Ashokarao Mane Polytechnic Vathar

Department Of Computer Engineering

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VISION:

To be well recognized department in technology to meet the growing needs of the industry and society.

MISSION:

- Imparting quality education through a well-designed curriculum which improves basic and disciplinary knowledge of the subject.
- To train the students to design, develop and test world class software systems.
- To inculcate the spirit of analysis, teamwork, innovation and professionalism among the students.
- To train students with hand and soft skills for their future jobs, higher studies and to be an entrepreneur.

Big Data

Miss. Vagare Ravina R.(TY CO)

Big data is a term for data sets that are so large or complex that traditional data processing application software is inadequate to deal with them. The term has been in use since the 1990s, with some giving credit to John Mashey for coining or at least making it popular. Big data usually includes data sets with sizes beyond the ability of commonly used software tools to capture, curate, manage, and process data within a tolerable elapsed time. Big Data philosophy encompasses unstructured, semi-structured and structured data, however the main focus is on unstructured data. Big data "size" is a constantly moving target, as of 2012 ranging from a few dozen terabytes to many petabytes of data. Big data requires a set of techniques and technologies with new forms of integration to reveal insights from datasets that are diverse, complex, and of a massive scale.

Characteristics:-

- Volume

The quantity of generated and stored data. The size of the data determines the value and potential insight- and whether it can actually be considered big data or not.

- Variety

The type and nature of the data. This helps people who analyze it to effectively use the resulting insight.

- Velocity

In this context, the speed at which the data is generated and processed to meet the demands and challenges that lie in the path of growth and development.

- Variability

Inconsistency of the data set can hamper processes to handle and manage it.

- Veracity

The quality of captured data can vary greatly, affecting accurate analysis

Technologies:-

- A 2011 McKinsey Global Institute report characterizes the main components and ecosystem of big data as follows:
- Techniques for analyzing data, such as A/B testing, machine learning and natural

language processing

- Big data technologies, like business intelligence, cloud computing and databases

- Visualization, such as charts, graphs and other displays of the data.

Applications:-

- Bus wrapped with SAP big data parked outside IDF13.

- Big data has increased the demand of information management specialists so much so that **Software AG, Oracle Corporation, IBM, Microsoft, SAP, EMC, HP** and **Dell** have spent more than $15 billion on software firms specializing in data management and analytics. In 2010, this industry was worth more than $100 billion and was growing at almost 10 percent a year: about twice as fast as the software business as a whole.

India:-

- Big data analysis was tried out for the BJP to win the Indian General Election 2014.

- The Indian government utilizes numerous techniques to ascertain how the Indian electorate is responding to government action, as well as ideas for policy augmentation.

United States of America:-

- In 2012, the Obama administration announced the Big Data Research and Development Initiative, to explore how big data could be used to address important problems faced by the government. [61] The initiative is composed of 84 different big data programs spread across six departments.

- Big data analysis played a large role in Barack Obama's successful 2012 re-election campaign.

- The United States Federal Government owns six of the ten most powerful supercomputers in the world.

- The Utah Data Center has been constructed by the United States National Security Agency. When finished, the facility will be able to handle a large amount of information collected by the NSA over the Internet. The exact amount of storage space is unknown, but more recent sources claim it will be on the order of a few exabytes.

United Kingdom:-

- Data on prescription drugs: by connecting origin, location and the time of each prescription, a research unit was able to exemplify the considerable delay between the release of any given drug, and a UK-wide adaptation of the National Institute for Health and Care Excellence guidelines. This suggests that new or most up-to-date drugs take some time to filter through to the general patient.[69]

- Joining up data: a local authority blended data about services, such as road gritting rotas, with services for people at risk, such as 'meals on wheels'. The connection of data allowed the local authority to avoid any weather-related delay.

Web Sites:-

- **eBay.com** uses two data warehouses at 7.5 petabytes and 40PB as well as a 40PB Hadoop cluster for search, consumer recommendations, and merchandising.

