Mid Term Exam

INFO8000- Systems Development: Concepts & Analysis

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Q.1 **The event decomposition technique begins by identifying the goals of each stakeholder.**

Ans : False

(The event decomposition technique begins by identifying use cases.)

Q.2 **At the end of the inception phase a decision is made on whether to cancel or proceed with the project.**

Ans : **False**

(An "inception phase" is a dedicated period at the beginning of a program that is focused on learning and better understanding the context for implementation.)

Q.3 **In Scrum, the Scrum Master is responsible for assigning the daily tasks to all team members.**

Ans : True

Q.4 "MATCHING" Identify the parts of the following use case name: "Customer Creates Order"
Ans: **Actor**

Q.5 **An Actor can be:**

a) A person or role, or an organization
b) A person or role, organization, system, or device
c) A person or role, organization, or system
d) A person or role, organization, or device

Ans: C- A person or role, Organization or System

Q.6 **What is the difference between a functional requirement and a usability requirement?**

a) A functional requirement describes items that will improve functional performance of the system, a usability requirement describes requirements gathered from users.
b) A functional requirement describes an action the system must perform, a usability requirement describes operational characteristics related to the user.
c) A functional requirement exclusively describes internal system workflows, a usability requirement exclusively describes external system workflows.
d) A functional requirement describes operational characteristics related to the user; a usability requirement describes an action the system must perform.

Ans: b) A functional requirement describes an action the system must perform, a usability requirement describes operational characteristics related to the user.

Q.**7 Which requirements gathering technique is most effective to get students to brainstorm or have an active discussion about features of a possible social networking application?**

a) **observing**
b) focus groups
c) surveys
d) questionnaires

Ans: **d) questionnaires**

Q.8 A(n) <u>Temporal</u> event is an event that occurs as a result of reaching a point in time.

a) External
b) Temporal
c) Internal
d) State

Ans: **b) Temporal**

Q.9 (Software development methodologies) …
Do a comparison chart (or "bullet-points", etc.) listing 3 advantages and 3 disadvantages of "Agile" and
3 advantages and 3 disadvantages of "Waterfall".

1. **If you were a Business Systems Analyst with SBRU, and the likely outcomes or deliverables of a project were not well known ….**
    1. **What methodology would you like to use?**
    2. **What might you expect the reaction of your choice to be?**
    3. **How might you try to convince people to adopt your preferred method**

Ans:

<u>Agile Methodology:</u>

The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage. Once the work begins, team cycle through a process of planning, executing, and evaluating. Continuous collaboration is vital, both with team members and project stakeholders.

Advantages of Agile Methodology	Disadvantages of Agile Methodology
• The effective product design is the major focus of the Agile methodology. • If there is some change in the requirements such as customer needs more features in the application or software, it can be accepted in the later stage of the development. • Customers are happy since working software features are delivered to them after each Sprint. • During testing of the application If we found any bug in the product, we can fix it very easily.	• Due of the frequent interaction that developers and consumers must have, Agile requires more time and effort from everyone. • The amount of time and resources needed for complex projects are difficult to predict. • Documentation in less. Hence for a new resource its very difficult to understand the project. • To successfully deploy an Agile approach, a significant amount of training and expertise is needed.

Waterfall Methodology:

The waterfall methodology, or model, is a linear approach to project management that requires each phase to be completed before moving on to the next.

Advantages	Disadvantages
• There is minimum client intervention or a dialogue with the client. • Before the next phase of development, each phase of the development should be completed. • Its suitable for the small-scale projects.	• If you find any bug in the later stage, its very difficult to solve it. • Testing phase will come in the later stage of development • Documentation takes more time for developers and testers.

2. **If you were a Business Systems Analyst with SBRU, and the likely outcomes or deliverables of a project were not well known ….**
    1. **What methodology would you like to use?**

    Ans: I would like to use Agile methodology. Because in agile methodology interaction between the customer and the developers are more than waterfall. So the during the end of each sprint we can discuss with the customer what more and clear wants in project.

