<u>Solutions to Question Bank – MIS given by Morande Sir</u>

Q.1 what is 'Virtual Office' and how it can be set up using Internet and Various data storage applications?

Virtual Office:

A virtual office setup allows business owners and employees to work from any location by using technology such as laptop computers, cell phones and internet access. A virtual office can provide significant savings and flexibility compared to renting a traditional office space. Meetings can be conducted via teleconferencing and video conferencing, and documents can be transmitted electronically. Some companies even provide virtual office services to give virtual offices the prestige associated with physical offices, such as an important-sounding address, a professional phone-answering service and even occasional rental of office space and conference rooms.

Corporate Advantages

Virtual offices do not incur the costs of leasing or buying a building, maintaining it with janitorial and gardening services as well as providing furniture and cleaning for the employees and customers. Employment expenses, such as insurance and taxes, are also reduced because a virtual corporation can hire independent contractors rather than employees.

Worker Advantages

Workers can stay at home and yet manage business information with the same computing power they would have had at the office. They become more productive by avoiding the hassle of commuting while more successfully juggling the demands of work and home successfully. Because they are no longer being supervised closely by a manager, they are judged on the type of work they produce rather than how they produce it.

Disadvantages

Virtual connections lack the social interactivity of face-to-face contact. Because many nonverbal cues can be missed in emails, phone conversations and video conferences, messages can easily be misinterpreted. Coordinating meetings may prove difficult especially if workers are scattered across several time zones. Finally, collaborations will lack spontaneity because they have to be planned precisely to coordinate schedules and time zones.

Various ways to set up virtual office using Internet and Various data storage applications:

One can use Box Service, Drop box or One drive. Lets discuss each of these services in details

Box: Box (formerly Box.net) is an online file sharing and personal cloud content management service for businesses. The company adopted a freemiumbusiness model, and provides up to 10 GB of free storage for personal accounts. There are official clients

offered for Windows and OS X, however Linux is not supported. A mobile version of the service is available for Android, BlackBerry, iOS, WebOS, and Windows Phone devices

Box is a cloud computing business which provides file-sharing, collaborating, and other tools for working with files that are uploaded to its servers. Users can determine how their content can be shared with other users. Users may invite others to view and/or edit an account's shared files, upload documents and photos to a shared files folder (and thus share those documents outside of Box), and give other users rights to view shared files.

Dropbox: Dropbox is a home for all your photos, docs, videos, and files. Anything you add to Dropbox will automatically show up on all your computers, phones and even the Dropbox website — so you can access your stuff from anywhere.

Dropbox also makes it super easy to share with others, whether you're a student or professional, parent or grandparent. Dropbox works hard to make sure that all your stuff is the same wherever you happen to be. Start a doc from a computer at school or work, make edits from your phone on the way home, then add finishing touches from a tablet in your living room.

With apps available for all your computers, phones, and tablets, you can show off videos, automatically upload photos, or open documents from anywhere. Dropbox makes sharing easy. Invite your friends, family, and teammates to any folder in your Dropbox, and it'll be as if you saved that folder straight to their computer.

You can send people links to specific files, photos, and folders in your Dropbox, too. This makes Dropbox perfect for team projects, sharing party photos with friends, or recording your band's debut album.

OneDrive: (previously SkyDrive, Windows Live SkyDrive and Windows Live Folders) is a cloud storage, file hosting service that allows users to sync files and later access them from a web browser or mobile device.

The current storage limit for OneDrive users is 1 TB for Office 365 paid subscribers or 5 GB of free storage.

First up is OneDrive, Microsoft's storage option. Those who use Windows 8 and 10 have OneDrive built into their operating system, where it shows up in the file explorer next to all of the files on your computer's hard drive. However, anyone can use it on the Web, by downloading a desktop app for Mac and earlier versions of Windows, or the OneDrive Android, iOS, Windows Phone and Xbox apps.

You can store any kind of file in the service, including photos, video and documents, and then access them from any of your Windows PCs or mobile devices. The service organizes your files by type for you, so it's easy to find what you need.

The Android, iOS and Windows Phone apps all have automatic photo uploads, meaning that when you shoot a photo with your phone, it's automatically saved to your account. OneDrive's biggest strength is that it works closely with Microsoft Office apps, such as Word or PowerPoint, so when you launch one of those applications you'll see a list of recent documents saved to OneDrive. If you have an Office 365 subscription and open a document saved in OneDrive, you can collaborate on it in real time with other people. You'll even be able to see the changes they make as they make them.

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2. Write a short note on Enterprise Resource planning (ERP) systems. What are the drawbacks of ERP against CRM systems?

ERP- DEFINITION - An Enterprise resource planning system is a fully integrated business management system covering functional areas of an enterprise like Logistics, Production, Finance, Accounting and Human Resources. It organizes and integrates operation processes and information flows to make optimum use of resources such as men, material, money and machine.

Enterprise resource planning promises one database, one application, one user interface for the entire enterprise, where once disparate systems ruled manufacturing, distribution, finance and sales.

ERP Characteristics: Any system has to possess few key characteristics to qualify for a true ERP solution. These features are:

1. Flexibility: An ERP system should be flexible to respond to the changing needs of an enterprise. The client server technology enables ERP to run across various database back ends through Open Database Connectivity (ODBC).

2. Modular & Open: ERP system has to have open system architecture. This means that any module can be interfaced or detached whenever required without affecting the other modules. It should support multiple hardware platforms for the companies having heterogeneous collection of systems. It must support some third party addons also.

3. Comprehensive: It should be able to support variety of organizational functions and must be suitable for a wide range of business organizations.

4. Beyond The Company: It should not be confined to the organizational boundaries, rather support the on-line connectivity to the other business entities of the organization.

 5. Best Business Practices: It must have a collection of the best business processes applicable worldwide. An ERP package imposes its own logic on a company's strategy, culture and organization.

Features of ERP : Some of the major features of ERP provides multi-platform, multi-facility, multi-mode manufacturing, multi-currency, multi-lingual facilities.

ERP provides complete integration of systems not only across departments but also across companies under the same management.

