accidents/illness and their adverse impacts Love and Belonging -Human after fulfilling their physiological and safety needs, the third layer of human needs comprises feelings of social belongingness. This aspect involves emotionally based relationships generally, such as: Friendship Intimacy Family (good and supportive)

Every person must feel a way of belonging and acceptance, whether it's alittle club, office, religious group, organization, or an oversized social group—even humans apart from his relations, intimate partners, mentors, close colleagues or their confidants.

Esteem -

All humans have to be respected and to possess self-esteem and self-respect. Also referred to as the belonging need, esteem presents the standard human desire to be accepted by society and value the community.

People must engage themselves to realize admiration and recognition by the activity that provides a way of contribution to feel admitted and self-valued.

Imbalances may result in low self-esteem and might increase an complex. People with low self-esteem need respect from others, and that they may seek fame or glory, which again depends on others.

The ultimate sort of rather than demoralizing ourselves for not having the ability to align our desires with natural acceptance all this point, we must always learn that we've got the strength and also the ability to clarify our thoughts and expectations to be able to behave in an exceedingly way that's in step with our deepest values, which brings the foremost extraordinary type of happiness.

Kiran Maharana TE ITA

HARMONY IN SELF: WHAT DOES HARMONY MEAN AS A HUMAN VALUE?

Harmony is typically a human value that refers to compatibility and agreement in feelings, actions, relationships, opinions, interests, and so on. It denotes a state of equilibrium between opposing and influencing forces. Being in harmony entails dealing with disagreements and resolving conflicts in a fair and adequate manner through neutralization. Harmony is the highest level of wisdom that a human being can have. To be at peace with ourselves, we must first understand ourselves. To better understand the actual harmony with ourselves, we must understand and analyze the activities we perform every second. Selfharmoniousness is related to one's actions. It is necessary to comprehend the abstract things that exist within a human body. Desire thought, and expectation is the three major forces of the mind. These three types of emotions are constantly running through our heads. It is common for people to think of the human body as merely an elaborate machine, with all non-material aspects of the human being, such as thinking, feeling, attitudes, emotions, mores, imagination, and so on, as simply the result of physiochemical activities that occur in the physical body. However, the human organism is not a machine and does not follow chemical or biological laws. These emotions are incorporated into self-care activities. These forces push us to live like humans.

So, how to bring harmony within oneself could be as follows: In nature, as in life, we seek balance and a sense of connection. Many religions embrace this sense of calm, which is the essential yin and yang of all beings. Harmony, to us, is the joining of two or more souls, opinions, thoughts, or feelings in order to blend, to become more together than we can be alone, to be connected as a whole. It also refers to a gathering in peace and friendship. All of us, so that we can live in peace and friendship together. Harmony invites you and me to seek that balance with us so that we can embrace all that life has to offer together. Desire, Thoughts, and Expectation - Desire is the ultimate emotion that relates to a sense of belonging or hoping for someone, something, or an outcome. Assume a person has a desire for something and a mental image of that desire. A desire is a virtualized version of what you want to do and be in real life. A thought is an idea or an opinion formed by thinking or occurring unexpectedly in the mind. The activity of mentally analyzing has been considered. A thought is a virtualized representation of how to do and be in the real world. The expectation is a strong belief that something will occur or occur. An expectation is an activity that involves selecting desired items from the outside world.

Imagination:

Imagination is the sum of Desire, Thought, and Expectation. The ability to imagine is the most powerful thing that distinguishes a human being from an animal. Every human being's mind is constantly filled with imagination. We are constantly imagining something in our minds, and it is in our nature to do so. Creativity connects us to both ourselves and the outside world. This relates to our actions and our work. We make many decisions in our imagination, and some of them are carried out. Everything we envision will not be realized.

Harmony Attainment:

Assume that Imagination is in accordance (or inline) with genuine acceptance and that there is no contradiction within Imagination or with genuine acceptance. In that case, it will lead us to happiness or harmony. Honest acceptance entails unconditional and total acceptance of oneself, others, and one's surroundings, as well as the absence of any exceptions from others. When we fully commit to the fundamentals of natural acceptance, we experience a holistic sense of inner harmony, tranquillity, and fulfillment. Otherwise, it will bring us discord and unhappiness.