    2. **What might you expect the reaction of your choice to be?**

Ans: Now a days the agile methodology is very much popular in the industry. I think reaction is positive and I will explain them the advantage of the same.

3. How might you try to convince people to adopt your preferred method.

Ans:I will convince them and explain the main advantages such as

1. It will require less cost.
2. In agile customer satisfaction is a priority.
3. We can accept the changes at any stage so that less time is required to make changes.

Reference :

1) https://www.wrike.com/project-management-guide/faq/what-is-agile-methodology-in-project-management/

Q.10. Explain the difference between "functional" and non-functional requirements?

Ans :

Functional Requirements	Non- Functional Requirements
1. A functional requirement defines a system or its component.	1. A non-functional requirement defines the quality attribute of a software system.
2.It specifies that what should the software system do?	2. Its focus on how should the software system fulfill the functional requirements?
3. Functional requirement is specified by User.	3.Non-functional requirement is specified by technical peoples such as team leader and technical lead etc..
4. These are easy to define.	4.It is difficult to define.
5. It helps to verify the functionality of the software.	5.It helps to verify the performance of the software.
6. These are the requirements that the end user specifically demands as basic facilities that the system should offer.	6. These are basically the quality constraints that the system must satisfy according to the project contract.

Q.11 Name three different ways (techniques) that you might capture a users' story to help gather requirements.

Ans :

Three different ways to capture the user story are

1.Interview users of the application and related stakeholders.

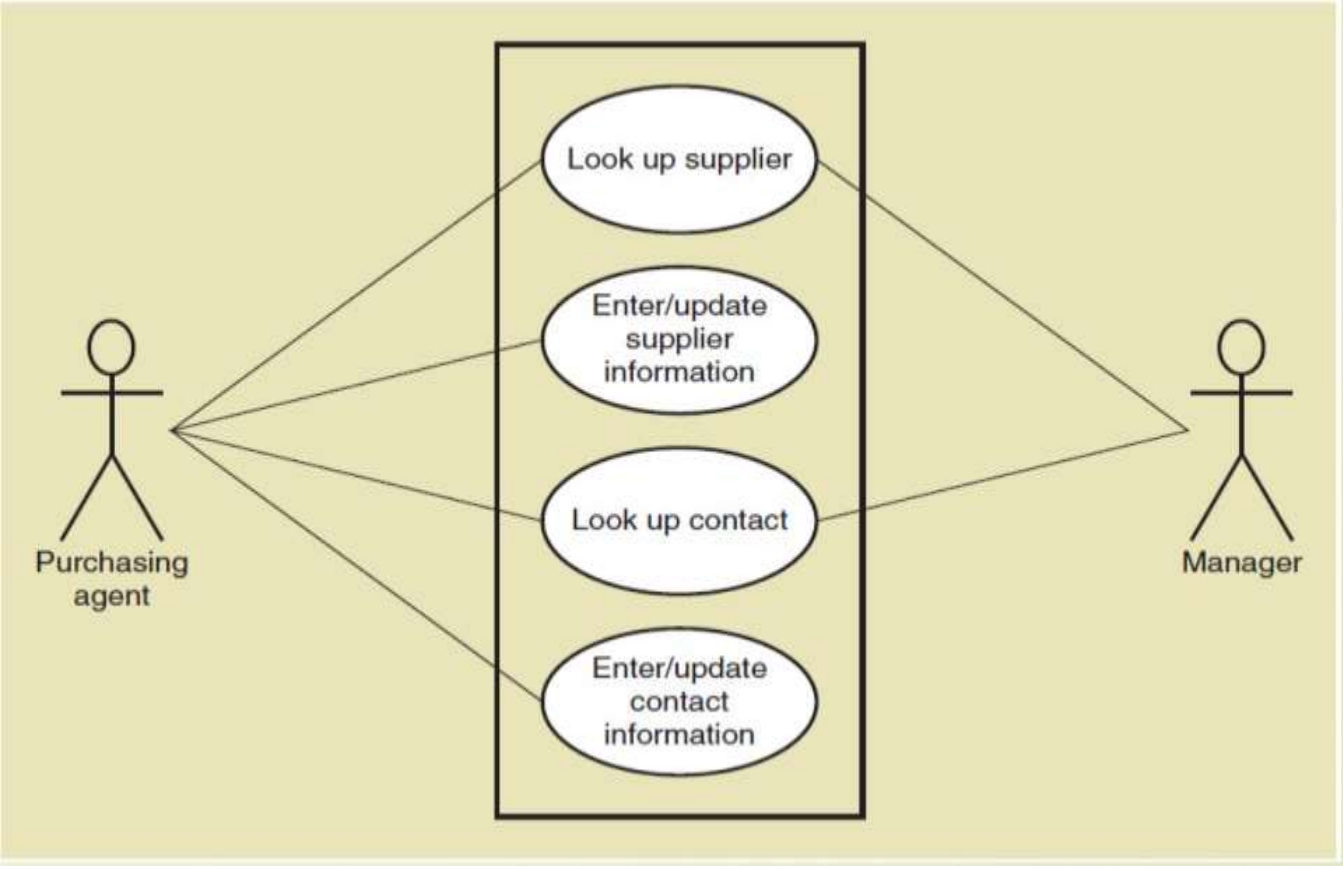
2. Collect documentation for the customer.