- **Amazon.com** handles millions of back-end operations every day, as well as queries from more than half a million third-party sellers. The core technology that keeps Amazon running is Linux-based and as of 2005 they had the world's three largest Linux databases, with capacities of 7.8 TB, 18.5 TB, and 24.7 TB.

- **Facebook** handles 50 billion photos from its user base.

- **Google** was handling roughly 100 billion searches per month as of August 2012.

- **Oracle** NoSQL Database has been tested to past the 1M ops/sec mark with 8 shards and proceeded to hit 1.2M ops/sec with 10 shards.

Cloud Computing

Miss. BukkamAshwini R.(TY CO)

Introduction

Cloud computing means that instead of all the computer hardware and software you're using sitting on your desktop, or somewhere inside your company's network, it's provided for you as a service by another company and accessed over the Internet, usually in a completely seamless way. Exactly where the hardware and software is located and how it all works doesn't matter to you, the user—it's just somewhere up in the nebulous "cloud" that the Internet represents.

Cloud computing is a buzzword that means different things to different people. For some, it's just another way of describing IT (information technology) "outsourcing"; others use it to mean any computing service provided over the Internet or a similar network; and some define it as any bought-in computer service you use that sits outside your firewall. However we define cloud computing, there's no doubt it makes most sense when we stop talking about abstract definitions and look at some simple, real examples—so let's do just that.

Types of Cloud Computing

Cloud computing is usually described in one of two ways. Either based on the cloud location, or on the service that the cloud is offering.

1. Based on a cloud location, we can classify cloud as:

- public
- private
- hybrid
- community cloud
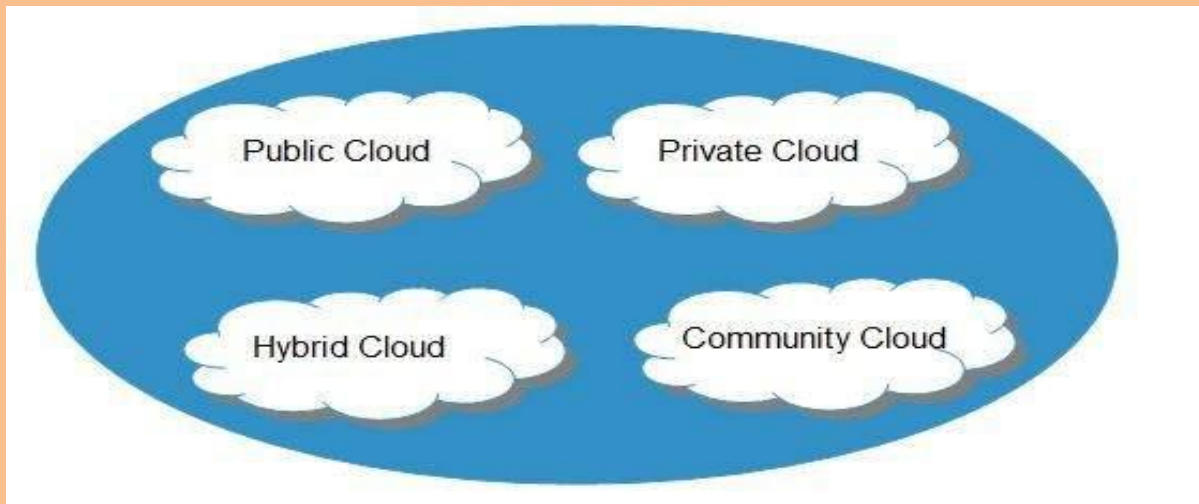
a. Public Cloud

The **public cloud** allows systems and services to be easily accessible to the general public. Public cloud may be less secure because of its openness.

b.Private Cloud

The **private cloud** allows systems and services to be accessible within an organization. It is more secured because of its private nature.

c.Community Cloud

The **community cloud** allows systems and services to be accessible by a group of organizations.

d.Hybrid Cloud

The **hybrid cloud** is a mixture of public and private cloud, in which the critical activities are performed using private cloud while the non-critical activities are performed using public cloud.

IT people talk about three different kinds of cloud computing, where different services are being provided for you. Note that there's a certain amount of vagueness about how these things are defined and some overlap between them.

