Chapter-01: Review questions.

1. Why are information System(IS) essential in organizations?

   - **Decision-making:** Information systems provide managers with timely and accurate information that helps them make informed decisions
   - **Efficiency:** IS can automate routine tasks, reducing the time and effort required to perform them.
   - **Communication:** IS can facilitate communication within and between organizations. This can improve collaboration, knowledge sharing, and problem-solving, leading to better outcomes.
   - **Competitive advantage:** IS can provide organizations with a competitive advantage by enabling them to gather, analyze, and act on data faster than their competitors.
   - **Customer service:** IS can help organizations improve customer service by providing timely and accurate information to customers, allowing them to track orders, access product information, and resolve issues more quickly.

2. Why do systems analyst need to know who the stakeholders are in the organization?

   Answer: Analysis of the information needs of the stakeholders is an important first step in determining the requirements of the new system. It is essential that the analyst understands the environment in which the new system will operate.

3. Who are the typical stakeholders in an information system? What are their roles?

   Answer:

   - ✓ Owners - fund the project
   - ✓ Users - anyone who interacts with the system
   - ✓ Designer - translate business needs into technical solutions
   - ✓ Builders - develops and builds the system
   - ✓ Analysts - defines the business needs and requirements

4. Please explain what the consequences are if an information system lacks a system owner.

   Anyone who has interest in the system If an information system lacks an owner, then the system will not have funding.

5. What are the difference between internal users and external users?Give examples.

   Answer: Examples of internal users are owners, managers, and employees. External users are people outside the business entity (organization) who use accounting information. Examples of external users are suppliers, banks, customers, investors, potential investors, and tax authorities

6. What are the differences between the role of system analysts and the role of the rest of the stakeholders?

   Answer: System analysts will check the code that is developed by the stakeholder. Stakeholder will takes part in dealing with the corporate responsibility. Whereas the system analyst will communicate with the stakeholders to learn and document the needs that are needed for producing the business documents.

7. What kind of knowledge and skills should a system analyst possess?

   Answer: a high level of technical expertise and broad knowledge of hardware, software and programming. excellent analytical skills. a methodical, investigative and inquisitive mind and attention to detail. good interpersonal and client-handling skills, with the ability to manage expectations and explain technical detail.

8. In addition to the business an computing knowledge that system analysis should possess, what are the other essential skills that they need to effectively complete their jobs?

   Whether formally qualified or not, a System Analyst should also possess these skills:

   - ✓ Critical thinking ability
   - ✓ Strong problem-solving capacity
   - ✓ High-level written and verbal communication skills
   - ✓ Project management skills

- ✓ Ability to work under pressure and to tight deadlines
- ✓ Knowledge of data modelling and data visualization tools

9. Why are good interpersonal communication skills essential for system analysis?

Systems analyst is the person who has to deal with group activities, business politics, strife's, and change. This is where interpersonal skills come into role because the analyst most be able to have an understanding with everyone that is involved with the project, in the project and beyond.

10. What are some of the business drivers for today's information systems?

some of today's business drivers consist of the following:

- **Improved Decision-Making:** Timely and accurate information is crucial for making informed business decisions.
- **Enhanced Customer Experience**: Customer-centricity is vital for businesses today. Information systems help organizations understand customer behavior, preferences, and needs.
- **Business Agility and Adaptability:** In a rapidly changing business environment, agility is essential. Information systems allow organizations to quickly adapt to market changes, industry trends, and customer demands.
- **Data-driven Insights:** Information systems facilitate the collection, storage, and analysis of vast amounts of data. By harnessing this data, businesses can uncover valuable insights, patterns, and trends.
- **Cost Reduction:** Information systems help businesses streamline their operations, automate routine tasks, and eliminate redundant processes, resulting in cost savings.

11. What are the differences between e-commerce and e-business?

Particulars	E-commerce	E-business
Meaning	It refers to performing online commercial transactions and activities over the internet.	It refers to performing every type of business activity through the internet.
Scope	It is a narrow concept and is a subset of e-business.	It is a broad concept and is a superset of e-commerce.
Limitation	E-commerce transactions are limited.	E-business transactions are not limited.
Resources	It involves mandatory use of the internet.	It consists of the use of the internet, extranet or intranet.
Business models	E-commerce is appropriate in a Business to Customer (B2C) context.	E-business is appropriate in a Business to Business (B2B) context.

