Module (Course Syllabus)
Cataloguet

(2024-2025)

College/ Institute	**Erbil Technical Engineering College**	
Department	**Information Systems Engineering Department**	
Module Name	***Information Systems Design (ISD)***	
Module Code	**ISE602**	
Degree	**Technical Diploma** ☐ **Bachler** ■ **High Diploma** ☐ **Master** ☐ **PhD** ☐	
Semester	**Sixth sems.(6) -Third Stage**	
Qualification	**MSc. in Computer Science\ Artificial Intelligence A.I. \ Al-Nahrain University\ Iraq-Baghdad 1997**	
Scientific Title	**Assist. Lect.**	
ECTS (Credits)	**6**	
Module type	**Prerequisite** ☐ **Core** ■ **Assist.** ☐	
Weekly hours	**4**	
Weekly hours (Theory)	**(2)hr Class** we have 2 theory groups ➔ 2*2=**4**	**(4)Total hrs Workload -Theoretical**
Weekly hours (Practical)	**(2)hr Class** we have 3 practical groups ➔ 3*2=**6**	**(6)Total hrs Workload -Practical**
Number of Weeks	**12**	
Lecturer (Theory)	**Mrs. Najat Yohana Danha**	
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Course Book

Course Description	**In today's information- and technology-driven business world, students need to be aware of three key factors.** **First, it is more crucial than ever to know how to organize and access information strategically.** **Second, success often depends on the ability to work as part of a team.** **Third, the Internet will play an important part in their work lives specially as analyst .** **This course , addresses these key factors. Also ,provide a clear presentation of the concepts, skills, and techniques students need to become effective systems analysts who work with others to develop information systems.** **In this course we use the systems development life cycle model as an organizing tool to provide a strong conceptual and systematic framework. Internet coverage is provided in each part via an integrated, extended illustrative case (Pine Valley Furniture WebStore) and case (Petrie's Electronics).** **The successful systems analyst requires a broad understanding of organizations, organizational culture, and operations. Systems development is a practical field. Coverage of current practices as well as accepted concepts and principles is essential for today's systems analyst. Systems development is a profession, all these are covered in this course, Also , presents standards of practice, and fosters a sense of continuing personal development, ethics, and a respect for and collaboration with the work of others.** **Learning systems analysis and design requires a thorough understanding of the process as well as the techniques and deliverables of the profession. the course emphasizes these approaches: A business rather than a technology perspective The role, responsibilities, and mind-set of the systems analyst as well as the systems project manager, rather than those of the programmer or business manager The methods and principles of systems development rather than the specific tools or tool-related skills of the field2.** **Here are some of the distinctive features of ISD course :**

1. The grounding of systems development in the typical architecture for systems in modern organizations, including database management and Web-based systems.
2. A clear linkage of all dimensions of systems description and modeling— process, decision, and data modeling—into a comprehensive and compatible set of systems analysis and design approaches. Such broad coverage is necessary for students to understand the advanced capabilities of many systems development methodologies and tools that automatically generate a large percentage of code from design specifications.
3. Extensive coverage of oral and written communication skills (including systems documentation), project management, team management, and a variety of systems development and acquisition strategies
(e.g., life cycle,
prototyping,
rapid application development,
object orientation,
joint application development, participatory design, and business process reengineering).
4. Coverage of rules and principles of systems design, including decoupling, cohesion, modularity, and audits and controls.
5. A discussion of systems development and implementation within the context of management of change, conversion strategies, and organizational factors in systems acceptance.
6. Careful attention to human factors in systems design that emphasize usability in both character-based and graphical user interface situations.

SDLC Framework Although several conceptual processes can be used for guiding a systems development effort, the systems development life cycle (SDLC) is arguably the most widely applied method for designing contemporary information systems.

The key to success in business is the ability to
gather,
organize, and interpret information. Systems analysis and design is a proven methodology that helps both large and small businesses reap the rewards of utilizing information to its full capacity. As a systems analyst, the person in the organization most involved with systems analysis and design,

The systems development life cycle (SDLC) is central to the development of an efficient information system. four key SDLC steps: (1) planning and selection, (2) analysis(3) design, and (4) implementation and operation.

