Hisham Teach

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اهلا، المنهج راح يتغير ويندمج مع CPIT251 وكنت
بحذف الملف كامًلا لكن قلت ارسله يمكن في
طالب/ة متأخر عن الخطة او حصله ظرف وحاليا
قاعد يدرسها والمنهج ما اتغير باقي فليش ما انشرها
ويستفيد منها

وبسبب أنه المنهج بيتغير ما قدرت أغطي
كامل المنهج للأسف..

الملف مجاني للجميع ، وأتمنى محد يسيء استخدامه

تحياتي / هشام تعباني

Content

Ch 1 : Systems Development in an Organizational Context

Writing Questions:

1- Write the Definition of Systems analysis?

is the study of sets of interacting entities, including computer systems analysis. This field is closely related to requirements analysis.

2- Write the Definition of Systems Design, And What You know About it:

is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements

- Complex organizational process.

- Used to develop and maintain computer-based information systems.

- Used by a team of business and systems professionals.

3- Write the Definition of Information Systems?

is the study of complementary networks of hardware and software that people and organizations use to collect, filter, process, create, and distribute (Share) data.

4- An organizational approach to systems analysis and design is driven by , and definition them?

is driven by :

Methodology: Step by step way to solve a particular problem.

Techniques: A particular way in a phase to address a particular problem.

Tools: Tools helps the techniques to achieve the methodology. Tools here means the CASE Tools which is discussed later.

5- Write the Definition of Application Software?

Computer software designed to support organizational functions or processes such as inventory management or payroll systems.

6- Write the Definition of Systems Analyst?

Organizational role most responsible for analysis and design of information systems.

7- Write the Definition of System Development Methodology?

is a standard process followed in an organization to conduct all the steps necessary to analyze, design, implement, and maintain information systems.
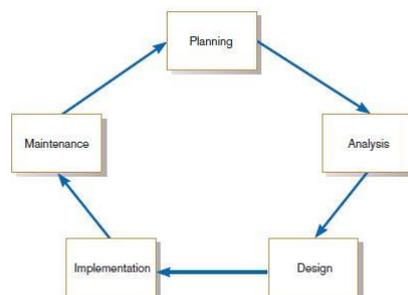
8- Write the Definition of Systems Development Life Cycle (SDLC)?

Traditional methodology used to develop, maintain, and replace information systems.
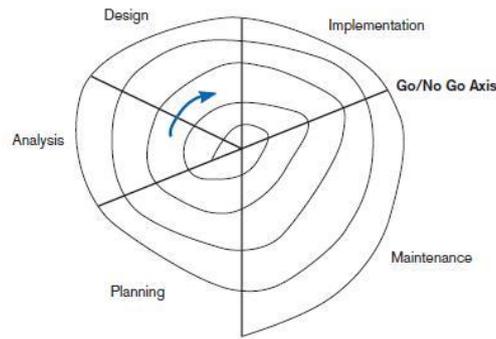
9- List the phases of Systems Development Life Cycle (SDLC)?

- Planning

- Analysis

- Design

- Implementation

- Maintenance

10- Draw the Systems Development Life Cycle (SDLC)?

11- Draw the Evolutionary model of Systems Development Life Cycle (SDLC)?

12- Write the definition of the Following :

- **Planning:** an organization's total information system needs are identified, analyzed, prioritized, and arranged.

- **Analysis:** system requirements are studied and structured

- **Design:** a description of the recommended solution is converted into logical and then physical system specifications.

- **Logical design:** all functional features of the system chosen for development in analysis are described independently of any computer platform.

- **Physical design:** the logical specifications of the system from logical design are transformed into the technology-specific details from which all programming and system construction can be accomplished.

- **Implementation:** the information system is coded, tested, installed and supported in the organization.

- **Maintenance:** an information system is systematically repaired and improved.

13- Write the definition of Traditional Waterfall SDLC ?

- One phase begins when another completes, with little backtracking and looping.

- The waterfall development model originates in the manufacturing and construction industries: highly structured physical environments in which after-the-fact changes are prohibitively costly, if not impossible.

14- Draw the Traditional Waterfall SDLC?
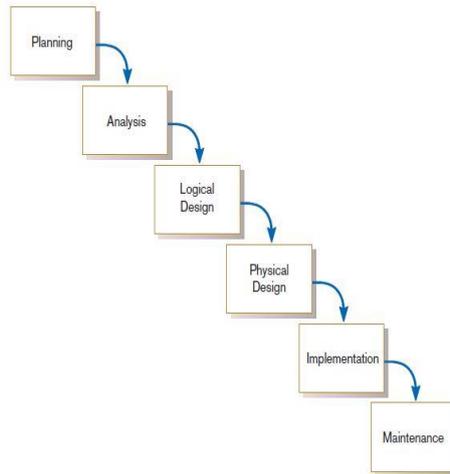
15- Write about Problems with Waterfall Approach?

- System requirements "locked in" after being determined (can't change).

- Limited user involvement (only in requirements phase).

- Too much focus on milestone deadlines of SDLC phases to the detriment of sound development practices.

16- Write the definition of Rapid application development (RAD) :

It is a software development methodology that uses minimal planning in favor of rapid prototyping. The "planning" of software developed using RAD is interleaved with writing the software itself. The lack of extensive pre-planning generally allows software to be written much faster and makes it easier to change requirements.