Infrastructure as a Service (IaaS) means you're buying access to raw computing hardware over the Net, such as servers or storage. Since you buy what you need and pay-as-you-go, this is often referred to as utility computing. Ordinary web hosting is a simple example of IaaS: you pay a monthly subscription or a per-megabyte/gigabyte fee to have a hosting company serve up files for your website from their servers.

Software as a Service (SaaS) means you use a complete application running on someone else's system. Web-based email and Google Documents are perhaps the best-known examples. Zoho is another well-known SaaS provider offering a variety of office applications online.

Platform as a Service (PaaS) means you develop applications using Web-based tools so they run on systems software and hardware provided by another company. So, for example, you might develop your own ecommerce website but have the whole thing, including the shopping cart, checkout, and payment mechanism running on a merchant's server. App Cloud (from salesforce.com) and the Google App Engine are examples of PaaS.

Cloud providers

1. Amazon,Google
2. AT& T
3. Enomaly
4. GoGrid
5. Microsoft
6. NetSuite
7. Rackspace
8. RightScale

Examples

Cloud computing can be used easily in one's personal life as well as in one's business life. It's highly likely that you already use at least one, if not many, cloud computing services

Major corporations including Amazon, Google, IBM, Sun, Cisco, Dell, HP, Intel, Novell, and Oracle have invested in cloud computing and offer individuals and businesses a range of cloud-based solutions.

Advantage

- Create new apps and services
- Store, back up and recover data
- Host websites and blogs
- Stream audio and video
- Deliver software on demand
- Analyze data for patterns and make predictions

Disadvantage

Instant convenience comes at a price. Instead of purchasing computers and software, cloud computing means you buy services, so one-off, upfront capital costs become ongoing operating costs instead. That might work out much more expensive in the long-term.

- If you're using software as a service (for example, writing a report using an online word processor or sending emails through webmail), you need a reliable, high-speed, broadband Internet connection functioning the whole time you're working. That's something we take for granted in countries such as the United States, but it's much more of an issue in developing countries or rural areas where broadband is unavailable.
- Think of cloud computing as renting a fully serviced flat instead of buying a home of your own. Clearly there are advantages in terms of convenience, but there are huge restrictions on how you can live and what you can alter. Will it automatically work out better and cheaper for you in the long term?

Linux Operating System

Ghorpade Bhagyashri S. (TY CO)

What is Linux?

From smartphones to cars, supercomputers and home appliances, the Linux operating system is everywhere. It's been around since the mid '90s, and has since reached a user-base that spans industries and continents. For those in the know, you understand that Linux is actually everywhere. It's in your phones, in your cars, in your refrigerators, your Roku devices. It runs most of the Internet, the supercomputers making scientific breakthroughs, and the world\'s stock exchanges. But before Linux became the platform to run desktops, servers, and embedded systems across the globe, it was (and still is) one of the most reliable, secure, and worry-free operating systems available. For those not in the know, worry not – here is all the information you need to get up to speed on the Linux platform.

What is Linux?

Just like Windows XP, Windows 7, Windows 8, and Mac OS X, Linux is an operating system. An operating system is software that manages all of the hardware resources associated with your desktop or laptop. To put it simply – the operating system manages the communication between your software and your hardware. Without the operating system (often referred to as the "OS"), the software wouldn't function.

The OS is comprised of a number of pieces:

The Bootloader: The software that manages the boot process of your computer. For most users, this will simply be a splash screen that pops up and eventually goes away to boot into the operating system.

The kernel: This is the one piece of the whole that is actually called "Linux". The kernel is the core of the system and manages the CPU, memory, and peripheral devices. The kernel is the "lowest" level of the OS.

Daemons: These are background services (printing, sound, scheduling, etc) that either start up during boot, or after you log into the desktop.

The Shell: You've probably heard mention of the Linux command line. This is the shell – a command process that allows you to control the computer via commands typed into a text interface. This is what, at one time, scared people away from Linux the most (assuming they had to learn a seemingly archaic command line structure to make Linux work). This is no longer the case. With modern desktop Linux, there is no need to ever touch the command line.