Desire Sources:

Typically, imagination is random and contradictory to one another, as well as possibly unorthodox to natural acceptance. This is supported by a variety of statistical charts produced by top-level organizations on various types of weaknesses and failures in global societies. The happiness level index of various countries speaks volumes about the desires and imagination of the average person. Preconditioning, Sensation, and Natural Acceptance are the three primary sources of passion. Preconditioning is the act of assuming without knowing, and it is dependent on something or someone outside of oneself. It is constantly changing, and we are unsure whether it will lead us to harmony or happiness. The happiness gained from pleasant sight, sound, taste, or smell is referred to as a sensation. Desires arise within every human being from all of these sources. Discord or unhappiness may result from contradictions between desire and thought, thought and expectation, desire, and expectation, or natural acceptance.

The first step toward self-harmonization is to align our imagining with natural acceptance. Genuine acceptance necessitates a purpose for desire, and any desire that exists within a human being should have a purpose. If a passion serves a vital purpose, then Imagination is guided by natural acceptance, leading to coexistence, harmony, and relationship. The equilibrium will eventually lead to mutual happiness, mutual prosperity, and the achievement of human goals. This is the fundamental framework of the Universal Human Order.

Reality Check:

We discovered that preconditioning and sensation produce the greatest number of desires. Natural acceptance produces very few wishes, which can be increased through selfexploration. Such scenarios are supported by a variety of surveys, statistical charts, and local report indexes prepared by top-level governmental and non-governmental organizations. To achieve inner harmony, our desires should stem primarily from natural acceptance. In conclusion, we should learn how to minimize the effect we believe in caused by preconditioning and sensations by aligning our desires with natural acceptance rather than any substantial outbound happiness through the practices of self-exploration, meditation, and strong awareness.

LEGAL COMPLIANCE FOR MARKET ENTRY: A GUIDE TO COMPANY FORMATION IN INDIA

Online Business Registration: Choosing the best business structure for

Market Entry Strategies

your company is an important decision. Any business in India must register as part of its legal obligations

Different types of business structures in India?

- 1.Limited Liability Partnership: It is ideal for service-oriented businesses or businesses with low investment requirements; it has a tax benefit on depreciation and requires business tax returns to be filed as well as ROC returns to be filed for legal compliance.
- 2. One Person Company: It is for sole proprietors who want to limit their liability; it had tax

benefits such as tax holidays for three years under Startup India, higher tax depreciation benefits, and no tax on dividend distribution. Filing of business returns with limited ROC compliance.

3. Private Limited Company:

It is ideal for companies with a high turnover. It has a tax holiday for the first three years under Startup India, higher depreciation benefits, a business tax return, ROC returns, and an audit is required.

4. Public Limited Company:

It is intended for high-turnover businesses. It is exempt from paying taxes, filing business tax returns, and being audited.

As a result, it is critical to carefully select a suitable business structure because your income-tax return is dependent on it. Remember that each business has different levels of compliance that must be met when registering your Company. Annual auditing of the Company's books of accounts is required. Legal compliance necessitates the expenditure of funds on auditors, accountants, and tax filing specialists. It is critical to select the appropriate business structure when registering your company.

Some business structures are more investor-friendly than others among the options available; investors will always prefer recognised and legal business structures.

• How should a company structure be chosen when applying for registration in India?

· How many owners will your company have?

- Willingness to bear the entirety of the company's liability.
- Your businesses are subject to different income tax rates.

• Plans to solicit investments from investors. How to Register a Company in India? In India, starting a business is currently a four-step process:

Step 1 : Obtaining a digital signature certificate(DSC)

Because the Company's registration is done online, digital signatures are required when submitting forms to the MCA site. All prospective directors and subscribers are required to submit a DSC to the MOA and AOA.

Step 2: Make a note of the director's identification number (DIN)

Anyone seeking to serve as a corporate director must obtain a DIN, which serves as a director's identification number. The proposed director's DIN, as well as proof of their name and address, must be included on the company registration form.

Step 3: Create an account with the MCA Portal.

To apply for company registration, you must complete the SPICe+ form and submit it through the MCA portal. After completing the registration process, the director can

log in and use MCA portal services such as filling out e-forms and searching for public data.

Step 4: Obtain the Certificate of Incorporation.

Once completed and filed with all required papers, the registration application will be reviewed by the Registrar of Companies. He will issue the Company's Certificate of Incorporation after verifying the application.

Documents Needed for a Company Registration

To register in India, a company must have the necessary documents.

• Pancard, Aadhar Card, Driving License, or passport can be used as identity proof for all directors and shareholders of the company.

• For address, you must provide a recent telephone bill, an electricity bill, or a bank account statement for each director and shareholder of the company.