17- Draw the Rapid application development (RAD)?
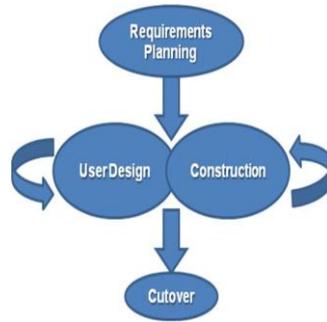
18-List the Four phases of RAD , and definition them?

- **Requirements Planning phase** – combines elements of the system planning and systems analysis phases of the System Development Life Cycle (SDLC). Users, managers, and IT staff members discuss and agree on business needs, project scope, constraints, and system requirements. It ends when the team agrees on the key issues and obtains management authorization to continue.

- **User design phase** – during this phase, users interact with systems analysts and develop models and prototypes that represent all system processes, inputs, and outputs. *User Design* is a continuous interactive process that allows users to understand, modify, and eventually approve a working model of the system that meets their needs.

- **Construction phase** – focuses on program and application development task similar to the SDLC. In RAD, however, users continue to participate and can still suggest changes or improvements as actual screens or reports are developed. Its tasks are programming and application development, coding, unit-integration and system testing.

- **Cutover phase** – resembles the final tasks in the SDLC implementation phase, including data conversion, testing, changeover to the new system, and user training. Compared with traditional methods, the entire process is compressed. As a result, the new system is built, delivered, and placed in operation much sooner. Its tasks are data conversion, full-scale testing, system changeover, user training.

19- Write the definition of Prototyping :

- A prototype typically simulates only a few aspects of, and may be completely different from, the final product.
- Prototyping has several benefits: The software designer and implementer can get valuable feedback from the users early in the project.

20-list the types of Prototyping , and definition them :

- Throwaway prototyping: Throwaway prototyping is the type of prototyping which is just used to confirm the requirements and not used till the end and the prototype is discarded once the requirements are known.

- Evolutionary prototyping: Evolutionary prototyping is the type of Prototyping which is used till the end, the prototype is developed and maintained till the end.

21-List the Different Approaches to Improving Development , with definition?
1) CASE Tools
2) Agile Methodologies
   - iterative and incremental development
   - It promotes adaptive planning

22-Write about Computer-Aided Software Engineering (CASE):
- Diagramming tools enable graphical representation.
- Computer displays and report generators help prototype how systems "look and feel".
- Analysis tools automatically check for consistency in diagrams, forms, and reports.
- A central repository provides integrated storage of diagrams, reports, and project management specifications.
- Documentation generators standardize technical and user documentation.
- Code generators enable automatic generation of programs and database code directly from design documents, diagrams, forms, and reports.

23-CASE Tools are classified as Upper CASE Tools and Lower CASE Tools , definition them:

Upper CASE Tools: are those tools which are used in the Upper phases of the software development.

i.e. Planning, Analysis and Design

Lower CASE Tools: are those tools which are used in the lower phases of the software development.

i.e. Implementation and Maintenance.

24-Write about Rapid Application Development (RAD) :

- Methodology to radically decrease design and implementation time.

- Involves: extensive user involvement, prototyping, JAD sessions, integrated CASE tools, and code generators.

25- Draw the Rapid application development life cycle (RAD)?
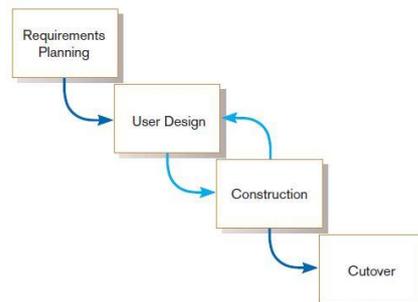
26-Write the definition of Service-Oriented Architecture (SOA) :

An approach to systems development based on building complete systems through assembling software components, each of which model generic business functions.

27- Draw the Service-Oriented Architecture (SOA) :

28-Write the definition of Agile Methodologies :

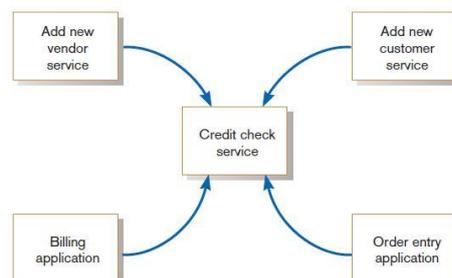- Motivated by recognition of software development as fluid, unpredictable, and dynamic.
- The Agile Methodologies group argues that software development methodologies adapted from engineering generally do not fit with real-world software development.

29-List the key principles of Agile Methodologies ?

- Adaptive rather than predictive
- Emphasize people rather than roles
- Self-adaptive processes

30-When to use Agile Methodologies ?

- If your project involves:
  - Unpredictable or dynamic requirements.
  - Responsible and motivated developers.
  - Customers who understand the process and will get involved.

31-Write about Extreme Programming:

- Short, incremental development cycles.
- Automated tests.
- Two-person programming teams.
- Coding and testing operate together.

32-List the Advantages of Extreme Programming:

1) Communication between developers.

2) High level of productivity.

3) High-quality code.

33- Write about Object-Oriented Analysis and Design (OOAD) :

- ✓ Based on objects rather than data or processes.

- ✓ Object: a structure encapsulating attributes and behaviors of a real-world entity

- ✓ Object class: a logical grouping of objects sharing the same attributes and behaviors.