Graphical Server: This is the sub-system that displays the graphics on your monitor. It is commonly referred to as the X server or just "X".

Desktop Environment: This is the piece of the puzzle that the users actually interact with. There are many desktop environments to choose from (Unity, GNOME, Cinnamon, Enlightenment, KDE, XFCE, etc). Each desktop environment includes built-in applications (such as file managers, configuration tools, web browsers, games, etc).

Applications:

Desktop environments do not offer the full array of apps. Just like Windows and Mac, Linux offers thousands upon thousands of high-quality software titles that can be easily found and installed. Most modern Linux distributions (more on this in a moment) include App Store-like tools that centralize and simplify application installation. For example: Ubuntu Linux has the Ubuntu Software Center (Figure 1) which allows you to quickly search among the thousands of apps and install them from one centralized location.

The Ubuntu software center is a Linux app store that carries thousands of free and commerical applications for Linux.

Why use Linux?

This is the one question that most people ask. Why bother learning a completely different computing environment, when the operating system that ships with most desktops, laptops, and servers works just fine? To answer that question, I would pose another question. Does that operating system you're currently using *really* work "just fine"? Or are you constantly battling viruses, malware, slow downs, crashes, costly repairs, and licensing fees?

If you struggle with the above, and want to free yourself from the constant fear of losing data or having to take your computer in for the "yearly clean up," Linux might be the perfect platform for you. Linux has evolved into one of the most reliable computer ecosystems on the planet. Combine that reliability with zero cost of entry and you have the perfect solution for a desktop platform.

That's right, zero cost of entry...as in free. You can install Linux on as many computers as you like without paying a cent for software or server licensing (including costly Microsoft Client Access License – CALs).

Let's take a look at the cost of a Linux server, in comparison to Windows Server 2012. The price of the Windows Server 2012 software alone can run up to $1,200.00 USD. That doesn't include CALs, and licenses for other software you may need to run (such as a database, a web server, mail server, etc). With the Linux server...it's all free and easy to install. In fact, installing a full blown web server (that includes a database server), is just a few clicks or commands away (take a look at "Easy LAMP Server Installation" to get an idea how simple it can be).

If you're a system administrator, working with Linux is a dream come true. No more daily babysitting servers. In fact, Linux is as close to "set it and forget it" as you will ever find. And, on the off chance, one service on the server requires restarting, re-configuring, upgrading, etc...most likely the rest of the server won't be affected.

Be it the desktop or a server, if zero cost isn't enough to win you over – what about having an operating system that will work, trouble free, for as long as you use it? I've personally used Linux for nearly twenty years (as a desktop and server platform) and have not once had an issue with malware, viruses, or random computer slow-downs. It's *that* stable. And server reboots? Only if the kernel is updated. It is not out of the ordinary for a Linux server to go years without being rebooted. That's stability and dependability.

Linux is also distributed under an open source license. Open source follows the following key philosophies:

The freedom to run the program, for any purpose.

The freedom to study how the program works, and change it to make it do what you wish.

The freedom to redistribute copies so you can help your neighbor.

The freedom to distribute copies of your modified versions to others.

The above are crucial to understanding the community that comes together to create the Linux platform. It is, without a doubt, an operating system that is "by the people, for the people". These philosophies are also one of the main reasons a large percentage of people use Linux. It's about freedom and freedom of choice.

What is a "distribution?"

Linux has a number of different versions to suit nearly any type of user. From new users to hard-core users, you'll find a "flavor" of Linux to match your needs. These versions are called distributions (or, in the short form, "distros.") Nearly every distribution of Linux can be downloaded for free, burned onto disk (or USB thumb drive), and installed (on as many machines as you like).

Ubuntu\'s Unity desktop.

.Installing Linux

For most, the idea of installing an operating system might seem like a very daunting task. Believe it or not, Linux offers one of the easiest installations of all operating systems. In fact, most versions of Linux offer what is called a live distribution – which means you run the operating system from either a CD/DVD or USB flash drive without making any changes to your hard drive. You get the full functionality without having to commit to the installation. Once you've tried it out, and decided you wanted to use it, you simply double-click the "Install" icon and walk through the simple installation wizard.