ERP Vendors (examples of some of the ERP)

Depending on your organization's size and needs there are a number of enterprise resource planning software vendors to choose from in the large enterprise, mid-market and the small business ERP market.

Large Enterprise ERP (ERP Tier I)

- The ERP market for large enterprises is dominated by three companies: SAP, Oracle and Microsoft.

Mid Market ERP (ERP Tier II)

- For the midmarket vendors include Infor, QAD, Lawson, Epicor, Sage and IFS.

Small Business ERP (ERP Tier III)

- Exact Globe, Syspro, NetSuite, Visibility, Consona, CDC Software and Activant Solutions round out the ERP vendors for small businesses.

II. What are the drawbacks of ERP against CRM systems?

ERP software and CRM software both manage important information for your company. While both software systems manage different information, their integration is critical. The benefits of integrating ERP and CRM are many, including ensuring an optimal return on your investment in both platforms. The information captured by both platforms helps employees make better decisions. For example, a sales rep could not make an effective sale without leveraging both CRM and ERP. By forgetting CRM, the rep could miss out on information crucial to that client's sale. Without ERP, the sale has the possibility of not being communicated to accounting, production and/or warehouse departments, creating a mess that could result in unmet client expectations.

Ultimately, integration between ERP and CRM ensures that your customers' expectations, and your company goals, are met. This integration guarantees that all departments in your company are working together. The sales rep can communicate with the accounting, supply and warehouse departments before making the sale. If there are problems, the sales rep will be notified ahead of time. This gives sales reps the ability to close deals with all necessary information and maintain a good name for your company. Without ERP and CRM integration, your company stands the risk of being lost in communication.

Disadvantages of ERP Software

ERP Software even though advantageous has some disadvantages as well. The disadvantages of ERP software are given below

- ERP can be a costly affair

- Implementation is a time consuming process

- Business focus can be disturbed during process change

- Information sharing can have an adverse effect within departments

However, if you take a small and medium business they may not require too many automated system and process due to lack of skilled people in the organization.

3. Write a short note on CRM systems. Provide Appropriate Application

CRM software consolidates customer information and documents into a single CRM database so business users can more easily access and manage it. The other main functions of this software include recording various customer interactions (over email, phone calls, social media or other channels, depending on system capabilities), automating various workflow processes such as tasks, calendars and alerts, and giving managers the ability to track performance and productivity based on information logged within the system.

Common features of CRM software include:

•   Marketing automation: CRM tools with marketing automation capabilities can automate repetitive tasks to enhance marketing efforts to customers at different points in the lifecycle. For example, as sales prospects come into the system, the system might automatically send those marketing materials, typically via email or social media, with the goal of turning a sales lead into a full-fledged customer.

•   Sales force automation: Also known as sales force management, sales force automation is meant to prevent duplicate efforts between a salesperson and a customer. A CRM system can help achieve this by automatically tracking all contact and follow-ups between both sides.

•   Contact center automation: Designed to reduce tedious aspects of a contact center agent's job, contact center automation might include pre-recorded audio that assists in customer problem-solving and information dissemination. Various software tools that integrate with the agent's desktop tools can handle customer requests in order to cut down the time of calls and simplify customer service processes.

•   Geolocation technology, or location-based services: Some CRM systems include technology that can create geographic marketing campaigns based on customers' physical locations, sometimes integrating with popular location-based GPS apps. Geolocation technology can also be used as a networking or contact management tool in order to find sales prospects based on location.

the basic advantages and benefits of CRM are these:

• satisfied customer does not consider leaving

•product development can be defined according to current customer needs

• a rapid increase in quality of products and services Customers Back Office Data Warehouse Operative CRM Collaborative CRM Analytical CRM 86

• the ability to sell more products

• optimization of communication costs

 • proper selection of marketing tools (communication)

 • trouble-free run of business processes

- greater number of individual contacts with customers

- more time for customer

- differentiation from competition

- real time access to information

- fast and reliable predictions

- communication between marketing, sales and services

- increase in effectiveness of teamwork

- increase in staff motivation

Provide Appropriate Application CRM software

Some of the Examples of CRM applications are

☐   Salesforce.com

☐   Microsoft Dynamics CRM

☐   Spiceworks

☐   SugarCRM

☐   NetSuite

1.Salesforce.com -

   The Salesforce cloud is a leader in on-demand customer relationship management. The system offers a broad suite of CRM applications for small, mid-market and enterprise organizations, with a focus on sales and support.

Salesforce offers vertical solutions for the wealth management and financial services segments only, but its partner network (AppExchange) offers a wide variety of other industry-specific solutions. The applications are built on the Force.com platform, a modern architecture that provides increased flexibility and scalability for organizations of any size.

The Salesforce app has capabilities that include sales management (its heritage), marketing automation, partner relationship management and customer service. These help organizations manage customer accounts, track sales leads, conduct and monitor marketing campaigns and provide service post sale.

Salesforce for Outlook allows users to synchronize contacts, calendars, emails and tasks in both places to reduce double entry. Because these capabilities are delivered via the cloud, this happens whether the email or task is completed in the office, home or during the morning commute.

CRM Salesforce solutions are available only for software-as-a-service (SaaS) deployment. Force.com provides a complete technology stack that covers database and

security as well as workflow and user interface. Because all applications are deployed in the "cloud," they can be designed, built, tested and deployed without the added expense of purchasing hardware and IT support.

Salesforce for small business allows users to manage an unlimited number of contacts, track sales deals, manage tasks and events, harvest Web leads and track performance with reporting. The Salesforce enterprise edition layers in call scripts, team-selling functionality, business workflow, setup approval and automation, custom applications, advanced API integrations and more.

Salesforce.com is easily the best CRM platform for sales & ease of use

2.Microsoft Dynamics CRM Software

Microsoft Dynamics CRM was first introduced in 2003. It offers solutions for various industries such as government, financial services, manufacturing, healthcare, retail, professional services and education.