- ✓ Inheritance: hierarchical arrangement of classes enable subclasses to inherit properties of super classes.

34- Write about Rational Unified Process (RUP) :

- An object-oriented systems development methodology.

- RUP establishes four phase of development: inception, elaboration, construction, and transition.

- Each phase is organized into a number of separate iterations.

FIGURE 1-13

Phases of OOSAD-based development
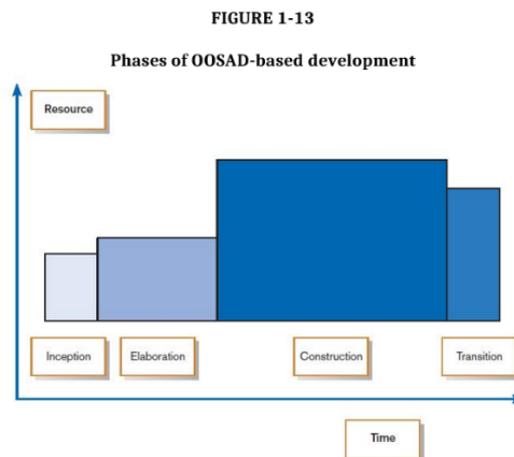
Fill-in Questions:

1) _____ is the complex organizational process whereby computer-based information systems are developed and maintained.

Answer: Information systems analysis and design

2) _____ is computer software designed to support organizational functions or processes.

Answer: Application software

3) _____ is the organizational role most responsible for the analysis and design of information systems.

Answer: Systems analyst

4) A _____ is a standard process followed in an organization to conduct all the steps necessary to analyze, design, implement, and maintain information systems.

Answer: systems development methodology

5) The _____ is the traditional methodology used to develop, maintain, and replace information systems.

Answer: systems development life cycle

6) _____ is the first phase of the SDLC in which an organization's total information system needs are identified, analyzed, prioritized, and arranged.

Answer: Planning

7) _____ is the second phase of the SDLC in which system requirements are studied and structured.

Answer: Analysis

8) _____ is the third phase of the SDLC in which the description of the recommended solution is converted into logical and then physical system specifications.

Answer: Design

9) _____ is the part of the design phase of the SDLC in which all functional features of the system chosen for development in analysis are described independently of any computer platform.

Answer: Logical design

10) _____ is the part of the design phase of the SDLC in which the logical specifications of the system from logical design are transformed into technology-specific details from which all programming and system construction can be accomplished.

Answer: Physical design

11) _____ is the fourth phase of the SDLC in which the information system is coded, tested, installed, and supported in the organization.

Answer: Implementation

12) _____ is the final phase of the SDLC in which an information system is systematically repaired and improved.

Answer: Maintenance

13) The traditional waterfall life cycle locked users into _____ that had been previously determined.

Answer: requirements

14) One criticism of the traditional waterfall SDLC is that the role of _____ was narrowly defined.

Answer: customers

15) _____ are software tools that provide automated support for some portion of the systems development process.

Answer: Computer-aided software engineering tools

16) _____ tools enable system process, data and control structures to be represented graphically.

Answer: Diagramming

17) Computer display and report generators help prototype how systems _____ and _____.

Answer: look, feel

18) A central _____ enables the integrated storage of specifications, diagrams, reports and project management information.

Answer: repository

19) _____ is an approach to develop information systems that promises better and cheaper systems as well as rapid deployment.

Answer: Rapid Application Development

20) RAD depends on extensive _____ involvement.

Answer: user

21) One of the newer current approaches to systems development is called _____

Answer: service oriented architecture (SOA)

22) For an SOA approach to be successful, a large number of _____ would have to be identified and made available for various applications to access.

Answer: services

23) The Agile Methodologies focus on _____ rather than predictive methodologies.

Answer: adaptive

24) The Agile Methodologies focus on people rather than _____.

Answer: roles

25) Agile Methodologies are recommended for a project if it has responsible and motivated Answer: developers

26) eXtreme Programming involves programmers working in _____.

Answer: pairs

27) One of the advantages of eXtreme programming is higher levels of _____.

Answer: productivity

28) _____ refers to systems development methodologies and techniques based on objects rather than data or processes.

Answer: Object-oriented analysis and design

29) An _____ is a structure that encapsulates attributes and methods that operate on those attributes.

Answer: object

30) _____ is the property that occurs when entity types or object classes are arranged in a hierarchy and each entity type or object class assumes the attributes and methods of its ancestors.

Answer: Inheritance

31) An _____ is a logical grouping of objects that have the same (or similar) attributes and behaviors (methods).
Answer: object class

32) The _____ is an object-oriented systems development methodology; it establishes four phases of development.
Answer: Rational Unified Process

33) During the _____ of RUP, analysts define the scope, determine the feasibility of the project, understand user requirements, and prepare a software development plan.
Answer: inception phase

34) During the _____ phase of RUP, the software is actually coded, tested, and documented.
Answer: construction

35) During the _____ phase of RUP, analysts detail user requirements and develop a baseline architecture.
Answer: elaboration

36) The four phases of RUP include _____, _____, _____, and _____.
Answer: inception, elaboration, construction, transition.