This course will focused on Information systems analysis and design which is a method used by companies ranging from IBM to PepsiCo to Sony to create and maintain information systems that perform basic business functions such as keeping track of customer names and addresses, processing orders, and paying employees.
The main goal of systems analysis and design is to improve organizational systems, typically through applying software that can help employees accomplish key business tasks more easily and efficiently. As a systems analyst, you will be at the center of developing this software. The analysis and design of information systems

	are based on: Your understanding of the organization's objectives, structure, and processes Your knowledge of how to exploit information technology for advantage To be successful in this endeavor, you should follow a structured approach. The SDLC, is a four-phased approach to identifying, analyzing, designing, and implementing an information system. **Throughout this course , we use the SDLC to organize our discussion of the systems development process. Before we talk about the SDLC, we first describe what is meant by systems analysis and design. Systems Analysis and Design: Core Concepts The major goal of systems analysis and design is to improve organizational systems. Often this process involves developing or acquiring application software and training employees to use it. Application software, also called a system, is designed to support a specific organizational function or process, such as inventory management, payroll, or market analysis. The goal of application software is to turn data into information.**
Course objectives	**Course objective:** • **This course aims to enhance the set of techniques and tools that the analyst/designer requires for success.** • **It also addresses some of the "softer" but critical other skills such as creativity and the ability to understand the market needs of the business.** • **Furthermore, the successful analyst/designer must be able to** ○ **understand consumer needs;** ○ **ensure integration with legacy systems;** ○ **provide user interface requirements;** ○ **establish standards,** ○ **security, and network architecture; and** ○ **finally to provide the necessary project management to ensure Implementation.**
Student's obligation	**Student's obligation In this course is:**

	• **Study all lectures - PDF Files .** • **A recorded videos for some of the lectures by my voice. .** • **Attendance in the class for most lect.s .** • **Many VERBAL Quizzes.** • **Many UNVERBAL quizzes.** • **Many H.W.** • **MidTerm And final Theoretical Exams.** • **Present Report and/or seminar .**
Required Learning Materials	**I have tried to take advantage of the resources provided by Erbil Technical University to serve students in the best way, through: -** • **Publish all lectures PDF Files , Degrees, References … etc on Moodle** • **Many lectures in clas For :-** ○ **Discusses the Lectures** ○ **Ask | Answer Questions** ○ **Makes pop quizzes .** • **Discussion including** ○ **Homeworks H.W.(2) ,** ○ **Quizes (2+ optional one)** ○ **Reports (1)** ○ **Presentation seminar (1).**

Evaluation	**Task**		**Weight (Marks)**			**Relevant Learning Outcome**
	Paper Review		**-**			
	Assignments	**Homework**	**5%**			
		Class Activity(Theo.+Pract.)	**2% theoretical + 10% practical**			
		Report	**10%**	**10%**		
		Seminar	**10%**			
		Project	**-**			
	Quiz		**8%**			

	Lab .	**15%**		
	Midterm Exam	**10%**		
	Final Exam	**40%**		
	Total	**100%**		

Specific learning outcome:

The course will give the fundamental knowledge and practical abilities in the following:

- **Thinking as a system analyst:-**
  - **Managing A Project.**
  - **Systems Planning and selection,**
  - **Systems Analysis,**
  - **Systems Design ,**
  - **How to development systems .**
- **Learning Oracle and work with Database design it starting from zerooo .**

Course References:

1. **Joseph S. Valacich University of Arizona Joey F. George Iowa State University Jeffrey A. Hoffer University of Dayton, Essentials of Systems Analysis and Design ,FIFTH EDITION**
2. **James A. O'Brien,George M. Marakas ,INTRODUCTION TO INFORMATION SYSTEMS, *Fifteenth Edition.***
3. **Pual Bocij, Andrew Greasley, and Simon Hickie, Business Information Systems , 14th Edition,**
4. **Ralph M. Stair,George W. Reynolds, Fundamentals of Information Systems, Eighth Edition.**
5. **PATRICIA WALLACE, Introduction Information Systems,Second Edition.**
6. **O'Brien/Marakas, Introduction to Information Systems ,14th Edition, McGRAW- Hill.**
7. **Wigand/Mertens/Bodendorf/K?nig/Picot/Schumann: Introduction to Business Information Systems ,Springer, 2003.**
8. **www.cs.toronto.edu, Modern Systems Analysis and Design ,Fifth Edition By Jeffrey A. Hoffer Joey F. George Joseph S. Valacich © 2008 by Prentice Hall**
9. **www.uotiq.org/dep-cs, Analysis and Design of Information Systems Third Edition by Arthur M. Langer**
10. **https://axiaecampus.phoenix.edu, SYSTEMS ANALYSIS AND DESIGN Eighth dition by Gary B. Shelly Harry J. Rosenblatt**

Course topics (Theory)	Week	Learning Outcome
• Introduction • A Modern Approach to Systems Analysis and Design • Types of Information Systems and Systems Development • Developing Information Systems • Systems Development Life Cycle (SDLC) • The Heart of the Systems Development Process • Traditional Waterfall SDLC • Different Approaches to Improving Development • Prototyping • Computer-Aided Software Engineering (CASE) Tools • Rapid Application Development (RAD) • Agile Methodologies • Object-Oriented Analysis and Design (OOAD)	1	The Systems Development Environment:- Define information systems analysis and design. Describe the different types of information systems. Describe the information Systems Development Life Cycle (SDLC). Explain Rapid Application Development (RAD), prototyping, Joint Application Development (JAD), and Computer Aided Software Engineering (CASE). Describe agile methodologies and eXtreme programming. Explain Object Oriented Analysis and Design and the Rational Unified Process (RUP).
• Systems Acquisition: Outsourcing • Sources of Software • Application Service Provider (ASP) • Managed Service Provider (MSP) • Open Source Software • In-House Development • Off-the-Shelf Software • Validating Purchased Software Information • Request For Proposal (RFP) • Information Sources For RFP • Reuse		The Origins of Software:- Explain outsourcing. Describe six different sources of software. Discuss how to evaluate off-the-shelf software. Explain reuse and its role in software development.

• Pine Valley Furniture (PVF) • Managing the Information Systems Project • Project Management Activities • Initiating a Project • Planning the Project • Executing the Project • Closing Down the Project • Representing and Scheduling Project Plans • Calculating Expected Time Durations using PERT • Constructing a Gantt Chart and Network Diagram for PVF • Determining the Critical Path for Pine Valley Furniture • Using Project Management Software	3	**Managing the Information Systems Project :-** **Explain the process of managing an information systems project.** **Describe the skills required to be an effective project manager.** **List and describe the skills and activities of a project manager during project initiation, project execution, and project closedown.** **Explain what is meant by critical path scheduling and describe the process of creating Gantt charts and Network diagrams.** **Explain how commercial project management software packages can be used to assist in representing and managing project schedules.**
• Identifying and Selecting Systems Development Projects • The Process of Identifying and Selecting IS Development Projects (Cont.) • Deliverables and Outcomes • Corporate and Information Systems Planning • Corporate Strategic Planning • Information Systems Planning (ISP) • Business Functions, Data Entities, and Information Systems of PVF • IS Plan Components		**Identifying and Selecting Systems Development Projects:-** **Describe the project identification and selection process.** **Describe corporate strategic planning and information systems planning process.** **Explain the relationship between corporate strategic planning and information systems planning.** **Describe how information systems planning can be used to assist in identifying and selecting systems development projects.** **Analyze information systems planning matrices to determine affinity between information systems and IS projects and to forecast the impact of IS projects on business objectives.** **Describe the three classes of Internet electronic commerce applications: Internet, intranets, and extranets.**