Dynamics CRM offers the following functionality: Sales Force automation, marketing planning and automation, social listening and engagement, and customer service and analytics. It is compatible with Office365, SharePoint, Yammer, Skype, Cortana Analytics, PowerBI, Windows, Azure, and more. Dynamics' flexible architecture allows new features and capabilities to be implemented quickly.

Dynamics CRM provides a next-generation native Microsoft Outlook client, browser-based and mobile access, role-tailored design, and advanced user personalization. Inline business intelligence is available via pre-packaged, real-time, and drillable dashboards, with the flexibility to create custom versions as well.

Dynamics CRM utilizes Windows Workflow Foundation to provide a robust engine for business process automation. Users can implement process automations that are simple (a single step) or complex (a series of steps, checks, waits, and rules that control the automation). The system also leverages machine learning for proactive, actionable insights.

Dynamics is offered both in the cloud and on-premise, and operates on the .NET framework, allowing developers to integrate other applications using Web services. It can be accessed via iPhone, Android and Windows mobile devices. This system is compatible with Internet Explorer, Firefox, Safari or Chrome. It is offered in 44 languages and 130 countries, with data centers around the globe.

4.   Explain what 'Data warehousing' is with an appropriate example.

Data warehousing is the process of constructing and using a data warehouse. A data warehouse is constructed by integrating data from multiple heterogeneous sources that support analytical reporting, structured and/or ad hoc queries, and decision making.

There are decision support technologies that help utilize the data available in a data warehouse. These technologies help executives to use the warehouse quickly and effectively. They can gather data, analyze it, and take decisions based on the

information present in the warehouse. The information gathered in a warehouse can be used in any of the following domains:

•   **Tuning Production Strategies -** The product strategies can be well tuned by repositioning the products and managing the product portfolios by comparing the sales quarterly or yearly.

•   **Customer Analysis** - Customer analysis is done by analyzing the customer's buying preferences, buying time, budget cycles, etc.

•   **Operations Analysis -** Data warehousing also helps in customer relationship management, and making environmental corrections. The information also allows us to analyze business operations.

Functions of Data Warehouse Tools and Utilities

The following are the functions of data warehouse tools and utilities:

•   Data Extraction - Involves gathering data from multiple heterogeneous sources.

•   Data Cleaning - Involves finding and correcting the errors in data.

•   Data Transformation - Involves converting the data from legacy format to warehouse format.

•   Data Loading - Involves sorting, summarizing, consolidating, checking integrity, and building indices and partitions.

•   Refreshing - Involves updating from data sources to warehouse.

Note: Data cleaning and data transformation are important steps in improving the quality of data and data mining results.

Examples of Data warehousing – POS (Point of sales) as suggested by sir

A data warehouse essentially combines information from several sources into one comprehensive database. For example, in the business world, a data warehouse might incorporate customer information from a company's point-of-sale systems (the cash registers), its website, its mailing lists and its comment cards. Alternatively, it might incorporate all the information about employees, including time cards, demographic data, salary information, etc.

By combining all of this information in one place, a company can analyze its customers in a more holistic way, ensuring that it has considered all the information available. Data warehousing also makes data mining possible, which is the task of looking for patterns in the data that could lead to higher sales and profits.

There are different ways to establish a data warehouse and many pieces of software that help different systems "upload" their data to a data warehouse for analysis. However, the basic idea is to first extract data from all the individual sources (cash registers, time clocks, office computers), remove redundant data and organize the data into a consistent format that can be queried.

Example 2

Example of data warehousing – Facebook

A great example of data warehousing that everyone can relate to is what Facebook does. Facebook basically gathers all of your data – your friends, your likes, who you stalk, etc – and then stores that data into one central repository. Even though Facebook most likely stores your friends, your likes, etc, in separate databases, they do want to take the most relevant and important information and put it into one central aggregated database. Why would they want to do this? For many reasons – they want to make sure that you see the most relevant ads that you're most likely to click on, they want to make sure that the friends that they suggest are the most relevant to you, etc – keep in mind that this is the data mining phase, in which meaningful data and patterns are extracted from the aggregated data. But, underlying all these motives is the main motive: to make more money – after all, Facebook is a business.

5. Explain the Concept of 'Data Mining.'

Data mining is the process of finding patterns in a given data set. These patterns can often provide meaningful and insightful data to whoever is interested in that data. Data mining is used today in a wide variety of contexts – in fraud detection, as an aid in marketing campaigns, and even supermarkets use it to study their consumers.

Data warehousing can be said to be the process of centralizing or aggregating data from multiple sources into one common repository.

Example of data mining

If you've ever used a credit card, then you may know that credit card companies will alert you when they think that your credit card is being fraudulently used by someone other than you. This is a perfect example of data mining – credit card companies have a history of your purchases from the past and know geographically where those purchases have been made. If all of a sudden some purchases are made in a city far from where you live, the credit card companies are put on alert to a possible fraud since their data mining shows that you don't normally make purchases in that city. Then, the credit card company can disable your card for that transaction or just put a flag on your card for suspicious activity.

What's the difference between data mining and data warehousing?

Data mining is the process of finding patterns in a given data set. These patterns can often provide meaningful and insightful data to whoever is interested in that data. Data mining is used today in a wide variety of contexts – in fraud detection, as an aid in marketing campaigns, and even supermarkets use it to study their consumers.

Data warehousing can be said to be the process of centralizing or aggregating data from multiple sources into one common repository.

We can say that data warehousing is basically a process in which data from multiple sources/databases is combined into one comprehensive and easily accessible database. Then this data is readily available to any business professionals, managers, etc. who

need to use the data to create forecasts – and who basically use the data for data mining.

Datawarehousing vs Datamining

Remember that data warehousing is a process that must occur before any data mining can take place. In other words, data warehousing is the process of compiling and organizing data into one common database, and data mining is the process of extracting meaningful data from that database. The data mining process relies on the data compiled in the datawarehousing phase in order to detect meaningful patterns.

6. Write a short note on Digital Ecosystem.

The world is becoming digital and this digitisation is leading to greater connectivity and interaction that easily crosses the old traditional boundaries (such as the boundary of your organisation). Digitisation is resulting in the reality that we operate within a larger digital ecosystem, a complex environment that we cannot control, where different organisations and people with different objectives participate.