37) During this phase, analysts define the scope, determine the feasibility of the project, understand user requirements, and prepare a software development plan.
Answer: inception

38) During this phase, the system is deployed and the users are trained and supported.
Answer: transition

39) During this phase, the software is actually coded, tested, and documented.
Answer: construction

40) During this phase, analysts detail user requirements and develop a baseline architecture.
Answer: elaboration

41) An object-oriented systems development methodology; it establishes four phases of development: inception, elaboration, construction, and transition; each phase is organized into a number of separate iterations.

Answer: Rational Unified Process

42) Systems development methodologies and techniques based on objects rather than data or processes.

Answer: object-oriented analysis and design

43) The property that occurs when entity types or object classes are arranged in a hierarchy and each entity type or object class assumes the attributes and methods of its ancestors.

Answer: inheritance

44) A structure that encapsulates attributes and methods that operate on those attributes.

Answer: object

45) A logical grouping of objects that have the same attributes and behaviors.

Answer: object class

46) The first phase of the SDLC in which an organization's total information system needs are identified, analyzed, prioritized, and arranged.

Answer: planning

47) The second phase of the SDLC in which system requirements are studied and structured.

Answer: analysis

48) The third phase of the SDLC in which the description of the recommended solution is converted into logical and then physical system specifications.

Answer: design

49) The fourth phase of the SDLC, in which the information system is coded, tested, installed, and supported in the organization.

Answer: implementation

50) The final phase of the SDLC in which an information system is systematically repaired and improved.

Answer: maintenance

51) Code, documentation, training procedures, and support capabilities.

Answer: implementation

52) New versions or releases of software with associated updates to documentation, training, and support.

Answer: maintenance

53) Detailed steps, or work plan, for a project; specification of system scope and high-level system requirements or features; assignment of team members and other resources; system justification or business case.

Answer: planning

54) Description of current system and where problems or opportunities are with a general recommendation on how to fix, enhance, or replace the current system; explanation of alternative systems and justification for the chosen alternative.

Answer: analysis

55) Technical, detailed specifications of all system elements; acquisition plan for new technology.

Answer: design

56) Functional, detailed specifications of all system elements.

Answer: design

57) List and define the five major SDLC phases.

Answer: The major SDLC phases include planning, analysis, design, implementation, and maintenance. Planning is the first phase of the SDLC in which an organization's total information system needs are identified, analyzed, prioritized, and arranged. Analysis is the second phase of the SDLC in which system requirements are studied and structured. During the third phase, the design phase, a description of the recommended solution is converted into logical and then physical system specifications. Implementation is the fourth phase of the SDLC in which the information system is coded, tested, installed, and supported in the organization. Maintenance is the fifth and final phase of the SDLC in which an information system is systematically repaired and improved.

58) What are methodologies, techniques, and tools?

Answer: Methodologies are comprehensive, multiple-step approaches to systems development. Techniques are particular processes that you follow to help ensure that your work is complete, well done, and understood by others. Tools are typically computer programs that make it easier to use and benefit from techniques and to follow faithfully the guidelines of the overall development methodology. The techniques and tools should support the chosen methodology. Methodologies, techniques, and tools work together to form an organizational approach to systems analysis and design.

59) Identify the products of the SDLC phases.

Answer: Products for the planning phase include priorities for systems and projects; an architecture for data, networks, and selection hardware, and IS management are the result of associated systems; detailed steps, or work plan, for the project; specification of system scope and high-level system requirements or features; assignment of team members and other resources; and the system justification or business case. The products for the analysis phase include a description of the current system and where problems or opportunities are with a general recommendation on how to fix, enhance, or replace the current system; and an explanation of alternative systems and justification. The design phase provides functional detailed specifications of all system elements and technical, detailed specifications of all systems elements; and an acquisition plan for new technology. Implementation provides code, documentation, training procedures, and support capabilities. Maintenance products include new versions or releases of software with associated updates to documentation, training, and support.

60) What is RAD? Compare and contrast RAD to the traditional SDLC.

Answer: Rapid application development is a systems development methodology created to radically decrease the time needed to design and implement information systems. RAD phases are shortened, more streamlined, and carried out in parallel. The planning and design phases focus on system function and user interface requirements. RAD tends to examine the system in isolation from other systems and limits iteration to the design and development phases.

61) What is meant by Agile Methodologies? Identify the three key principles that the Agile Methodologies share.

Answer: The Agile Methodologies are a response to the problems associated with the traditional SDLC methodology. The three key principles are a focus on adaptive rather than predictive methodologies, a focus on people rather than roles, and a focus on a self-adaptive process.

62) Describe Service-oriented Architecture (SOA)

Answer: SOA is an approach to systems development that builds systems around generic services or specific business functions. Developers can assemble the services, once they have been identified, into new applications. A service is developed by taking existing code and building an interface for it . An example of a service is a credit check.

63) What is object-oriented analysis and design?

Answer: Object-oriented analysis and design refers to systems development methodologies and techniques based on objects rather than data or processes. The goal of OOAD is to make systems elements reusable.

64) Identify and briefly describe the four RUP phases.

Answer: Inception, elaboration, construction, and transition are the four RUP phases. During the inception phase, analysts define the scope, determine the feasibility of the project, understand user requirements, and prepare a software development plan. During the elaboration phase, analysts detail user requirements and develop a baseline architecture. During the construction phase, the software is coded, tested, and documented. During the transition phase, the system is deployed and the users are trained and supported.