• The bill of maintenance, the sale deed, or a letter or NOC from the

landlord granting authorization to use the office in addition to the tenancy/rental agreement is accepted for online company registration. • To confirm entry to the registered office, a copy of an energy bill, a property tax receipt, or a water bill must be provided. • Sale of the company's premises.

• DIN and DPIN in the case of an LLP, as well as DSC of all directors and partners in an LLP.

What is the cost of company registration?

Plan amount for OPC registration - Rs. 7999* Plan amount for LLP registration - Rs. 9999* Plan amount for PLC registration - Rs. 9999*

The Advantages of Company Registration in India

A company offers numerous benefits, and a licenced company adds authenticity and credibility to the business.

• It safeguards against personal obligations as well as other threats and losses.

- It fosters goodwill and aids in customer attraction.
- It easily provides good investment and reliable investors bank credits.
- Assume responsibility for the protection of the Company's assets.
- Massive dedication to wealth and improved stability
- Enhance your ability to develop and grow large.

Name and capital of the company

• In the Form SPICe+ 32 application, you can only list one preferred name and explain why keeping it is critical.

• There is no minimum paid-up capital requirement for forming a private limited company or a one-person firm.

Compliances to be followed by the Company

• Following the completion of the Company registration process, certain companies must be followed by the Company on an annual basis.

• The Company must follow companies such as appointing its first auditor within 30 days of incorporation in the first board meeting.

• It must comply with the Companies Act of 2013. • It must hold at least four board meetings at the specified intervals.

• Every fiscal year, the profit and loss account and balance sheet must be maintained and filed, and specific statutory registers must be centralised.

• Complete the annual forms listed in the ROC Compliance Calendar.

CYBER LAWS IN INDIA

INTRODUCTION

 "Let's face it, today's thief can steal more than 25 times with a computer. Tomorrow's terrorist may cause more destruction with a keyboard than a bomb."

• The cyberspace environment produces moral, civil, and criminal wrongs.

• As a result, criminal tendencies have now been expressed in a new way • Globally, information technologies are influencing every aspect of life

• Our thinking, the way we govern, the way we do business, and even the way we perceive ourselves have been significantly changed by the Internet • Cyber space is open to participation by all • The transformation from a paper-based world to one without paper has been brought about by IT Categories of cyber crime:

1. Cyber crime against persons 2. Cyber crimes against property 3. Cyber crimes against government

1. AGAINST A PERSON CYBER STALKING **IMPERSONATION** LOSS OF PRIVACY TRANSMISSION OF OBSCENE MATERIAL 2. AGAINST PROPERTY UN AUTHORIZED COMPUTER TRESPASSING COMPUTER VANDALISM TRANSMISSION OF HARMFUL PROGRAMMES STEALING SECRET INFORMATION & DATA

COPY RIGHTS

3. AGAINST THE GOVERNMENT

- HACKING GOVERNMENT WEBSITE
- CYBER EXTORTION CYBER TERRORISM
- COMPUTER VIRUSES

Importance of Cyber Law

• We are living in highly digital world

• Computer networks are an integral part of most companies, and all valuable data is stored electronically

• Forms required by the government, including income tax returns, company laws, etc., are now filled out electronically

• Shopping with credit cards is becoming increasingly popular

• For communication, most people use email, mobile phones, and SMS

• Even in non-cybercrime cases, such as divorces, murders, kidnappings, organized crime, terrorist acts, as well as other non-cybercrime cases, computers/cell phones are often found to contain important evidence.

What is Cyber Law?

The term cyber law refers to the laws governing cyber space. Cyberspace is very wide and includes many different types of devices and ideas such as computers, networks, software, hard disks, USB drives, electronic payment devices, email, and even cell phones.

Cyber law encompasses laws relating to:

- 1. Cyber Crimes
- 2. Electronic and Digital Signatures
- 3. Intellectual Property
- 4. Data Protection and Privacy

NEED FOR CYBER LAWS:

1. Intangible dimensions such as cyberspace cannot be governed or regulated with conventional laws.

2. Cyberspace has complete disrespect for jurisdictional boundaries. An Indian citizen could access a bank's electronic vault hosted on a computer in the United States and transfer millions of rupees to a Swiss bank in less than a minute with only a laptop and mobile phone.

3. Cyberspace handles gigantic traffic volumes every second.Even as we read this, billions of emails are crisscrossing the globe, millions of websites are accessed every minute, and banks electronically transfer billions of dollars each day.