Wikipedia describes a digital ecosystem as "a distributed, adaptive, open socio-technical system with properties of self-organisation, scalability and sustainability inspired from natural ecosystems."

"A digital ecosystem is as a complex value chain of distributed suppliers, with contributors specializing in providing either the creative content (or collaborating to create it), or the platform for distribution of that content. Amazon and Apple are great examples of platform suppliers."

Digital ecosystems use "a metaphor based on the biological ecosystems which have organisms and flows of energy and nutrients between the organisms, I see it as a matter of equating the elements in the metaphor with the human digital environment". "The combination of B2B and B2C process interactions viewed from the perspective of an entity or entities. The ecosystem boundary defined by degrees of separation from original entities."

A complete digital ecosystem consists of hardware, software, and services. All play a particular role in the ecosystem in order for it to function as a whole. Based on the design of the hardware, the function of the software, and the services provided, ecosystems can target specific parts of the market or the market as a whole. Microsofts's XBOX is an example of a hardware, software, and services solution targeted for a specific part of the market. The point is that all three components are necessary for a holistic ecosystem.

Eg Amazon Kindle

The Microsoft Ecosystem

 I believe Microsoft thinks more like an operating system company than a software company. This is not always a bad thing and in this case, thinking in terms of enabling a platform is a good thing. What is important is how that platform enables an ecosystem. Microsoft has been relatively strong as it relates to desktops and notebooks. If you are

not Apple and you need to ship an OS for a desktop or notebook, Microsoft is your best choice.

Where Microsoft has been weak with regards to personal computing is in the area of services. This is not to say they don't or can not think like a services company. In fact XBOX Live is, I believe, the best service for gamers out there hands down.

Microsoft has been strong in enabling hardware and software for PCs but needs to strengthen that strategy as it relates to smartphone and tablets. Microsoft and Google both need to invest in helping those in their hardware and software ecosystem differentiate and make money.

In this new era of truly personal computing, being led by devices like smartphones, and now tablets to a degree, Microsoft is well behind Google.

The Google Ecosystem

Google has been fascinating to watch Google, unlike many businesses, thinks first like a services company and then works backwards. What I mean is that while Apple and Microsoft think more from a hardware and or software viewpoint first, Google thinks first and foremost like a services company.

In this mindset, it becomes pretty clear that, unlike other companies in this industry, Google exists to make money for no one else except Google. They may say this is not true but their actions prove that it is. Google wants to extract value from all hardware, while using software (like Android) only as mechanism to connect to their services, which is how they make money.

For Google's ecosystem to strengthen, they need to figure out how to work better with hardware manufactures in order to create a unified ecosystem AND invest in helping others make money. If they do not do this, their ecosystem becomes unsustainable and could someday be void of life.

The challenge that the horizontal platform strategy brings is that it makes it harder for hardware players in the ecosystem to differentiate. Both Google and Microsoft enable what I call the "sea of sameness."

In a world where consumer preference and choice is prevalent, a lack of differentiation is the slow kiss of death.

The Apple Ecosystem

Apple on the other hand stands out clearly from the pack due to their vertical approach. By owning and controlling all the major parts of the ecosystem, the hardware, software and services, they are in the drivers seat when it comes to emphasizing value.

Unlike Google and Microsoft, Apple doesn't enable a hardware ecosystem for anyone other than themselves. I view this as a strength, but I know many who view this as a weakness. When it comes to software, although they own and control the OS and a few "core apps," they do a great job enabling the software community to add value to their ecosystem.

Apple is strong in hardware and software but like Microsoft they need to get better at cloud services. This is where the true stickiness of any ecosystem will lie.

Ultimately the biggest opportunity is to create an ecosystem that is simple and convenient to be a part of. This will drive product after product loyalty and keep consumers invested. And, if people eventually choose a product based on ecosystems, then any company dealing with a product needs to make sure they can deliver true consumer value throughout the entire solution if they want to keep their customers happy.

The key to building a stable ecosystem is to create value for everyone involved.

7. Explain Knowledge Management using 'Augmented Reality 'technology.

Knowledge management (KM) is the process of capturing, developing, sharing, and effectively using organizational knowledge. It refers to a multi-disciplinary approach to achieving organizational objectives by making the best use of knowledge.

Augmented reality (AR) is a live direct or indirect view of a physical, real-world environment whose elements are augmented (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data.

Abbreviated as AR, Augmented Reality is a type of virtual reality that aims to duplicate the world's environment in a computer. An augmented reality system generates a composite view for the user that is the combination of the real scene viewed by the user and a virtual scene generated by the computer that augments the scene with additional information. The virtual scene generated by the computer is designed to enhance the user's sensory perception of the virtual world they are seeing or interacting with. The goal of Augmented Reality is to create a system in which the user cannot tell the difference between the real world and the virtual augmentation of it. Today Augmented Reality is used in entertainment, military training, engineering design, robotics, manufacturing and other industries.

 Researchers and engineers are pulling graphics out of your television screen or computer display and integrating them into real-world environments. This new technology, called augmented reality, blurs the line between what's real and what's computer-generated by enhancing what we see, hear, feel and smell.

On the spectrum between virtual reality, which creates immersive, computer-generated environments, and the real world, augmented reality is closer to the real world. Augmented reality adds graphics, sounds, haptic feedback and smell to the natural world as it exists. Both video games and cell phones are driving the development of augmented reality. Everyone from tourists, to soldiers, to someone looking for the closest subway stop can now benefit from the ability to place computer-generated graphics in their field of vision.

Augmented reality is changing the way we view the world -- or at least the way its users see the world. Picture yourself walking or driving down the street. With augmented-reality displays, which will eventually look much like a normal pair of glasses,

informative graphics will appear in your field of view, and audio will coincide with whatever you see. These enhancements will be refreshed continually to reflect the movements of your head. Similar devices and applications already exist, particularly on smartphones like the iPhone.