• **Electronic Commerce Applications and Internet Basics**		
• **Initiating and Planning Systems Development Projects** • **The Process of Initiating and Planning IS Development Projects** • **Elements of Project Planning** • **Deliverables and Outcomes** • **Assessing Project Feasibility** • **Determining Project Benefits** • **The Time Value of Money** • **Assessing Technical Feasibility** • **Project Risk Factors** • **Building the Baseline Project Plan** • **Factors in Determining Scope** • **Diagram Depiction of Project Scope** • **Building the Baseline Project Plan** • **Reviewing the Baseline Project Plan**	**4**	**Initiating and Planning Systems Development Projects:-** **Describe the steps involved in the project initiation and planning process.** **Explain the need for and the contents of a Project Scope Statement and Baseline Project Plan.** **List and describe various methods for assessing project feasibility.** **Describe the differences between tangible and intangible benefits and costs and between one-time vs. recurring benefits and costs.** **Perform cost-benefit analysis and describe what is meant by the time value of money, present value, discount rate, net present value, return on investment, and break-even analysis.** **Describe the general rules for evaluating technical risks associated with a systems development project.** **Describe the activities and participant roles within a structured walkthrough.**
• **Performing Requirements Determination** • **Deliverables and Outcomes** • **Traditional Methods for Determining Requirements** • **Interviewing and Listening** • **Guidelines for Effective Interviewing**		**Determining System Requirements:-** **Describe options for designing and conducting interviews and develop a plan for conducting an interview to determine system requirements.** **Explain the advantages and pitfalls of observing workers and analyzing business documents to determine system requirements.** **Explain how computing can provide support for requirements determination.**

• **Interviewing Groups** • **Nominal Group Technique (NGT)** • **Directly Observing Users** • **Analyzing Procedures and Other Documents** • **Contemporary Methods for Determining System Requirements** • **Joint Application Design (JAD)** • **Using Prototyping During Requirements Determination** • **Radical Methods for Determining System Requirements** • **Identifying Processes to Reengineer** • **Disruptive Technologies** • **Requirements Determination using Agile Methodologies** • **Continual User Involvement** • **Agile Usage-Centered Design Steps** • **The Planning Game from eXtreme Programming** • **Electronic Commerce Applications: Determining System Requirements**		**Participate in and help plan a Joint Application Design session.** **Use prototyping during requirements determination.** **Understand how requirements determination techniques apply to the development of electronic commerce applications.**
• **Process Modeling** • **Deliverables and Outcomes** • **Data Flow Diagramming Mechanics** • **Definitions and Symbols** • **Developing DFDs** • **Context Diagram** • **Level-0 Diagram** • **Data Flow Diagramming Rules** • **Decomposition of DFDs**		**Structuring System Process Requirements:-** **Understand the logical modeling of processes by studying examples of data flow diagrams (DFDs).** **Draw data flow diagrams following specific rules and guidelines that lead to accurate and well-structured process models.** **Decompose data flow diagrams into lower-level diagrams.** **Balance higher-level and lower-level data flow diagrams.** **Explain the differences among four types of DFDs: current physical, current logical, new physical, and new logical.** **Use data flow diagrams as a tool to support the analysis of information systems.**

• Level-1 DFD • Level-n DFD • Balancing DFDs • Four Different Types of DFDs • Guidelines for Drawing DFDs • Using DFDs as Analysis Tools • Using DFDs in BPR • Electronic Commerce Application: Process Modeling using Data Flow Diagrams •		**Discuss process modeling for electronic commerce applications.**
• Logic Modeling • Modeling a System's Logic • Deliverables and Outcomes • Modeling Logic with Structured English • Modeling Logic with Decision Tables • Deciding Among Structured English and Decision Tables • Electronic Commerce Application: Logic Modeling	5	**Logic Requirements:-** **Use Structured English as a tool for representing steps in logical processes in data flow diagrams.** **Use decision tables to represent the logic of choice in conditional statements.** **Select among Structured English and decision tables for representing processing logic.** **Understand how logic modeling techniques apply to the development of electronic commerce applications.**
• Dynamic Modeling: Sequence Diagrams • Designing a Use Case with a Sequence Diagram • A Sequence Diagram for Hoosier Burger Process Modeling: Activity Diagrams		**Object-Oriented Analysis and Design: Sequence Diagrams and Activity Diagrams :-** **Understand how to represent system logic with sequence diagrams.** **Understand how to represent system logic with activity diagrams.**
• Conceptual Data Modeling • The Conceptual Data Modeling Process • Deliverables and Outcome		**Structuring System Data Requirements:-** **Concisely define each of the following key data modeling terms: entity type, attribute, multivalued attribute, relationship, degree, cardinality, business rule, associative entity, trigger, supertype, subtype.**