3.Collect the active users' comments and suggestions after launching the beta version.

4.Distribute and collect questionnaires.

Q.12 **Cut/paste a sample of an Event table and Use Case Diagram – and brief explanation what each sample is trying to convey.**

Ans :



Actors:

1.We can see the actors are the purchasing agent and manager.

2.These both actors are not included in the process

Q.13 List the elements of the Software Development Life Cycle (SDLC).
Briefly explain the purpose of each core process.

Ans:

Software Development Life Cycle(SDLC)

1. Identify the problem or need and obtain approval:
   - First step during the SDLC is the identify the problem i-e To create a product that meets the needs of the consumer, all necessary information is gathered from them. We must collect requirements from the customer in the form of documents and what is purpose of the product ,by doing interview to users and stakeholders.
   - After getting the information we must identify the problem and according to that we must prepare the schedule of the project.
   - We must take approval from the top management and customer which include technical and financial regarding the cost of the project.

2. Plan and monitor the project
   - After the approval from the customer, we must begin to plan the project such as which method we have to use and what is time frame of the project.
   - While planning we must consider the key points such as
     1.Econimic: Can we complete the project within the budget or not?
     2.legal: Can we handle this project as cyber law and other regulatory compliances.
     3. Operational Feasiblity: Can we create operations which is expected by the client?
     4.Scedule: Decide that the project can be completed within the given schedule or not

3. Discover and understand the details of the problem or need:
   - In this phase we must prepare the document which will describe the solution of the problem and what is the actual need of the product.

4. Design the system components that solve the problem:
   - In this phase the system and software design documents are prepared as per the requirement specification document. This helps define overall system architecture.
   - This design phase serves as input for the next phase of the model.
   - Prepare the brief description of each module .
   - Outline of the functionality of each module.
   - Interface relationships and dependencies of the each modules.
   - Prepare the database tables.
   - Complete the architectural diagram with the technology details.

5. Build, test, and integrate system components.
   - In this Phase the actual development of the project starts. Developers starts coding and they will handover to the testers.
   - Testers will do testing and get bugs in the system which is again transferred to the coder. hence a robust application is built.

6. Complete system tests and deploy the solution
   - In this phase testers will do the final testing software system and complete the Testing phase.
   - In the final stage software is deployed.

Q.14 Give TWO (2) examples of functional and give TWO (2) examples of non-functional requirements.

Ans:

Functional Requirement examples:

1. The system must send a confirmation email whenever an order is placed.

2. The system must allow blog visitors to sign up for the newsletter by leaving their email.

3. The system must allow users to reset their password by clicking on "I forgot my password" and receiving a link to their verified email address.