8. Explain 'Artificial intelligence' as Information Systems application with an Appropriate Example.

Artificial Intelligence is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the intelligent humans think. AI is accomplished by studying how human brain thinks, and how humans learn, decide, and work while trying to solve a problem, and then using the outcomes of this study as a basis of developing intelligent software and systems.

Philosophy of AI While exploiting the power of the computer systems, the curiosity of human, lead him to wonder, "Can a machine think and behave like humans do?" Thus, the development of AI started with the intention of creating similar intelligence in machines that we find and regard high in humans.

Goals of AI To Create Expert Systems:

The systems which exhibit intelligent behavior,

• learn, demonstrate, explain, and advice its users. To Implement Human Intelligence in Machines: Creating systems that

• understand, think, learn, and behave like human

Applications of AI has been dominant in various fields such as:

Gaming

• AI plays crucial role in strategic games such as chess, poker, tic-tac-toe, etc., where machine can think of large number of possible positions based on heuristic knowledge.

 Natural Language Processing

• It is possible to interact with the computer that understands natural language spoken by humans.

Expert Systems

• There are some applications which integrate machine, software, and special information to impart reasoning and advising. They provide explanation and advice to the users.

Vision System

• These systems understand, interpret, and comprehend visual input on the computer.

. For example, o A spying aeroplane takes photographs which are used to figure out spatial information or map of the areas.

 o Doctors use clinical expert system to diagnose the patient.

o Police use computer software that can recognize the face of criminal with the stored portrait made by forensic artist.

Speech Recognition•

Some intelligent systems are capable of hearing and comprehending the language in terms of sentences and their meanings while a human talks to it. It can handle different accents, slang words, noise in the background, change in human's noise due to cold, etc.

Handwriting Recognition

The handwriting recognition software reads the text written on paper by a pen or on screen by a stylus. It can recognize the shapes of the letters and convert it into editable text.

Intelligent Robots

Robots are able to perform the tasks given by a human. They have sensors to detect physical data from the real world such as light, heat, temperature, movement, sound, bump, and pressure. They have efficient processors, multiple sensors and huge memory, to exhibit intelligence. In addition, they are capable of learning from their mistakes and they can adapt to the new environment.

9. Explain the terminology of 'Business Intelligence' using Roambi Analytics(or any application of your choice).

The term business intelligence (BI) represents the tools and systems that play a key role in the strategic planning process of the corporation. These systems allow a company to gather, store, access and analyze corporate data to aid in decision-making.

Generally these systems will illustrate business intelligence in the areas of customer profiling, customer support, market research, market segmentation, product profitability, statistical analysis, and inventory and distribution analysis to name a few.

Most companies collect a large amount of data from their business operations. To keep track of that information, a business and would need to use a wide range of software programs, such as Excel, Access and different database applications for various departments throughout their organization. Using multiple software programs makes it difficult to retrieve information in a timely manner and to perform analysis of the data

Business Intelligence Software

Business intelligence software is designed with the primary goal of extracting important data from an organization's raw data to reveal insights to help a business make faster and more accurate decisions. The software typically integrates data from across the enterprise and provides end-users with self-service reporting and analysis. BI software uses a number of analytics features including statistics, data and text mining and predictive analytics to reveal patterns and turn information into insights.

• BI is different from Artificial Intelligence (AI) AI systems make decisions for the users☐ BI systems help the users make the right decisions, based on☐ available data

Business Intelligence (BI) is a broad category of computer software solutions that enables a company or organization to gain insight into its critical operations through reporting applications and analysis tools. BI applications may include a variety of components such as tabular reports, spreadsheets, charts, and dashboards. Although traditional business intelligence systems were delivered via host terminals or paper reports, the typical modern deployment of a BI application is over the web, via Internet or intranet connections. It is also possible, and becoming more popular, to develop interactive BI apps optimized for mobile devices such as tablets and smart phones, and for e-mail.

Well-designed BI applications can give anyone in your company the ability to make better decisions by quickly understanding the various "information assets" in your organization and how these interact with each other. These assets can include customer databases, supply chain information, personnel data, manufacturing, product data, sales and marketing activity, as well as any other source of information critical to your operation. A robust BI application, which includes integration and data cleansing functions, can allow you to integrate these disparate data sources into a single coherent framework for real-time reporting and detailed analysis by anyone in your extended enterprise – customers, partners, employees, managers, and executives.

About Roambi Analytics

Designed from the ground up for mobile users, Roambi is the leading app for creating and delivering rich, interactive reports, charts, dashboards, KPIs, analytics, and data visualizations that were designed from the ground up for mobile users.

There are 2 ways to freely explore how Roambi transforms your data.

Sign up for a Free publisher account to create, publish, and share your own Roambi Analytics visualizations and Flow publications.

Download the free Roambi Analytics app for iOS, Windows 8, or Android. With the app you can explore sample visualizations, or create and share an instant Blink visualization of any CSV file with Roambi Analytics 8 for iOS

(Need to elaborate more ...Unable to find more information on this topic)

10. Explain the hybrid storage practices with application named'Symform'.

Symform is a revolutionary cloud storage & backup service providing free or affordable unlimited online storage. .

Every new Symform user is granted 10 GB of cloud storage space to use completely free of charge and without obligation. Users can earn unlimited additional cloud backup at no monetary cost by contributing excess local drive space to the network. Most users and businesses have excess local drive space available, and their costs for electricity and bandwidth are already paid. Users get cloud spaces equal to 1/2 the amount of local drive space that they contribute to the network. So if you contribute 100 GB of local

drive space we'll give you an additional 50 GB of cloud storage. We think that makes it worthy of the title "free".

Symform provides you with secure, reliable, and inexpensive unlimited online storage that is faster, more secure and more affordable than anything traditional data center-based providers can offer. While the vast majority of our users choose to contribute enough local drive space to cover their cloud storage needs, some customers cannot or choose not to contribute. Those customers choose to enroll in one of our affordable cloud storage plans.

Features

1.   BACKUP ALL YOUR FILES

Install Symform on all of your devices and we'll make a mirrored copy of your stuff in the cloud. As you add, delete, and update files those changes are made to your cloud copy as well. No file size limitations or other restrictions.