Typically, the installation wizards walk you through the process with the following steps (I'll illustrate the installation of Ubuntu Linux):

Preparation: Make sure your machine meets the requirements for installation. This also may ask you if you want to install third-party software (such as plugins for MP3 playback, video codecs, and more).

Preparing for your Linux installation.

Wireless Setup (If necessary): If you are using a laptop (or machine with wireless), you'll need to connect to the network, in order to download third-party software and updates.

Hard drive allocation: This step allows you to select how you want the operating system to be installed. Are you going to install Linux alongside another operating system (called "dual

booting"), use the entire hard drive, upgrade an existing Linux installation, or install over an existing version of Linux.

What Is Linux Used For?

Linux is simply a computer operating system, so its uses are as diverse as any other. It is popular in certain areas, though:

Web Serving
Nearly 60% of all websites on the Internet are run using an Open Source program named "Apache." Most often, it's run on Linux. If you've ever surfed the web, you've (indirectly) used Linux!

Networking
Linux is based on UNIX, an operating system developed in the 1970s and which is still used heavily today, especially to run the Internet. Linux is used both to run parts of the Internet, as well as to run small and large networks in coporations, offices and homes.

Databases
Since Linux is stable, secure and robust, it's perfect for storing huge databases of information.

Desktops
People like us use Linux on our home and work computers, because of its stability and flexibility.

Scientific Computing
Many dozens (or even hundreds or thousands) of Linux systems can be clustered together to work on a single task (like weather forecasting, physics simulations, computer graphics rendering, etc.)

A large collection of inexpensive PCs running Linux can be just as powerful as a mainframe computer, but at a tenth of the cost.

Home Computing
and, of course, people like us, and people like you, can and do use Linux on a daily basis at home and in the office!

- ## Advantages:-

Advantage 1 - Stability

If you have used other operating systems, once you have made the switch to Linux, you will notice that Linux has an edge over Windows here. I can remember rebooting Windows many times over the years, because an application crashed, and I couldn't continue working. Linux can crash also, but it is much harder to do. If an application crashes in Linux, it will usually not harm the kernel or other processes.

Advantage 2-FreeSoftware
Most software can be obtained without cost for Linux. For example, one thing that has kept people from Linux is the lack of office software. That has changed with Open Office, and now you can edit documents and presentations from the popular Microsoft software. The conversion isn't 100% perfect, but it has worked remarkably well in allowing me to correspond and use documents that people send me via e-mail or the web.

Advantage 3 - Runs on old hardware
If you have an old 386 or 486 laying around collecting dust, you can use this to run Linux. I remember running Linux just fine on a Pentium 100 with a 1 GB disk drive, and 16 MB of memory. One use of an old machine like that could be a file server. Just go to your computer store, buy a large hard disk (as long as your old stuff can support it), and you can make a great storage server. With all the digital pictures and movies around today, this could be a great use for Linux. Look into using Samba, a server application for Linux that allows you to make your machine share the disk as a Windows share.

Advantage 4 – Security
Linux has the advantage of the code being in the public domain. This can be a double-edged sword; while you can look at the code, and developers can fix holes rapidly, it also means hackers can find bad code. I have been very impressed with the security of Linux, and the programs that run on it. I think having the code out in the open, and the ability to fix things yourself if necessary is a big plus. Who likes to work blind? With some distributions, on installation the computer will ask you what levels of security you would like for your system. You can be very trusting, or you can be paranoid. Linux gives you this flexibility.

- ## Disadvantages:-
Disadvantage 1 - Learning curve
I won't lie to you; Linux is going to take some time to learn. I know that our society likes to be instantly gratified. Learning Linux is definitely worth your time, but to really master it, you will need to spend some good time in front of your machine tinkering with things. Don't expect to be an expert after reading something like "Linux for Dummies". If you are contemplating this for your company, you will need to budget some money for training and learning time.