65) fill in

Analysis	Application software	Computer-aided software engineering (CASE) tools
Design	Implementation	Information systems analysis and design
Inheritance	Logical design	Maintenance
Object	Object class	Object-oriented analysis and design(OOAD)
Physical design	Planning	Rational Unified Process(RUP)
Systems analyst		Systems development life cycle(SDLC)
Systems development methodology		

Is	The complex organizational process whereby computer-based information systems are developed and maintained.
Application software	Computer software designed to support organizational functions or processes.
System analyst	The organizational role most responsible for the analysis and design of information systems.
System develop methodology	A standard process followed in an organization to conduct all the steps necessary to analyze, design, implement, and maintain information systems.
SDLC	The traditional methodology used to develop, maintain, and replace information systems.
Planning	The first phase of the SDLC, in which an organization's total information system needs are identified, analyzed, prioritized, and arranged.
Analysis	The second phase of the SDLC, in which system requirements are studied and structured.
Design	The third phase of the SDLC, in which the description of the recommended solution is converted into logical and then physical system specifications.
Logical Design	The part of the design phase of the SDLC in which all functional features of the system chosen for development are described independently of any computer platform.
Physical Design	The part of the design phase of the SDLC in which the logical specifications of the system from logical design are transformed into technology-specific details from which all programming and system construction can be accomplished.

Implementation	The fourth phase of the SDLC, in which the information system is coded, tested, installed, and supported in the organization.
Maintenance	The final phase of the SDLC, in which an information system is systematically repaired and improved.
Computer-aided software (case)	Software tools that provide automated support for some portion of the systems development process.
OOAD	Systems development methodologies and techniques based on objects rather than data or processes.
Object	A structure that encapsulates (or packages) attributes and the methods that operate on those attributes. It is an abstraction of a real-world thing in which data and processes are placed together to model the structure and behavior of the real-world object.
Inheritance	The property that occurs when entity types or object classes are arranged in a hierarchy and each entity type or object class assumes the attributes and methods of its ancestors—that is, those higher up in the hierarchy. The property allows new but related classes to be derived from existing classes.
Object Class	A logical grouping of objects that have the same (or similar) attributes and behaviors (methods).
RUP	An object-oriented systems development methodology. This methodology establishes four phases of development, each of which is organized into a number of separate iterations: inception, elaboration, construction, and transition.

True/False Questions:

Question	Ans
1) The analysis and design of information systems is driven from a technical perspective	F
2) Information systems analysis and design is an organizational improvement process	T
3) An important result of systems analysis and design is application software	T
4) A methodology adopted by an organization will be consistent with its general management style	T
5) Techniques are comprehensive, multiple-step approaches to systems development that guide an analyst's work and influence the quality of the final product	F
6) A knowledge engineer is the organizational role most responsible for the analysis and design of information systems	F
7) The systems development environment in the late 1990s focused on systems integration	T
8) In many cases, organizations do not run applications in-house, choosing instead to use an application on a per-use basis by accessing through an application service provider	T
9) A systems development methodology is a standard process followed in an organization to conduct all the steps necessary to analyze, design, implement, and maintain information systems	T
10) The systems development life cycle is the traditional methodology used to develop, maintain, and replace information systems	T
11) The systems development life cycle is a sequentially ordered set of phase	F
12) In the systems development life cycle, it is possible to complete some activities in one phase in parallel with some activities of another phase	T
13) Sometimes the systems development life cycle is iterative	T
14) The first phase in the systems development life cycle (SDLC) is planning	T
15) During the analysis phase, someone identifies the need for a new or enhanced system	F
16) During the design phase, analysts convert the description of the recommended alternative solution into logical and physical	T

system specifications	
17) The second subphase in systems analysis is to investigate the system and determine the proposed system's scope	F
18) Design is the second phase of the SDLC in which the current system is studied and alternative replacement systems are proposed	F
19) Often the choices of language, database, and platform are already decided by the organization or by the client, and these information technologies must be taken into account in the physical design of the system	F
20) Logical design is tied to a specific hardware and software platform	F
21) During physical design, the logical specifications of the system from the logical design are transformed into technology-specific details from which all programming and system construction can be accomplished	T
22) Implementation is the fourth phase of the SDLC in which the information system is coded, tested, installed, and supported in the organization	T
23) During installation, the new system becomes part of the daily activities of the organization	T
24) Documentation and training programs are finalized during the physical design phase	F
25) The maintenance phase often resembles the life cycle itself	T
26) The amount of time and effort devoted to maintenance depends a great deal on the performance of the previous phases of the life cycle	T
27) A description of the current system identifying where problems or opportunities are with a general recommendation on how to fix, enhance, or replace the current system is a product of the design phase	F
28) Maintenance is the final phase of the SDLC in which an information system is systematically repaired and improved	T
29) The traditional waterfall SDLC narrowly defines the end user or customer's role	T
30) One of the criticisms of the traditional SDLC is that it focuses on milestone deadlines, leading to too little focus on doing good analysis and design	T
31) A criticism of the traditional SDLC is that the role of system users or customers is too broadly defined	F