2.   SYNCHRONIZE DEVICES

Stop worrying about where your stuff is saved. With Symform you can sync your folders across all of your devices. Never email files to yourself or schlep around an external drive again.

3.   YOUR CONNECTED DIGITAL ECOSYSTEM

What's better than connecting all the devices you own to the cloud?

Like desktop, laptop, pda, mobile, tablets etc

4.   CONNECT INFINITE FOLDERS

Symform's not like other cloud storage providers that only allow you to create a single folder. We give you the ability to connect any folder on your device for no additional cost. Make your folders happy.

5.   CONTRIBUTE UNUSED SPACE

Get free cloud storage when you allocate unused space on your device for your Symform account. Users that contribute get 1 GB free for every 2 GB contributed. Contribution can always be fine tuned for your personal needs.

THE MOST SECURE CLOUD STORAGE

Most cloud storage services stick all your stuff in a big datacenter somewhere, leaving it vulnerable to hacking and natural disaster. We do better than that. Here are the steps we go through to process, distribute, and protect your data.

1. ADVANCED ENCRYPTION

Symform is encrypted cloud storage. We secure each folder with a unique AES-256 encryption key for maximum protection.

Block Distribution for Secure Cloud Backup

2. BLOCK DISTRIBUTION

Encrypted files are broken into blocks. The number and size of blocks depends on the original file.

Cloud Storage Redundancy

3. REDUNDANT FRAGMENTS

Each block is shred into 64 fragments, with 32 redundant storage parity fragments added for RAID-96 cloud redundancy.

Secure Cloud File Distribution

4. SECURE DISTRIBUTION

These fragments are distributed to 96 random devices in the Symform network. Making it nearly impossible for people to get access.

Cloud Data Recovery

5. UNIQUE FILE RECOVERY

Thanks to the redundancy of our technology, only 64 of the 96 fragments are needed to recover the entire block.

Self Healing Cloud Storage

6. SELF HEALING

If a device goes down, the fragments that it hosted are automatically regenerated and redistributed to the secure cloud backup network.

11. Explain the term 'Networked Attached Storage' (NAS) using appropriate application. Comment on the benefits.

Network-attached storage (NAS) is a file-level computer data storage server connected to a computer network providing data access to a heterogeneous group of clients. NAS is specialized for serving files either by its hardware, software, or configuration.

Network-attached storage (NAS) is a type of dedicated file storage device that provides local-area network local area network (LAN) nodes with file-based shared storage through a standard Ethernet connection.

NAS devices, which typically do not have a keyboard or display, are configured and managed with a browser-based utility program. Each NAS resides on the LAN as an independent network node and has its own IP address.

NAS is a Storage-Centric Design

NAS allows more hard disk storage space to be added to a network that already utilizes servers without shutting them down for maintenance and upgrades. With a NAS device, storage is not an integral part of the server. Instead, in this storage-centric design, the server still handles all of the processing of data but a NAS device delivers the data to the user.

A NAS device does not need to be located within the server but can exist anywhere in a LAN and can be made up of multiple networked NAS devices.

(Sugggested by Sir) Pogoplug is a multimedia sharing device that lets you connect any external hard drive and then access and share your content over the internet. Easily share content, including video and photos, with friends and family with no uploading

Pogoplug features

Automatic, Remote Backup for Your Computers and Mobile Devices

Continuous Backup on the Go

Access Your Backup From Anywhere

Powerful

Secure, Easy Sharing

60-Second Setup

12. Write a short note on following Data Collaboration using appropriate application.

Data collaboration means visualizing data from all of your different data sources, and getting this data to the right people, in the right format, in time to use it in making effective decisions. Today"s operations are swamped with data from multiple sources from every layer of the business.

Collaboration Data Objects (CDO), previously known as OLE Messaging or Active Messaging, is an application programming interface included with Microsoft Windows and Microsoft Exchange Server products.

Today"s operations are swamped with data from multiple sources from every layer of the business. Of critical concern is data collaboration -- finding the right data, getting it to the people that need it to make their decisions, and making sure it gets to them in a timely manner. By using monitoring and analysis tools to pull together all of your different data sources and visualizing those results in an intuitive way, personnel can make an immediate difference in responding to conditions, resulting in reliable and agile operations.

Points suggested by sir

1.   MS – Exchange - Microsoft Exchange Server is a calendaring and mail server developed by Microsoft that runs exclusively on the Microsoft Windows Server product line. Exchange Server was initially Microsoft's internal mail server.

For email accounts, the most common account types are Microsoft Exchange Server, POP3, IMAP, and Outlook.com (formerly Hotmail). Some features in Outlook 2010 require a Microsoft Exchange Server account. Exchange is a collaborative communications server that is used by many organizations.

Purpose

Exchange Server stores email and other data in one or more central databases. Each user usually has his own "mailbox," which stores all of his calendar, contact and task items as well as their email folders.

The user's email client software connects to the server(s) to display and synchronize email and PIM data. The centralization of the data storage allows network administrators to back up and control all of the data from one location.

Features

Exchange includes many standard features that are of use to companies. Delegate access features enable mailbox and folder sharing between staff members. Managers often use these features to provide calendar access to secretaries who book appointments on their behalf.

Outlook Web Access (OWA) provides web-based email access to Microsoft Exchange accounts, allowing Exchange users to access their emails and other Exchange information from any computer with an Internet connection.

Exchange has a wealth of settings to control the flow of email messages. These include the ability to reroute mail when an employee leaves, forward it to external mailboxes, or copy to a number of recipients via a distribution list.

Mobile

Exchange can also interface with a range of smartphones and mobile devices. Microsoft's ActiveSync technology lets users access their Exchange account wirelessly using a

compatible device, with emails, tasks and calendar and contact information constantly synchronized in both directions.

Architecture

Large organizations can purchase Exchange Server as a standalone software package for installation on one or more physical servers within their IT infrastructure. Exchange is also available as part of Microsoft's Small Business Server product, aimed at smaller companies.