Disadvantage 2 - Equivalent programs

While I gave the example before of an office suite of programs that is working well, there are still applications that do not exist in Linux. Thankfully, this list has become much more narrow in recent months. You will want to think carefully when you switch to Linux about what programs you currently use, and if they have Linux support for them. It may not make sense for you to switch if you are going to spend tons of time converting databases and application data.

Disadvantage 3 - More technical ability needed

You will want to make sure that you train someone in Linux really well. Alternately, you could hire someone who has experience with Linux. A good Linux administrator needs to be on hand as you start to migrate your systems over. This is a disadvantage financially, at least in the beginning. You may find over time, however, that you only need a temporary administrator to handle the routine tasks.

Disadvantage 4 - Not all hardware compatible

Some of the latest and greatest hardware that is being produced is not compatible with Linux. At least, not yet. The people that contribute program code and drivers to the Linux kernel are great at including support fairly quickly. Until that time, not everything you buy for hardware in your system may work. I've had to rely on third-party drivers and other means to make hardware like a new Ethernet card work. Eventually, the support will be built in. One thing you can do is before your purchase, ask if the hardware vendor has support for Linux. Some manufacturers do write their own Linux drivers and distribute them with your purchase, making it very easy to integrate with your existing system.

Best Projects of final year students (Top Three):

"Grading and identification of diseases in leaf and fruit"

Miss. Ashwini Bukkam, Miss. Pratiksha Jadhav, Miss. Sana Bijali, jyoti mahapure

Abstract

The agricultural plants need to monitor for control and management of plant disease yield plant harvesting. In this system we use mobile phones and web application for real time monitoring of plant disease for proper diagnosis and treatment. A central server is placed at the pathological laboratory for sharing of the data collected by the mobile phones and web applications.

The part of the processing carried out in the mobile device and web applications includes leaf image segmentation and spotting of disease patch using improved k-means clustering. The collected information is process at the central server and appropriate action is taken according to the test cases.

"Leave Management System"

Miss. PrajaktaMirjakar, Miss.PoojaBhise, Miss. Aishwarya Kokate, Miss. KomalPatil

Abstract

These instructions give you guidelines for preparing synopsis. Use this document as a template if you are using Microsoft Word. Define all symbols used in the abstract. Do not cite references in abstract.

This project is aimed at developing an online leave management system that is of importance to Either an organization or a college. The Leave Management System(LMS) is an Internet based Application that can be accessed throughout the organization or a specified group/Dept. This System can be used to automate the workflow of leave applications and their approvals. The periodic crediting of leave is also automated. There are features like email notifications, cancellation of leave, automatic approval of leave, report generators etc in this system.

"An Android Application for Diabetic Patients"

Miss. Monika Patil, Miss. SnehalBajage, Miss. Priyanka Chavan, Miss. SnehaGaikwad, Miss. VaishanviGhatage

Abstract

The concept of data mining has most useful techniques in educational database is classification. The classification task is used to predict thenal grade of students and as there are many approaches that are used for data classification, the decision tree method is used here. Human disease and associated risk factors are of great interest in the medical field. The skyrocketing cost of health care makes the understanding of disease risk factors of even greater importance.

When risk factors are well understood for a disease it is possible to educate the public to reduce their risk by avoiding risk factors that they can control. There are publicly available data stores which document risk factors facing the general public in the United States. In particular, the Behavioral Risk Factor Surveillance System (BRFSS) has been maintained by the Center for Disease Control (CDC). This study elxamines the disease of diabetes using a set of risk factors which the BRFSS maintains. A logistic regression model is created which models diabetes as a function of risk factors. This research concentrates upon predictive analysis of diabetic treatment using a regression – based data mining technique. The dataset was studied and analyzed to identify activeness of different treatment types for different age groups. They have age groups are consolidated into two age groups, denoted as $p(y)$ and $p(o)$ for the young and old age groups, respectively. Preferential orders of treatment were investigated. We conclude that drug treatment for patients in the young age group can be delayed to avoid side effects. In contrast, patients in the old age group should be prescribed drug treatment immediately, along with other treatments, because there are no other alternatives available.