• Gathering Information for Conceptual Data Modeling • Introduction to Entity-Relationship (E-R) Modeling • Naming and Defining Entity Types • Attributes • Candidate Keys and Identifiers. • Relationships • Conceptual Data Modeling and the E-R Model • Cardinalities in Relationships • Associative Entities • Representing Supertypes and Subtypes • Business Rules • Domains • Triggering Operations • Role of Packaged Conceptual Data Models – Database Patterns • Benefits of Database Patterns and Packaged Data Models • Electronic Commerce Application: Conceptual Data Modeling		**Draw an entity-relationship (E-R) diagram to represent common business situations.** **Explain the role of conceptual data modeling in the overall analysis and design of an information system.** **Distinguish between unary, binary, and ternary relationships and give an example of each.** **Define four basic types of business rules in a conceptual data model.** **Relate data modeling to process and logic modeling as different views of describing an information system.**
• Introduction • Database Design • The Process of Database Design • Physical Database Design • Relational Database Model • Well-Structured Relation and Primary Keys • Normalization and Rules of Normalization • Functional Dependencies and Primary Keys	**6**	**Designing Databases:-** **Concisely define each of the following key database design terms:** **relation, primary key, normalization, functional dependency, foreign key, referential integrity, field, data type, null value, denormalization, file organization, index, and secondary key.** **Explain the role of designing databases in the analysis and design of an information system.**

• Second Normal Form (2NF) • Third Normal Form (3NF) • Transforming E-R Diagrams into Relations • Representing Entities • Physical File and Database Design • Choosing Data Types • Calculated Fields • Designing Physical Tables • File Organizations		**Transform an entity-relationship (E-R) diagram into an equivalent set of well-structured (normalized) relations.** **Merge normalized relations from separate user views into a consolidated set of well-structured relations.** **Choose storage formats for fields in database tables.** **Translate well-structured relations into efficient database tables.** **Explain when to use different types of file organizations to store computer files.** **Describe the purpose of indexes and the important considerations in selecting attributes to be indexed.**
• Designing Forms and Reports • Formatting Forms and Reports • Highlighting Information • Color vs. No Color • Displaying Text • Designing Tables and Lists • Assessing Usability • Usability Success Factors • Measures of Usability • Designing Forms and Reports at Pine Valley Furniture • Lightweight Graphics • Forms and Data Integrity Rules. • Template-Based HTML		**Designing Forms and Reports:-** **Explain the process of designing forms and reports and the deliverables for their creation.** **Apply the general guidelines for formatting forms and reports.** **Use color and know when color improves the usability of information.** **Format text, tables, and lists effectively.** **Explain how to assess usability and describe how variations in users, tasks, technology, and environmental characteristics influence the usability of forms and reports.** **Discuss guidelines for the design of forms and reports for Internet-based electronic commerce systems.**
• Designing Interfaces and Dialogues • Interaction Methods and Devices • Methods of Interacting • Command Language Interaction • Menu Interaction • Form Interaction	**7,8**	**Designing Interfaces and Dialogues:-** **Explain the process of designing interfaces and dialogues and the deliverables for their creation.** **Contrast and apply several methods for interacting with a system.** **List and describe various input devices and discuss usability issues for each in relation to performing different tasks.** **Describe and apply the general guidelines for designing interfaces and specific guidelines for layout design,**