4. Participation in the cyberspace is totally open to everyone. A ten year-old in Bhutan can have a live chat session with an eight year-old in Bali without any regard for the distance or the anonymity between them. TI ACT 2000

The primary source of cyber law in India is the Information Technology Act, 2000 (IT Act) which came into force on 17 October 2000.

Providing legal recognition to electronic commerce and making electronic records more easily available to the Government is the primary purpose of the Act.

The IT Act also penalizes various cyber crimes and provides strict punishments (imprisonment terms upto 10 years and compensation up to Rs 1 crore).

The IT Act was amended by the Negotiable Instruments (Amendments and Miscellaneous Provisions) Act, 2002. This introduced the concept of electronic cheques and truncated cheques.

Information Technology (Use of Electronic Records and Digital Signatures) Rules, 2004 has provided the necessary legal framework for filing of documents with the Government as well as issue of licenses by the Government.

PREVENTION TIPS

Ensure that your computer is updated with the latest patches.

Configure your computer in a secure manner.

Make sure you choose strong passwords and keep them safe.

Protect your computer with security software.

Shield your personal information.

Usually, online offers that seem too good to be true are.

Review bank and credit card statements regularly.

SOFTWARE TESTING & TOOLS

INTRODUCTION:

Tests of software are conducted in order to evaluate their functionality and find out if the software they developed meets the specified requirements or not. Software testing is defined as an activity to check whether the actual results match the expected results and to ensure that the software system is free from errors. Software testing also helps to identify gaps or missing requirements in contrary to the actual requirements. Software testing helps to produce quality product.

Test Process:

- Determining the test methodology
- Planning the tests
- Designing the tests
- Performing the tests (implementation)

Testing – An asset:

Software testing has become an asset for the organizations. Quality has been an important factor in the Software development.

MOST IMPORTANT QA TESTING TOOLS

Testing tools:

There are various tools used for Functional & non-functional testing. These tools help user in various testing process like defect management, Test case management & automation of scripts etc. Below are the list of Testing tools:

- Selenium
- Git hub
- Jmeter
- HP ALM
- Jira
- Tosca

Selenium Testing Tool:

- Automation tool for web-based applications
- Used for functional regression testing
- Uses JavaScript
- A browser plugin that embeds an automated testing engine

Advantages of Selenium:

- Open source, free software
- Easy Installation
- Scripting Techniques: Easy recording and playback of scripts & Modular scripts
- Compatibility: Multiple operating systems (Windows, Linux, Mac). Allows cross browser testing (Record Firefox, execute in IE)
- No dedicated machine required for test execution (user can work in parallel).
- * Integration with third party tools.

Testing principles:

- 1. All tests shall be made according to Customer requirements
- 2. All tests shall be planned before Testing Begins
- 3. Scope must be well defined

Types of Testing:

- Functional Testing :
- Functional Testing covers the test of functionality of application. Below are different types of functional testing.
- Unit Testing
- Integration Testing
- Sanity testing
- Smoke Testing
- UAT Testing
- Regression testing

Non-Functional Testing:

Non-functional testing covers non-functional requirements of Software. Different types of Non-Functional Testing are as below :

- Security testing
- Performance testing
- Load testing
- Stress testing

EZINE COMMITTEE

ATUL PAL

SURAJ RAJBHAR

RANJEET SAW

RISHUL GUPTA

ATAWARIS WARSI

KIARAH PATEL

PRATHIK SHETTY

ANKITA SHARMA

PRASHALI / SRIVASTAVA

CODE OF ETHICS

The Department of Information and Technology of TCET believes that Engineers make a direct impact on almost all aspects of Human Life for its betterment. IT Engineers should strictly adhere to the high principles of ethical conduct. In order to inculcate high standards in professional behaviour, the department advocates the following code of ethics for all the students, Faculty members & staff of the department.

- 1. Strive to be professionally competent to provide high quality product & services.
- 2. To responsibly make decisions, minimizing hazards to society and to disclose potential factors that maybe a threat to health and society.
- 3. Be fair to all individuals and not discriminate between individual based on religion, race, sex, age, disability, national origin, etc.
- 4. Give credits to contribution of others viz. copyrights, patent, intellectual property., etc.
- 5. Protect and respect privacy and ensure confidentiality of information whenever appropriate.
- The knowledge gained during the course of study will not be misused for carrying out any illegal activities, intruding and hacking of networks