Non-functional requirements:

1. Each wen page of the website page must load within 2 seconds. (Performance)

2. The updating process must finish within 2 hours, so data is available by 8 a.m. local time after an overnight update. (Scalability)

3. Every unauthorized request to a resource must be logged and stored for audit over the next 5 years. (Security)

Q.15. Identify different kinds of stakeholders.
Give one example of each kind of stakeholder and indicate how they have may have INTEREST or INFLUENCE in a project.
Ans:

There are main types of stakeholders in software development:

1.Internal Stakeholders:

Internal stakeholders are the people within the organisation. Eg. Project manager, technical lead they can influence the project. They are responsible for the managing the project and also the time frame of the project depends upon them.

2.External Stakeholders :

People outside the organization, such as vendors, customers, & regulatory authorities, Eg. such as a raw material supplier. It can delay the manufacturing process if the raw material is not sent on time.

3.Operational Stakeholders:

People who regularly interact with the system. (May be internal or external) These stakeholders can be customer who has give requirements for the product and for each end of the sprint he will demand the readiness of the project.

4.Executive stakeholders:

People who use the information gathered or have financial interested. Purchase manager or Board of directors. They can reduce cost of the project, or they can increase the cost of the project.

Q.16 Name at least 3 different ways of collecting ("eliciting") information to gather requirements.

Ans: There are many ways to collect information to gather requirements

1. One-on-One Interviews
2. Group Interviews
3. Questionnaires/Surveys
4. User Observation
5. Analysing existing documents

Q.17 Two types of models that we studied are Use Cases and "Swim Lanes"/workflow diagrams. Which did you find to be more useful (and why) and what were some of the limitations that you ran info?

Ans: According to me the swim lanes are more useful because
1.It clarifies the complex process.
2.It improves the communication.
3.It point out the participants easily hence easy to view.
4.Its very easy to analyse and we can improve periodically.

Q.18 One of our PowerPoint Slides suggests that "Most methodologies now use Agile and an iterative approach" … Why do you think this is true?

Ans:

According to me its true. The agile iterative approach focus on delivering the values as fast in improvements rather than at once.So for the Big projects such as machine learning we will require the iterative approach because we are getting more data in the iterative manner. Nowadays custamer satisfaction is important and interaction with the customer is important which agile provides.

Q.19 Name 3 key features of Agile development.
Name 3 key features of Unified ("Waterfall", "Traditional" Process)

Ans :
Three key features of the Agile development
1.Iterative approach
2.Less documentation and more work
3. Custamer satisfaction and dialoge with the customer at each stage of the development.
4. Low cost.

Three key features of the Waterfall
1.Requirements are very well documented, clear and fixed.
2. Product definition is stable.
3. The project requires less time to complete.

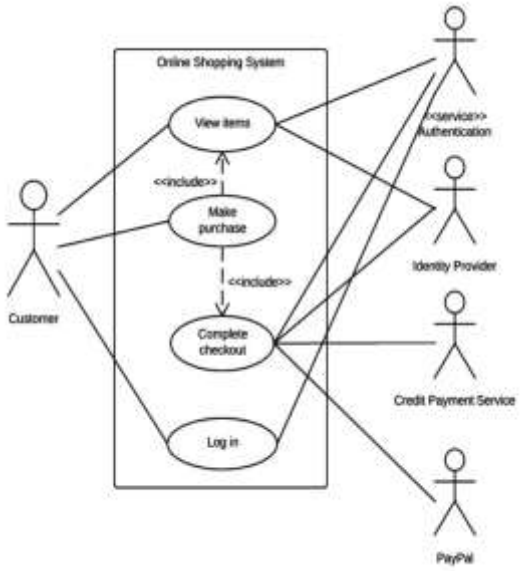
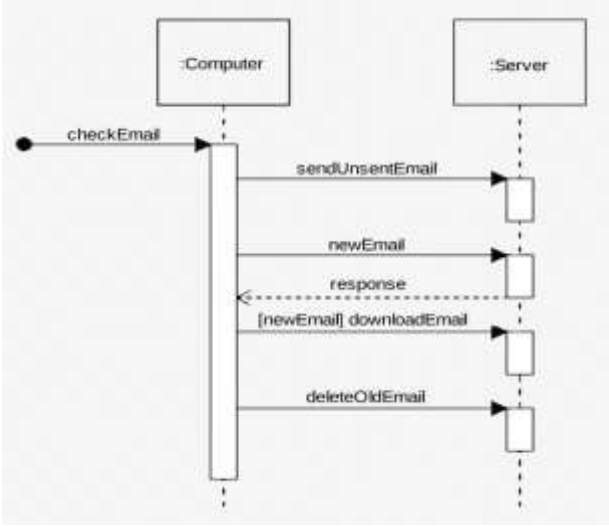
Q.20 Create a chart that lists the following models of system components:

- **Use Case Diagram**
- **Sequence Diagram**
- **Dialog design storyboard**

List these three (3) models in a column on the left of your chart and IN YOUR OWN WORDS, state the PURPOSE of each one, AND at least ONE (1) advantage and at least ONE (1) disadvantage for each.

(You may cut/paste samples from anywhere you wish, if it adds to your explanation outside of the chart).

Ans:

Use Case Diagram :  	Purpuse of use case diagram: The context and requirements of either the complete system or the key components of the system are illustrated and defined through use-case diagrams. A complicated system can be represented by a single use-case diagram, or its various components can be represented by a number of use-case diagrams. Advantage: A use case diagram's main benefit is that it aids in the user-centered design of business and software processes.
Sequence Diagram :  	Purpose : It displays the logic of how the system's objects interact with one another in the sequence in which those interactions occur. Advantages: It helps to discover architectural,uinterface and logic problems easily

Q.21 : Define the term “FURPS” … what does it stand for, (list each item) and give ONE (1) example of each.

Ans :

FURPS:

FURPS—functionality, usability, reliability, performance, and supportability.
Functionality:
Functionality is examined by looking at the program's feature set and capabilities, the generality of the functions it provides, and the system's overall security.
Human aspects, overall aesthetics, consistency, and documentation are taken into account while evaluating usability.

Reliablity:
The frequency and severity of failures, the accuracy of output data, the mean-time-to-failure (MTTF), the capacity to bounce back from failure, and the predictability of the programme are all used to assess reliability.
Performance is measured by processing speed, response time, resource consumption, throughput, and efficiency.

Suportablity:
Supportability combines testability, compatibility, configurability, the ease with which a system can be installed, and the ease with which problems can be localised, in addition to the ability to extend the programme (extensibility), adaptability, and serviceability—these three attributes represent the more common term, maintainability.

- **Q.22. Q22a>(02 of 12 Marks)> Name the members of your group.**
- **Q22b>(04 of 12 Marks)> Discuss any episode, situation, or scenario that you perceived to be a "conflict" or difference of opinion for you or within the group. Which "conflict resolution style" did you/your group use? Was it effective? What do you believe should have been done? hint: Check our "Lectures" slide deck/PowerPoint in our eConestoga Content.**
- **Q22c>(02 of 12 Marks)> Did your team have a "Team Charter"? Why or why not? And describe a scenario in your group where you believe a Team Charter would have been successful?**
- **Q22d>(04 of 12 Marks)> Imagine that you were able to "go back in time", and you were formally named as the "Group Leader" for the first group project. Describe what you would have done differently and why? Describe what you would have done similarly and why?**

a) Name the members of the group:

1.Basavraj Jaliminche

2.Dhartiben Patel

3. Tejendhra indukuri

4. Namita Amgain

b)

c)Yes we have a team charter.

d)If I go back in time I will work more on the project and describe each item clearly and do more specific study of the project.