• **Object-Based Interaction** • **Natural Language Interaction** • **Designing Interfaces** • **Structuring Data Entry** • **Controlling Data Input** • **Designing the Dialogue Sequence** • **Building Prototypes and Assessing Usability** • **Graphical Interface Design Issues**		**structuring data entry fields, providing feedback, and system help.** **Design human-computer dialogues and understand how dialogue diagramming can be used to design dialogues.** **Design graphical user interfaces.** **Discuss guidelines for the design of interfaces and dialogues for Internet-based electronic commerce systems.**
• **Finalizing Design Specifications** • **The Process of Finalizing Design Specifications** • **Specification Documents** • **Structure Chart** • **Evolutionary Prototyping** • **Throwaway Prototyping** • **Rapid Application Development** **Agile Methodologies**		**Finalizing Design Specifications:-** **Discuss how the need for system design specifications varies by system development methodology.** **Define quality requirements and write quality requirement statements.** **Read and understand a structure chart.** **Explain the roles of prototyping and CASE tools in capturing design specifications.** **Discuss how design specifications apply (or do not apply) to Agile Methodologies.** **Demonstrate how to declare design specifications for electronic commerce applications.**
• **Designing Distributed and Internet Systems** • **The Process of Designing Distributed and Internet Systems** • **Designing Systems for Local Area Networks (LANs)** • **File Servers** • **Designing Systems for a Client/Server Architecture** • **Client/Server Advantages and Cautions** • **Advanced Forms of Client/Server Architectures**	**9,10**	**Designing Distributed and Internet Systems:-** **Define the key terms client/server architecture, local area network LAN, distributed database, and middleware.** **Distinguish between file server and client/server environments and contrast how each is used in a LAN.** **Describe alternative designs for distributed systems and their trade-offs.** **Describe how standards shape the design of Internet-based systems.** **Describe options for ensuring Internet design consistency.** **Describe how site management issues can influence customer loyalty and trustworthiness as well as system security.** **Discuss issues related to managing online data, including context development, online transaction processing**

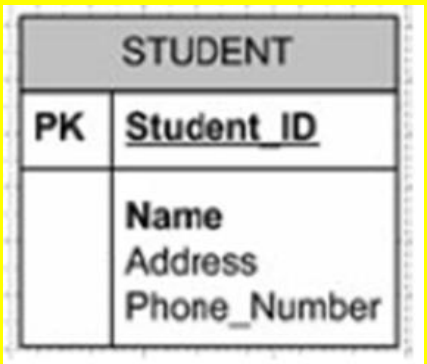
• **Approaches to Designing Client/Server Architectures** • **Designing Internet Systems** • **Standards Drive the Internet** • **Separating Content and Display** • **Future Evolution** • **Site Consistency** • **Design Issues Related to Site Management** • **Customer Loyalty and Trustworthiness** • **Web Pages Must Live Forever** • **Online Data Management** • **Merging Transaction and Analytical Processing** • **Data Warehousing** • **Web Site Content Management** • **Advertising on PVF's WebStore** • **Designing the Advertising Component** • **Designing the Management Reporting Component**		**(OLTP), online analytical processing (OLAP), and data warehousing.**
• • **System Implementation** • **The Process of Coding, Testing, and Installation** • **The Process of Documenting the System, Training Users, and Supporting Users** • **Software Application Testing** • **Seven Different Types of Tests** • **The Testing Process**	**11,12**	**System Implementation:-** **Describe the process of coding, testing, and converting an organizational information system and outline the deliverables and outcomes of the process.** **Prepare a test plan for an information system.** **Apply four installation strategies: direct, parallel, single-location, and phased installation.** **List the deliverables for documenting the system and for training and supporting users.** **Distinguish between system and user documentation and determine which types of documentation are necessary for a given information system.** **Compare the many modes available for organizational information system training, including self-training and electronic performance support systems.** **Discuss the issues of providing support for end-users.** **Explain why system implementation sometimes fails.**