12. What are the differences between information and knowledge?

BASIS FOR COMPARISON	INFORMATION	KNOWLEDGE
What is it?	Refined data	Useful information
Combination of	Data and context	Information, experience and intuition

BASIS FOR COMPARISON	INFORMATION	KNOWLEDGE
Processing	Improves representation	Increases concisousness
Outcome	Comprehension	Understanding
Transfer	Easily transferable	Requires learning

13. What are the most important technology drivers for today's information systems?

- **Cloud Computing:** Cloud computing has become an important driver of information systems, providing organizations with flexible and scalable infrastructure and services.
- **Artificial Intelligence (AI):** AI is becoming increasingly important in information systems, providing organizations with the ability to automate tasks, analyze data, and make decisions.
- **Internet of Things (IoT**): IoT devices are becoming more prevalent in information systems, enabling organizations to gather data from sensors and other devices.
- **Blockchain:** Blockchain technology is becoming an important driver of information systems, providing organizations with secure and transparent ways to store and share data.
- **Big Data Analytics:** Big data analytics is becoming increasingly important in information systems, providing organizations with the ability to analyze large amounts of data to identify patterns and trends.

14. What are the four steps in a system development process? What happens in each step?

The four steps in a system development process are:

a. System initiation

✓ Here we need to identify the problem

b. System analysis

✓ Analyze and evaluate the problem ii. Identify solution requirements and expectations

c. System design

- ✓ look for the all the possible solutions for the problem and then evaluate and choose the best. ii. Make designs to implement the chosen solution.

d. System implementation

- ✓ Implement the chosen solution ii. Review the solution we implemented. Also check for any flaws and if any repeat steps 1 and 2.

15. Why is system initiation essential in the system development process?

Here are some reasons why system initiation is essential:

1. **Identify the need:** System initiation helps the project team identify the need for a new system or a change to an existing system.
2. **Define the scope:** System initiation helps define the scope of the project. This involves identifying the objectives, goals, and requirements of the system, as well as the potential risks, constraints, and assumptions.
3. **Evaluate feasibility:** System initiation helps evaluate the feasibility of the project.
4. **Secure funding:** System initiation helps secure funding for the project. It involves preparing a business case and presenting it to stakeholders to obtain approval and funding for the project.
5. **Develop project plan**: System initiation helps develop the project plan. This involves creating a high-level plan for the project, including the project schedule, budget, and resource allocation.

Problems and Exercises.

1. Assume you are a system analyst who will be conducting a requirements analysis for an individually owned brick-and-mortar retail store with a point-of-sale system.Identify who the typical internal and external users might include.

1. **Internal Users:**
   - **Store Owner:** The owner of the retail store who will use the point-of-sale system to manage sales, inventory, and financial reports.
   - **Store Manager:** The store manager who will use the system to monitor sales, manage inventory levels, and schedule employees.

- **Sales Associates:** The sales associates who will use the system to process sales transactions, check inventory levels, and provide customer service.

2. **External Users:**
   - **Customers:** The primary external users of the point-of-sale system are the customers who will use it to make purchases.
   - **Suppliers:** Suppliers who provide inventory to the store may need to access the system to monitor inventory levels and fulfill orders.
   - **Accountants:** An external accountant may need access to the point-of-sale system to manage financial records and generate reports for tax purposes.
   - **Government Authorities:** Government authorities such as tax agencies may need access to the system for auditing and regulatory purposes.

2. Assume you are a systems analyst for a consulting company and have been asked to assist the chief executive officer(CEO) of a regional bank.The bank recently implemented a plan to reduce the number of staff. including loan officers, as a strategy to maintain profitability. Subsequtntly, the bank has experienced chronic problems with backlogged loan officers who are able to review and approve or disapprove loans.The CEO of the bank is interested in solutions that would allow the approval process to move faster without increasing the number of loan officers,and has engaged your company to come up with suggestions.What is one type of system that you might recommended to the bank?

   One type of system that I might recommend to the bank to help with the loan approval process is an automated loan origination system.

   An automated loan origination system is a software system that uses algorithms and rules to process loan applications automatically, from submission to approval or denial. The system can collect applicant data, such as credit history, employment information, and income data, and use this information to calculate a risk score and determine the applicant's eligibility for a loan. The system can also automate the approval process based on pre-defined criteria and generate automated responses to applicants.

3. How do communication and collaboration systems efficiency and effectiveness? What are some of the communication and collaboration systems that are being used by an increasing number of organizations?

Here are some ways in which communication and collaboration systems can improve efficiency and effectiveness:

1. **Improved Communication:** Communication systems, such as email, instant messaging, and video conferencing, can help individuals and teams communicate more quickly and effectively, regardless of their physical location. This can help to reduce delays in decision-making and increase the speed of project completion.
2. **Better Coordination:** Collaboration systems, such as project management software, can help teams to coordinate their efforts more effectively, allowing for better task allocation and tracking of progress.
3. **Increased Knowledge Sharing**: Collaboration systems can also facilitate the sharing of knowledge and information, both within teams and across departments.