32) Involving the end user in analysis and design is a key advantage to the prototyping technique	T
33) CASE refers to software tools that provide automated support for some portion of the systems development process	T
34) CASE tools are built around a central repository for system descriptions and specifications	T
35) CASE Analysis tools help to prototype how systems will look and feel	F
36) CASE helps programmers and analysts do their jobs more efficiently and effectively	T
37) RAD is becoming less and less a legitimate way to develop information systems	F
38) Joint Application Development is a systems development methodology created to radically decrease the time needed to design and implement information systems	F
39) RAD follows the traditional SDLC phases, but the phases are shortened and combined with each other to produce a more streamlined development technique	T
40) Planning for cutover must begin early because the RAD approach is so fast	T
41) One of the primary disadvantages of RAD is longer development time	F
42) Service-oriented architecture is an approach which builds complete systems by assembling components that model generic business functions	T
43) Developing a service is always done by writing new code	F
44) An example of a service is a credit check	T
45) In order for Service-Oriented Architecture to be successful, there needs to be centralized support and governance	T
46) The SOA approach results in a low return on investment due to not being able to reuse services	F
47) The three key principles of Agile Methodologies include a focus on adaptive rather than predictive methodologies, a focus on people rather than roles, and a focus on self-adaptive processes	T
48) Proponents of the Agile Methodology state that techniques that work well for stable projects, such as building a bridge, work well for software projects	F
49) Iterative development focuses on the frequent production of working versions of a system that have a subset of the total number of required features	T

50) The Agile Methodologies promote a self-reflective software development process	F
51) Agile Methodologies work well for projects with unpredictable or dynamic requirements	T
52) eXtreme Programming is not one of the Agile Methodologies	F
53) eXtreme Programming is distinguished by its short cycles, incremental planning approach, focus on automated tests and a reliance on an evolutionary approach to development	T
54) eXtreme Programming always involves developers working by themselves	F
55) Object-oriented analysis and design (OOAD) is becoming less popular	F
56) The object-oriented approach combines data and processes into single entities called objects	T
57) In OOAD, objects are organized into object courses	F
58) The goal of OOAD is to make system elements more reusable	T
59) The Rational Unified Process (RUP) is an object-oriented methodology that establishes four phases of development	T
60) Destruction is the third phase of RUP	F
61) During the inception phase of RUP, the scope and feasibility of the project is determined	T
62) The transition phase of RUP involves only coding of the project	F
63) Tools are typically computer programs that make it easy to use and benefit from techniques and to faithfully follow the guidelines of the overall development methodology	T

1) The complex organizational process through which computer-based information systems are developed and maintained best defines:
A) information systems analysis and design
B) joint application design
C) prototyping
D) none of the above

2) Software designed to support the payroll function would best be classified as:
A) application software
B) system software
C) design software
D) analysis software

3) Computer software designed to support organizational functions or processes best defines:
A) system software
B) application software
C) design software
D) analysis software

4) Comprehensive, multiple-step approaches to systems development that will guide your work and influence the quality of your final product defines:
A) techniques
B) tools
C) methodologies
D) data flows

5) The particular processes that an analyst will follow to help ensure that his work is complete, well-done, and understood by project team members best defines:
A) techniques
B) tools
C) methodologies
D) data flows

6) The person in an organization who has the primary responsibility for systems analysis and design is the:
A) systems analyst
B) end user
C) internal auditor
D) business manager

7) Large, complex systems that consist of a series of independent system modules best describes:
A) transaction processing systems
B) customer relationship management systems
C) supply chain management systems
D) enterprisewide systems

8) Which of the following are true statements regarding today's analysis and design of information systems?
A) More and more systems implementation involves a three-tier design.
B) There is a movement to wireless system components.
C) There is a continued focus on developing systems for the Internet and for firms' intranets and extranets.
D) All of the above.

9) The traditional methodology used to develop, maintain, and replace information systems best defines:
A) SDLC
B) RAD
C) OOAD
D) prototyping

10) Which of the following is a true statement regarding the SDLC phases?
A) The life cycle is a sequentially ordered set of phases.
B) It is not possible to complete some activities in one phase in parallel with those of another phase.
C) The SDLC is not iterative.
D) The life cycle can be thought of as a circular process in which the end of the useful life of one system leads to the beginning of another project to develop a new version of or replace an existing system.

11) During the SDLC planning phase, which of the following activities is undertaken?
A) New system requirements are identified.
B) A formal, preliminary investigation is undertaken.
C) A presentation of why the system should or should not be developed by the organization is given.
D) Both B and C.

12) The second phase of the SDLC in which system requirements are studied and structured best defines:
A) planning
B) analysis
C) design
D) implementation

13) The output for the analysis phase is the:
A) description of the alternative solution
B) physical system specifications
C) work plan for the project
D) priorities for systems and projects proposal

14) Analysts convert the description of the recommended alternative solution into logical and then physical system specifications during:
A) planning
B) implementation
C) analysis
D) design

15) The part of the design phase of the SDLC in which the logical specifications of the system from logical design are transformed into technology-specific details from which all programming and system construction can be accomplished best describes:
A) implementation
B) object modeling
C) physical design
D) logical design

16) Which of the following is a true statement regarding logical design?
A) Logical design is tied to a specific hardware and software platform.
B) Logical design does not concentrate on the business aspects of the system.
C) Technical specifications are developed.
D) All functional features of the system chosen for development in analysis are described independently of any computer platform.