A range of providers also offer hosted Exchange solutions. These solutions allow companies or individuals to use Exchange via the Internet without having to maintain an internal server infrastructure. Usually operated on a "pay-monthly" basis, hosted Exchange provides access to Exchange features with a lower initial cost.

2.   Google Apps

Google Apps is a set of web applications provided by Google. These web applications include Google Email, Google Calendar, GoogleDocs, Google Talk (Chat), Google Mobile and Google Sites. All of these web applications offer an online alternative to traditional office suites.

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All of these web applications offer an online alternative to traditional office suites.

3.   Icloud

Cloud connects you and your Apple devices in amazing ways. It makes sure you always have the latest versions of your important information—like documents, photos, notes, and contacts—on whatever device you're using. It lets you easily share photos, calendars, locations, and more with friends and family. It even helps you find your device if you lose it.

Don't have an iOS device or a Mac? You can still get web-only access to create and share documents using Pages, Numbers, and Keynote by signing in to iCloud.com. With web-only access, you also get 1 GB of free storage for any documents you create.

iCloud features

After setting up iCloud on your iOS device or Mac, you have access to the following features.

Note: iCloud requires an Internet connection, and some iCloud features have minimum system requirements. iCloud may not be available in all areas, and iCloud features may vary by area.

•   Content everywhere: Automatically get purchases from the iTunes Store, App Store, and iBooks Store on all your devices, and download past purchases anytime. For more information, see What is content everywhere?

- Photos: Use iCloud Photo Library to store your entire library of photos and videos in iCloud, and let iCloud keep them up to date on all your iOS devices (iOS 8 or later) and Mac computers (OS X v10.10.3 or later) and on iCloud.com. Use iCloud Photo Sharing to share albums of photos and videos with just the people you choose, and let them add photos, videos, and comments to your shared albums. iCloud also stores all photos you recently added to your devices in My Photo Stream.

- **iCloud Drive:** Safely store and organize all kinds of documents in iCloud. Work with them in iCloud Drive on iCloud.com and on your devices set up for iCloud Drive.

- **Family Sharing:** Up to six family members can share their iTunes Store, App Store, and iBooks Store purchases without sharing accounts. Pay for family purchases with the same credit card and approve kids' spending right from a parent's device. Plus, share photos, a family calendar, reminders, and locations. For more information, see the Apple Support article Family Sharing.

- **Mail, Contacts, Calendar, Notes, and Reminders:** Keep your mail, contacts, calendars, notes, and reminders up to date using Mail, Contacts,Calendar, Notes, and Reminders on iCloud.com, and using apps on your iOS devices, Mac, and Windows computer.

- **Find My iPhone:** Find your missing iOS device or Mac, or one belonging to a family member, by using Find My iPhone on iCloud.com. Find My iPhone includes Activation Lock, which makes it harder for anyone to use or sell your iPhone, iPad, or iPod touch if it's ever lost or stolen.

- **Pages, Numbers, and Keynote:** Use beta versions of Pages, Numbers, and Keynote on iCloud.com and the corresponding apps on your iOS devices and Mac to store your spreadsheets, presentations, and other documents in iCloud Drive. iCloud keeps those items up to date everywhere you view and edit them.

- **Bookmarks, Reading List, and iCloud Tabs:** See the webpages you have open on your Mac and iOS devices (your iCloud Tabs). Read articles from your Reading List, even when you're offline. Plus, use the same bookmarks on your iOS devices, Mac, and Windows computer. For more information, go to the Safari section in the user guide for your iPhone, iPad, or iPod touch. Or, on your Mac, click the Safari icon in the Dock, then choose Help > Safari Help.

- **iCloud Keychain:** Keep your passwords, credit card information, and more up to date, and have it entered automatically on your iOS devices and Mac computers. For more information, go to Basics > Security > iCloud Keychain in the user guide for your iPhone, iPad, or iPod touch. Or, on your Mac, click the Finder icon in the Dock, choose Help > Mac Help or Help > Help Center, then search for iCloud Keychain.

- **iMovie Theater:** Watch your finished movies and trailers on all your devices. For more information, see iMovie Help for iPhone, iPad, or Mac.

- **Backup and restore:** iCloud automatically backs up your iOS device daily over Wi-Fi when your device is turned on, locked, and connected to a power source. You can use your iCloud backup to restore your iOS device or set up a new one.

- **Back to My Mac:** Securely connect your Mac to your remote Mac over the Internet, then share the screen or files of your remote Mac. For more information, on your Mac, click the Finder icon in the Dock, choose Help > Mac Help or Help > Help Center, then search for Back to My Mac.

With iCloud set up on your devices, you get an email account and 5 GB of free storage for your mail, documents, photos, and iOS device backups. Your purchased music, apps, TV shows, and books don't count against your available space. See iCloud storage and backup overview.

13. Explain the Concept of 'Remote Access' using Appropriate Example.

Remote access is the ability to get access to a computer or a network from a remote distance. In corporations, people at branch offices, telecommuters, and people who are travelling may need access to the corporation's network. Home users get access to the Internet through remote access to an Internet service provider (ISP). Dial-up connection through desktop, notebook, or handheld computer modem over regular telephone lines is a common method of remote access. Remote access is also possible using a dedicated line between a computer or a remote local area network and the "central" or main corporate local area network. A dedicated line is more expensive and less flexible but offers faster data rates. Integrated Services Digital Network (ISDN) is a common method of remote access from branch offices since it combines dial-up with faster data rates. Wireless, cable modem, and Digital Subscriber Line (DSL) technologies offer other possibilities for remote access.

Application for Remote access - Teamviewer

TeamViewer is a proprietary computer software package for remote control, desktop sharing, online meetings, web conferencing and file transfer between computers.

A TeamViewer account provides you with the opportunity to use the features of the Computer & Contacts list. This includes the following features:

☐   List of all computers, to which you connect regularly

☐   Management of your customers' TeamViewer data for a simplified connection setup

☐   Fast connection setup without entering a TeamViewer ID or password

☐   Call up important TeamViewer features with one click (Remote control, presentation, file transfer, chat, etc.)