• **Combining Coding and Testing** • **Acceptance Testing by Users** • **Documenting the System** • **Preparing User Documentation** • **Training and Supporting Users** • **Training Information Systems Users** • **Supporting Information Systems Users** • **Automating Support** • **Providing Support Through a Help Desk** • **Support Issues for the Analyst to Consider** • **Organizational Issues in Systems Implementation** • **Security Issues** • **Developing Test Cases for WebStore** • **Bug Tracking and System Evolution** • **Alpha and Beta Testing the WebStore** •		**Describe the threats to system security and remedies that can be applied.** **Show how traditional implementation issues apply to electronic commerce applications.**
Practical Topics		**1. Learning new language or application and working with it.(i.e.The Oracle Database Express edition)** **2. Building DataBases and learning how to manipulate with them like** **relations ,** **Join,…etc.** **3. Like :-** **Create Table and DataBases Constraint** **View-Sequence-Synoname-Index** **Data Manipulation-insert-update-delete** **Qury -Agrigation -Joine – ordered by - sequnces** **Relations and Relationships** **4. The student will be ready to the advanced level in Oracle in stage 4 later.**

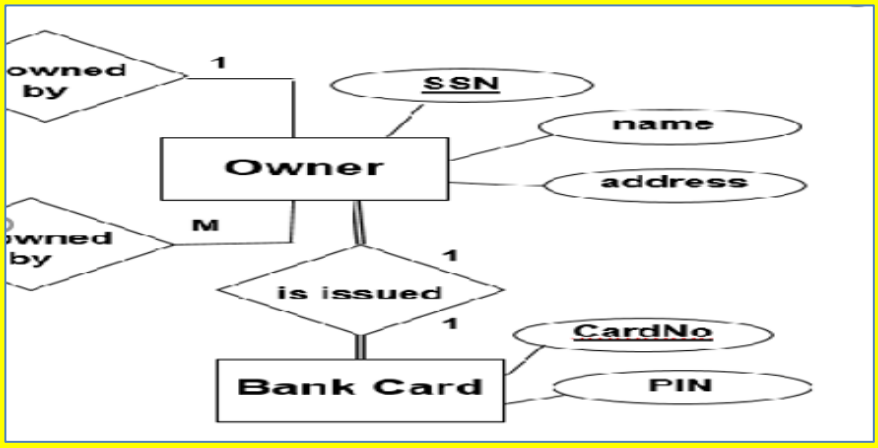
Examinations:

Q) Select **one** branch **only**. (18 marks)

A. What is The equivalent **E-R notation diagram** for the following Microsoft Visio representation.



B. Convert the following ER diagram into the Relational Data Model for the *is issued* relation between *Owner* and *Bank Card* ***only*** , by USEING Visio (Crow's Foot database notation).



Q4) Normalizationj is a very important process ,suppose that you have the following table named Score ,answer :-_____ (15 Marks)

A. Table is in Third Normal Form (3NF) when it satisfy :-

R1:- Must be in --------- NF.
R2:- Non-primary key attributes do not depend on each other (i.e. table should not have --------- dependencies).

B. For the following Score table is in normal form it is ?:-

Score_ID	Stud-ID	Subj-ID	Marks	Exam_Name	Total_Marks

1) 1NF
2) 2NF
3) 3NF
4) 4NF
5) Non of above

C. Convert the *Score* table into 3NF .and then determine In which Phase of SDLC the Normalization is done.

Q1) Select the right sentence

A. Data flow diagrams do not show the logic inside the processes.
B. Flowchart diagrams do not show the logic outside the processes.
C. Data flow diagrams show the logic inside the processes.
D. ER diagrams do not show the logic inside the processes.

Q2) Select the appropriate word (phrase): -

[value, instance, Agile Methodologies, Joint Application Design (JAD), Reuse, Deliverable, Project charter, nine, Prototyping Planning, Interfaces, services, Rapid Application Development (RAD), System Service Request (SSR), Maintenance Team, type, Sponsor, Computer-Aided Software Engineering (CASE) Tools, Design, Outsourcing, objects, components].

1) Some of Typical Stakeholders are -------, --------and -------.