Some of the communication and collaboration systems that are being used by an increasing number of organizations include:

- ✓ **Video Conferencing Systems**: Platforms such as Zoom, Microsoft Teams, and Google Meet allow for virtual meetings and collaboration, making it easier for remote teams to communicate and work together.
- ✓ **Project Management Systems:** Platforms such as Asana, Trello, and Jira allow for the coordination of tasks and workflows across teams, improving efficiency and accountability.
- ✓ **File Sharing Systems:** Platforms such as Dropbox, Google Drive, and OneDrive allow for the easy sharing and collaboration on documents and files, reducing the need for email attachments and enabling real-time collaboration.
- ✓ **Enterprise Social Networks:** Platforms such as Yammer, Workplace by Facebook, and Microsoft Teams allow for social collaboration and communication within organizations, improving knowledge sharing and fostering a sense of community.

4. Identify the type of information system that clerical workers in an organization would typically use and why?

   Clerical workers in an organization typically use a transaction processing system (TPS).

   A transaction processing system is a type of information system that captures, processes, and stores transactional data, such as sales, inventory, and payroll transactions. These systems are designed to handle large volumes of routine, day-to-day transactions and provide real-time information to support operational decision-making.

5. As information systems increase in complexity and comprehensiveness, ethical issues regarding accessing and using data from these systems are also increasing. What are some of these ethical issues?

- ✓ **Privacy:** The increasing amount of personal data stored in information systems raises concerns about privacy
- ✓ **Security:** As more data is stored in information systems, the risk of security breaches and cyber-attacks also increases.
- ✓ **Bias:** Information systems are only as unbiased as the data that is fed into them.
- ✓ **Ownership:** The ownership of data in information systems can be a complex issue

6. What are business to consumer(B2C0 and business to business(B2B) web applications and what are some examples of each type?

B2C web applications are designed for companies to sell products or services directly to individual consumers over the internet. These applications typically offer an easy-to-use interface, secure payment processing, and a wide range of products and services. Examples of B2C web applications include:

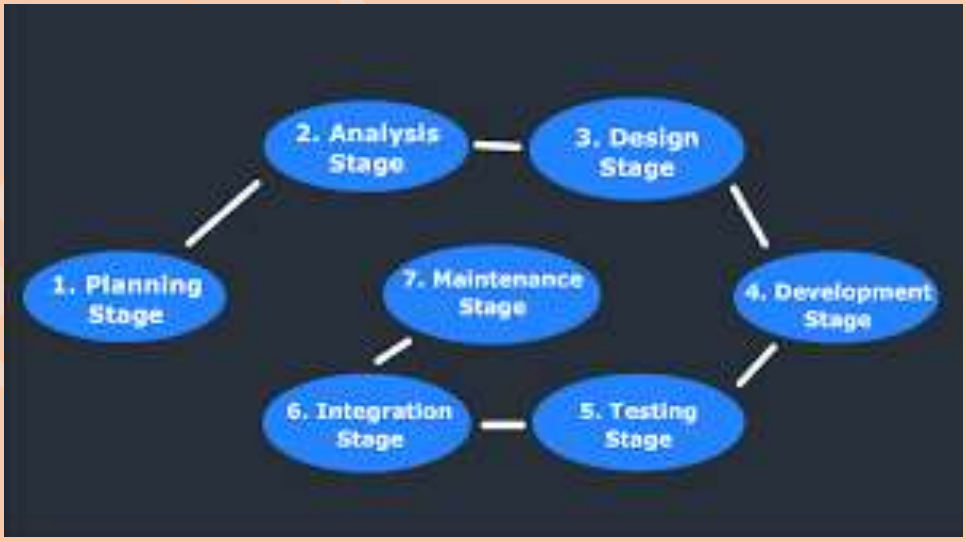
- ✓ **Amazon:** A popular online retailer that sells a vast range of products, from books and electronics to clothing and groceries.
- ✓ **Netflix:** A subscription-based streaming service that offers a wide range of TV shows and movies to its customers.
- ✓ **Uber:** A ride-sharing app that connects passengers with drivers.

- ✓ **Zillow:** A real estate website that allows users to search for properties, view property values, and find real estate agents.

B2B web applications, on the other hand, are designed for businesses to conduct transactions with other businesses over the internet. These applications often offer features such as bulk ordering, invoicing, and account management. Examples of B2B web applications include:

- ✓ **Salesforce:** A cloud-based customer relationship management (CRM) platform that allows businesses to manage their customer interactions and sales processes.
- ✓ **Shopify:** An e-commerce platform that allows businesses to create their own online stores and sell products to customers.
- ✓ **Hubspot:** A marketing and sales automation platform that helps businesses to attract and engage customers.
- ✓ **PayPal:** A secure online payment system that allows businesses to send and receive payments electronically.

7. While system development processes and methodologies can vary greatly, identify and briefly explain the generic phases of the system development process that are described in the textbook and which must be completed for any project. You are a contractor with a systems integration company.