☐   Remote Monitoring of your computers, e.g. see whether your Windows Firewall is activated or if your Antivirus software needs an update.

You can upgrade this feature with more checks using ITbrain™ Monitoring.

☐   Manage the TeamViewer service queue and all service cases

☐   Connection reports of your TeamViewer connections within the TeamViewer Management Console

☐   Define connection settings for connections to your customers and computers

With your TeamViewer account, you can also access the TeamViewer Management Console, use TeamViewer Integrations, or develop your own TeamViewer applications using the TeamViewer API.

How to use team viewer

1.   Launch the TeamViewer full version.

2.   Click the Sign Up link in the Computers & Contacts window.

3.   Enter your name, your email address and a password as the credentials for your account.

4.   Click the Next button.

5.   Define a Device name and a Password to remote access this computer.

6.   Click the Next button.

7.   Click the Finish button.

8.   You have signed up for a TeamViewer account.

14. What is Data explosion? Explain in Details.

The information explosion is the rapid increase in the amount of published information or data and the effects of this abundance. As the amount of available data grows, the problem of managing the information becomes more difficult, which can lead to information overload

One of the key aspects of the emerging Internet of Things - where real-world objects are connected to the Internet - is the massive amount of new data on the Web that will result. As more and more "things" in the world are connected to the Internet, it follows that more data will be uploaded to and downloaded from the cloud

•   In today's 24x7 business world with demand for timely and relevant information, devising a forward-looking big data strategy is critical to ensure your organization can effectively leverage data from all available sources and quickly turn it into a competitive advantage

•   Online and offline behavior are blending into a single entity.

•   There are many sources of data that are contributing to this remarkable data growth.

- Data comes from mobile, Internet and traditional sources... and people are evolving from information consumers to producers, by creating their own data.

- Common but often ineffective coping methods: adding more hardware, pushing data transformations elsewhere, such as down into the database, or custom coding when addressing data performance problems that arise as data volumes grow.

- Overall objective: quickly adapt and respond to changing business demands.

- Integrating enterprise data and new sources of data (e.g. web data) is the way forward for timely, accurate access to information as a basis for making business decisions.

- To manage big data for the long-term as data volumes continue to grow, look to create a fast, efficient, simple cost-effective data integration environment.

- With a sound strategy in place, big data can actually help provide the key to unlocking an organization's next big opportunity.

So what are some reasons for the data explosion?

1. A major trend over the last few years has seen many organisations implementing ERP and CRM solutions. This in turn has caused a dramatic increase in the amount of data we are storing about our customers, prospects, partners and suppliers.

2. The current economic state of the world is likely to have resulted in a higher number of business deals, such as mergers and acquisitions. This in turn has resulted in growing data volumes, with the associated issues such as duplication of information. Organizations therefore have to not only manage all of their own data, both old and new, but also this wave of incoming data from other sources.

3. Legislation changes could also have played a major part in the retention of data. The laws have changed around how we use, store and maintain our data. Organizations are often required to hang on to more data, for longer.

4. The improvements in technology and database capabilities have changed the way data is stored and scaled, and the structure and format of the data. New innovations have enabled more and more data to be managed and supported, while improvements in speed, quality and storage are being made all the time.

Coping with the data explosion

Be open-minded to change. A typical response is simply to add more hardware to the system, more storage, more servers and more bandwidth, but this does not generally solve the issue - in fact it can contribute to capturing more data, and thereby increasing the cost of maintenance and storage with more servers, IT staff and bigger facilities to house it all. Find out what works for you and your organization best. For example - choosing your data storage. Relational databases are ideally suited to the task of capturing and storing huge quantities of data and are designed to cope with a massive throughput of transactions. Then you can choose an analysis tool that compliments your already existing business intelligence investment.

15. What is the significance of Virtual Private Networks (VPN) in enterprise Environment?

A virtual private network (VPN) is a technology that creates an encrypted connection over a less secure network. The benefit of using a VPN is that it ensures the appropriate level of security to the connected systems when the underlying network infrastructure alone cannot provide it.

The importance of Virtual Private Network (VPN)

A VPN or a Virtual Private Network is a set of networks conjugated together to establish secure connection over a public network (internet).

VPNs are also used by businesses and large corporations like banks, educational institutions to provide remote users with the privilege to access the private network securely and effectively. A wisely chosen VPN can even protect you online irrespective of whether you are using platforms like windows, Linux, Android or Apple.

here are several reasons why you need a VPN (Virtual Private Network).

Unrestricted access: Access websites that are blocked in your country/region with minimum or no constraints. One some occasions, visual media organizations like Netflix,HBO,Hulu, might restrict access to their content via the web to only some geographical regions. This may be due to licensing or other legal issues. Under such circumstance, you can use the VPN to make it seem like you are literally from the same location as their server even though you belong to the region where the service is restricted. Our VPNs are designed to offer secure connection to private and public networks in addition to assisting in bypassing internet filters. You can literally access the information from your home or any other part of the world.

Anonymity: VPNs are effective in keeping your connections and communications secure along with your identity unlike proxies and IP mask applications. It prevents the internet service provider from tracking your activities on the web and grants you the privilege to browse anonymously on both websites and web applications due to the encrypted connection.

Different IP Addresses: VPNs offer the provision to browse the web from a different IP address. Such a feature comes in handy when you are travelling or when you wish to access the websites or applications blocked in your country.

Wi-Fi Security: Helps you connect to Wi-Fi found on airports, bookstores, restaurants etc, which generally requires no authentication securely and effectively. In such instances, a VPN can encrypt your internet activity thereby keeping it out of the reach of hackers.

The best Virtual Private Network will ideally be a balance of cost, server distribution, features, connectivity and protocols. A true VPN service will respect your privacy concerns more than anything. VPNSecure, we respect nothing but your privacy and we do not log, we keep our word and even our systems are designed around this. It is always advised to be prudent when it comes to choosing a VPN.

Cost Savings with a VPN

A VPN can save an organization money in several situations:

- eliminating the need for expensive long-distance leased lines

- reducing long-distance telephone charges

- offloading support costs