17) Turning system specifications into a working system that is tested and then put into use describes:
A) implementation
B) physical design
C) maintenance
D) analysis

18) The phase of the SDLC in which an information system is systematically repaired and improved is referred to as:
A) analysis
B) implementation
C) maintenance
D) physical repair

19) Which of the following are deliverables for the planning phase?
A) functional, detailed specifications of all system elements
B) priorities for systems and projects; an architecture for data, networks, and selection hardware, and IS management are the result of associated systems
C) description of current system and where problems and opportunities are with a general recommendation on how to fix, enhance, or replace current system
D) code, documentation, training procedures, and support capabilities

20) Which of the following are deliverables for the analysis phase?
A) functional, detailed specifications of all system elements
B) priorities for systems and projects; an architecture for data, networks, and selection hardware, and IS management are the result of associated systems
C) description of current system and where problems and opportunities are with a general recommendation on how to fix, enhance, or replace current system
D) code, documentation, training procedures, and support capabilities

21) Which of the following are deliverables for the implementation phase?
A) functional, detailed specifications of all system elements
B) priorities for systems and projects; an architecture for data, networks, and selection hardware, and IS management are the result of associated systems
C) description of current system and where problems and opportunities are with a general recommendation on how to fix, enhance, or replace current system
D) code, documentation, training procedures, and support capabilities

22) All of the following are true about the SDLC EXCEPT:
A) the different phases are clearly defined
B) it is a rapid method to prototype and develop an application
C) the relationships between phases are well specified
D) the sequencing of phases has a compelling logic

23) One criticism of the traditional waterfall SDLC approach is that:
A) It is too short of a process
B) The process is too chaotic
C) Users are locked into requirements
D) There are no criticisms

24) All of the following are criticisms of the traditional waterfall SDLC EXCEPT:
A) users are locked into requirements
B) prototypes do not work properly
C) the role of customers is narrowly defined
D) intangible processes are given hard and fast dates

25) An integrated and standard database used in CASE to provide product and tool integration is called a:
A) Transaction Processing System
B) Data Mart
C) Repository
D) Armory

26) All of the following are types of CASE tools EXCEPT:
A) Diagramming Tools
B) Display and Report Generators
C) Debuggers
D) Analysis Tools

27) Which type of CASE tool is used for the analysis phase of the SDLC?
A) Documentation generators
B) Form generators
C) Report generators
D) Diagramming

28) Which of the following is a true statement about RAD?
A) The focus of RAD is on system integration.
B) The bulk of the work in RAD takes place in the requirements planning phase.
C) RAD requires moderate user involvement.
D) The emphasis in RAD is generally less on the sequence and structure of processes in the life cycle and more on doing different tasks in parallel with each other and on using prototyping extensively.

29) Which of the following grew out of the convergence of the increased speed and turbulence of doing business in the late 1980s and early 1990s and the ready availability of high-powered, computer-based tools to support systems development and easy maintenance?
A) JAD
B) RAD
C) Object-oriented programming
D) CASE

30) Which of the following is a systems development methodology created to radically decrease the time needed to design and implement information systems?
A) eXtreme Programming
B) OOAD
C) RAD
D) JAD

31) The three key principles shared by the Agile Methodologies include:
A) a focus on predictive methodologies
B) a focus on roles
C) a focus on self-adaptive processes
D) all of the above

32) The idea behind service-oriented architecture (SOA) is:
A) to develop a rapid prototype
B) to utilize object-oriented techniques to develop a system
C) to build a system around generic services or specific business functions
D) to program in pairs

33) All of the following are success factors for an SOA approach EXCEPT:
A) identification of a large amount of services which are made available for various applications to access
B) programmers would have to work in teams of three
C) establishment of standards
D) establishment of a centralized service repository

34) Which of the following is NOT a question which managers of an organization should ask before considering a move to the SOA approach:
A) What common business services are needed?
B) Who owns the data?
C) Who is responsible for initiating and approving changes?
D) None of the above

35) Principles identified in the Agile Manifesto include:
A) our highest priority is to satisfy the customer through early and continuous delivery of valuable software
B) welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage
C) deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale
D) all of the above

36) Fowler recommends using an agile process when your project involves:
A) unpredictable or dynamic requirements
B) responsible and motivated developers
C) customers who understand the process and will get involved
D) all of the above

37) Critical factors that distinguish Agile and traditional approaches to the systems development life cycle include:
A) Size
B) Dynamism
C) Personnel
D) All of the above

38) Which of the following is a true statement about eXtreme Programming?
A) eXtreme Programming's overall philosophy is that code will be integrated into the system it is being developed for and tested within a few hours after it has been written.
B) eXtreme Programming minimizes customer involvement during each of its phases.
C) eXtreme Programming distinguishes and separates the planning, analysis, design, and construction phases.
D) eXtreme Programming uses an approach similar to the traditional SDLC for capturing and presenting system requirements and design specifications.