8. Your company has a contract with a local firm to link all of their systems so they can transparently work together. Their applications include a number of existing legacy systems, which were built at different times by different developers using a variety of languages and platforms, as well as several newer contemporary applications. What is the term for this type of linking? What type of tool would you most likely use and what are some examples of these tools?

To integrate the legacy systems and newer contemporary applications, a middleware tool would be most likely used. Middleware is software that sits between the different applications and allows them to communicate and share data. It provides a standardized interface for the applications to interact with each other and can help to overcome differences in programming languages, platforms, and data formats.

Examples of middleware tools that can be used for system integration include IBM MQ, Apache Kafka, Microsoft BizTalk, Oracle Fusion Middleware, MuleSoft, and TIBCO. These tools provide a range of integration capabilities such as messaging, data transformation, routing, and protocol mediation.

9. Your company has asked you to develop a new Web-based system to replace its existing legacy system. There will be very little change in business requirements and functionality from the existing legacy system. Suggest which system development process you might use and why.

For a project where there is very little change in business requirements and functionality from the existing legacy system, a suitable system development process would be the iterative model.

The iterative model is a type of software development process in which the project is divided into small parts or iterations. Each iteration is a mini-project in itself and includes the planning, analysis, design, development, testing, and implementation phases. The project team develops a small part of the system in each iteration and then reviews and refines it before moving on to the next iteration.

The iterative model is suitable for this project because it allows the development team to make incremental changes to the existing system and refine it through feedback from stakeholders. The iterative approach can help identify and fix issues earlier in the development process, which can reduce the overall project risk.

10. You recently Joined a retail sales company which has recently bought out and assimilated a commercial industrial supply house. You have been asked to lead a project to develop a consolidated inventory-tracking system. Suggest which system development process you might use and why.

The Agile methodology is a type of software development process that emphasizes flexibility and collaboration between the development team and stakeholders. It is an iterative and incremental approach to software development, which allows for continuous feedback and refinement of the system throughout the development process.

The Agile methodology is well-suited to this project because it enables the development team to work closely with stakeholders, including both the retail sales company and the commercial industrial supply house. The development team can prioritize requirements and features based on stakeholder feedback, and work on developing the most important features first.

11. Your company president sits down beside you just before a meeting is to begin and tells you that people keep saying the customer needs to install a CRM, but doesn't really know what it is. The company president then asks you to explain it in nontechnical terms in the next 30 seconds.

Sure, a CRM or Customer Relationship Management system is like a big digital address book that helps businesses keep track of all their interactions with their customers. It can store information like customer names, contact details, and their purchase history, and helps businesses stay organized and provide better customer service. Think of it like a tool that helps businesses keep track of their relationships with their customers.

12. Industry studies indicate that mobile and wireless technology has become one of the major technology drivers for designing new information systems. Why is this the case and what is the impact?

Mobile and wireless technology has become a major driver for designing new information systems because it has transformed the way people access and use information. With the widespread adoption of smartphones and other mobile devices, people are now able to access information and communicate with each other from anywhere at any time.

This has led to a demand for information systems that are accessible through mobile and wireless devices, and can provide users with real-time information and services. This demand has driven the development of new technologies and software applications that are specifically designed for mobile and wireless devices.

The impact of mobile and wireless technology on information systems has been significant. It has enabled businesses to become more agile and responsive to customer needs, by providing them with real-time access to information and allowing them to make decisions on the go. It has also enabled new business models to emerge, such as mobile commerce and mobile banking.

13. Briefly explain the impact of web services on web development. Give some examples of web services.

Web services have had a significant impact on web development by enabling different applications to communicate with each other over the internet. This has made it possible for developers to create more sophisticated web applications that can integrate with other systems and share data seamlessly.

Some examples of web services include:

1. **RESTful APIs:** These are web services that use the Representational State Transfer (REST) architecture to provide a simple and lightweight way for applications to exchange data over the internet.
2. **SOAP web services**: SOAP (Simple Object Access Protocol) is a messaging protocol that enables applications to exchange structured information over the internet.
3. **Payment gateway web services:** These are web services provided by payment gateway providers such as PayPal and Stripe, which enable e-commerce websites to accept online payments securely.

14. Identify in which phase of the development process the following activities belong:
    a. development of the technical blueprint or design document.
       This activity belongs to the Design phase of the development process.
    b. Project scheduling.
       This activity belongs to the Planning phase of the development process.
    c. Integration testing.
       This activity belongs to the Testing phase of the development process
    d. Interviewing system users to define business requirements.
       This activity belongs to the Analysis phase of the development process
15. What are two most important advantages of object-oriented software technologies over structured software technologies.
    - **Faster development:** Reuse enables faster development. Object-oriented programming languages come with rich libraries of objects, and code developed during projects is also reusable in future projects.
    - **Lower cost of development:** The reuse of software also lowers the cost of development.