2) **Entity …… collection of entities that share common properties or characteristics, while, Entity…… single occurrence of an entity type.**

3) ------.
4) ------
5) …*etc.*

Q3) Answer briefly :- **(18 Marks)**

1. **Discuses: - Why the Structured English was chosen in Pine Valley Furniture while Deciding Among Structured English and Decision Tables ?**
2. **Depending on which Criteria the selection was made Among Structured English and Decision Tables?**
3. **Complete the missing terms in the following Decision Table payroll example.**

Figure 8-4 Complete decision table for payroll system example

	nditions/ es of Action	Rules					
		1	2	3	4	5	6
Condition Stubs	Employee type	S	H	S	H	S	H
	Hours worked	<40	<40	40	40	>40	>40
Action Stubs	Pay base salary	X		X		X	
	Calculate hourly wage		X		X		X
	Calculate overtime						X
	Produce Absence Report		X				

Q4) A project manager has a wide variety of techniques available for depicting and documenting project plans. These planning documents can take the form of graphical or textual reports , although ,graphical reports have become most popular for depicting project plans The most commonly used methods are Gantt charts and Network diagrams .

A. **Define and explain each one briefly .Note:- Use simple diagram(s) in addition to explanation .**
B. **Discusses the differences between them.**
C. **Finally, Detect which method you prefer in our case study Pine Valley Furniture (PVF) ?**

Q5) Fill the following :- **(9 Marks)**

A. **Systems Analyst Characteristics for Successful Requirements Determination are Impertinence, ---------, Relaxing constraints, Attention to details and Reframing .**
B. **Gap Analysis is the process of discovering ---------- between two or more sets of data flow diagrams or discrepancies within a single DFD.**

Q6)Multiple choices:

-Inefficiencies in a system can often be identified through …….. .

1.DFDs. 2. Reuse
3. Joint Application Design (JAD)
4. Rapid Application Development (RAD)
Soulution :- 1. DFDs

Q7/ Compare between the standard Systems Development Life Cycle (SDLC) and Traditional Waterfall SDLC BY diagram only, Then, Define Implementation phase in standard Systems Development Life Cycle. Finally what is the Main or a most important problem in Waterfall SDLC?

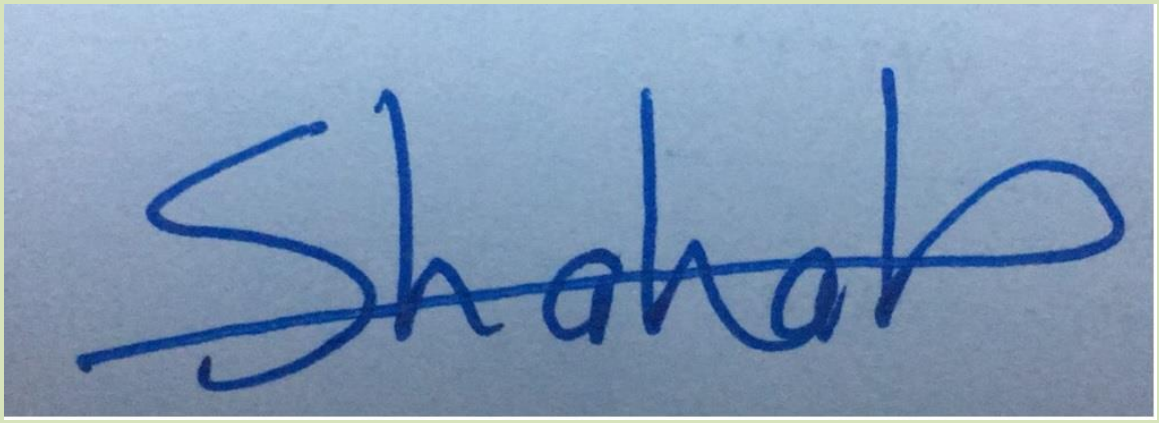
20. Extra notes:

Although

A Lecturer must be ready to take the responsibility of any new subject and meet the department's needs , But, I prefer to work with subjects that are near to my academic speciality (like Data Structure and Programming Fundamentals by C++). That is not fair to the Lecturer and students.

External Evaluator

I confirm that the course book covers all the most important topics that student have to be learned during the year of studying



Shahab Wahhab Kareem

15-01-2022