39) All of the following are advantages of eXtreme Programming EXCEPT:
A) more communication among the developers
B) higher levels of productivity
C) reinforcement of the code-and-test discipline
D) lower quality code

40) Systems development methodologies and techniques based on objects rather than data or processes best defines:
A) objects
B) participatory design
C) object-oriented analysis and design
D) entity analysis and design

41) Which of the following is a structure that encapsulates attributes and methods that operate on those attributes?
A) module
B) object
C) container
D) case

42) A logical grouping of objects that have the same attributes and behaviors best defines:
A) attribute
B) module
C) object class
D) object

43) The property that occurs when entity types or object classes are arranged in a hierarchy and each entity type or object class assumes the attributes and methods of its ancestors best defines:
A) inheritance
B) polymorphism
C) aggregation
D) generalization

44) Which of the following is based on an iterative, incremental approach to systems development and has inception, elaboration, construction, and transition phases?
A) JAD
B) RAD
C) RUP
D) eXtreme Programming

45) During which of the following RUP phases will analysts define the scope, determine the feasibility of the project, understand user requirements, and prepare a software development plan?
A) transition
B) construction
C) elaboration
D) inception

46) Which of the following RUP phases provides an architecture for the project at the end of its phase?
A) elaboration
B) transition
C) inception
D) construction

47) Which of the following RUP phases involves correcting problems, beta testing, user training, and conversion of the project?
A) elaboration
B) transition
C) inception
D) construction

48) Which of the following programming languages could be used for OOAD?
A) Java
B) C++
C) FORTRAN
D) Both A and B

Ch 6 : Determining System Requirements

Writing Questions:

1- Briefly identify several characteristics for a good systems analyst to have during requirements determination?

        ☐ Impertinence—question everything

        ☐ Impartiality—consider all issues to find the best organizational solution

        ☐ Relaxing constraints—assume anything is possible

        ☐ Attention to details—every fact must fit

        ☐ Reframing—challenge yourself to new ways

2- Briefly identify the traditional methods for determining requirements?

    The traditional methods for collecting system requirements are individual interviews, group interviews, observations, Nominal Group Technique, and document analysis.

3- Write about Interviewing and Listening ?

    One of the primary way's analysts gather information about an information systems project

4- Write the definition of Interview Guide ?

    is a document for developing, planning and conducting an interview.

5- List Guidelines for Effective Interviewing :

- Plan the interview.
  - Prepare interviewee: appointment, priming questions.
  - Prepare agenda, checklist, questions.

- Listen carefully and take notes (tape record if permitted).
- Review notes within 48 hours.
- Be neutral.
- Seek diverse views.

6- Write the definition of Open-ended questions and Closed-ended questions?

    Open-ended questions: questions that have no prespecified answers.

    Closed-ended questions: questions that ask those responding to choose from among a set of specified responses.

7- Write about Interviewing Groups?

- Contradictions and inconsistencies between interviewees.

- Follow-up discussions are time consuming.

- New interviews may reveal new questions that require additional interviews with those interviewed earlier.

- Interviewing several key people together

8- Write the Advantage and disadvantage of Interviewing Groups?

- Advantages
  - More effective use of time.
  - Can hear agreements and disagreements at once.
  - Opportunity for synergies.

- Disadvantages
  - More difficult to schedule than individual interviews.

9- Write the definition of Nominal Group Technique (NGT) ?

A facilitated process that supports idea generation by groups

10- Write what you know about Nominal Group Technique (NGT) ?

- Members come together as a group, but initially work separately.

- Each person writes ideas.

- Facilitator reads ideas out loud, and they are written on a blackboard or flipchart.

- Group openly discusses the ideas for clarification.

- Ideas are prioritized, combined, selected, reduced.

- NGT exercise used to complement group meetings or as part of JAD effort.

11- Write what you know about Direct Observation?

- Watching users do their jobs

- Obtaining more firsthand and objective measures of employee interaction with information systems

- Can cause people to change their normal operating behavior

- Time-consuming and limited time to observe

12- Write what you know about Document Analysis?

- ■ Review of existing business documents
- ■ Can give a historical and "formal" view of system requirements

13- List the Types of information to be discovered?

- ■ Problems with existing system

- ■ Opportunity to meet new need

- ■ Organizational direction

- ■ Names of key individuals

- ■ Values of organization

- ■ Special information processing circumstances

- ■ Reasons for current system design

- ■ Rules for processing data

14- Write about Useful document Written work procedure?
- ■ For an individual or work group
- ■ Describes how a particular job or task is performed
- ■ Includes data and information used and created in the process

15- Write about Potential Problems with Procedure Documents?

- ■ May involve duplication of effort.

- ■ May have missing procedures.

- ■ May be out of date.

- ■ May contradict information obtained through interviews.

16- Write the difference between Formal Systems and Informal Systems?

Formal Systems: the official way a system works as described in organizational documentation (i.e. work procedure)

Informal Systems: the way a system actually works (i.e. interviews, observations)

17- Write about Useful document Business form?

- Used for all types of business functions

- Explicitly indicate what data flow in and out of a system and data necessary for the system to function

- Gives crucial information about the nature of the organization

18- Write about Useful document Report?

- Primary output of current system

- Enables you to work backwards from the report to the data needed to generate it

19- Write about Joint Application Design (JAD)?
- Brings together key users, managers, and systems analysts
- Purpose: collect system requirements simultaneously from key people
- Conducted off-site
- Intensive group-oriented requirements determination technique
- Team members meet in isolation for an extended period of time
- Highly focused
- Resource intensive
- Started by IBM in 1970s

20- Write the definition of Group Support Systems?

Facilitate sharing of ideas and voicing of opinions about system requirements

21- Write about CASE Tools?

- Used to analyze existing systems

- Help discover requirements to meet changing business conditions

22- Write about System prototypes**?**

- Iterative development process

- Rudimentary working version of system is built

- Refine understanding of system requirements in concrete terms