CSE470: Software Engineering

SET - A Semester: **Fall 2024**   Time: **25 minutes**
Examination: **Quiz 1**   Full marks: **20**

Name: _____ **ID**: _____ **Section**: 15

A small travel company has decided to start using software systems as a part of their recent technological upgrade. They want to start this process by developing their own employee management software with payroll options.

Currently all employee information and salaries are being handled manually in physical paper copies. This is particularly challenging as the number of members of the office are also increasing as they are opening new branches. Currently they have around 50 employees. But it is expected to reach 200 with the new branch offices. So the client wants a way to add new employees as they join and store their information in the software, as well as update the system once the employee leaves. It also needs to work across all of their branches. All the baking information will also be processed here The client also mentioned that they use iMac computers in their offices. However the employees use any browser they like. The client is certain about the project features and only wants to see the product after it is fully developed.

Since they don't have any previous experience about this, they have reached out to your company which is very renowned for having the best engineers from around the country.

Questions 1:

A. What SDLC Methodology should you use here?   **[1 Mark]**

   Waterfall

B. Write down the steps of this model and explain in one line each.   **[7 Marks]**

● Requirement Analysis
● Design
● Coding
● Testing
● Deployment
● Maintenance

C. Find out 3 Functional and 3 Non-Functional Requirements.   **[6 Marks]**

Question 2: Write down the roles of Scrum Framework and explain in one line each. **[6 Marks]**

Product Owner
Possibly a Product Manager or Project Sponsor
Decides features, release date, prioritization, $$$

Scrum Master
Typically a Project Manager or Team Leader
Responsible for enacting Scrum values and practices
Remove impediments / politics, keeps everyone productive

Project Team
5-10 members; Teams are self-organizing
Cross-functional: QA, Programmers, UI Designers, etc.
Membership should change only between sprints

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SET - B   Semester: **Fall 2024**   Time: **25 minutes**
              Examination: **Quiz 1**   Full marks: **20**

Name: _____   **ID**: _____   **Section**: 15

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Currently all employee information and salaries are being handled manually in physical paper copies. This is particularly challenging as the number of members of the office are also increasing as they are opening new branches. Currently they have around 50 employees. But it is expected to reach 340 with the new branch offices. So the client wants a way to add new employees as they join and store their information in the software, as well as update the system once the employee leaves. It also needs to work across all of their branches. All the baking information will also be processed here The client also mentioned that they use windows computers in their offices. However the employees use any browser they like. The client is certain about the project features and only wants to see the product after it is fully developed.

Since they don't have any previous experience about this, they have reached out to your company which is very renowned for having the best engineers from around the country. However, they still feel skeptical about the whole project and want the most testing possible on this project.

Questions 1:

   A. What SDLC Methodology should you use here?   **[1 Mark]**

V Model

   B. Write down the steps of this model and explain in one line each.   **[7 Marks]**

Requirement Analysis	Acceptance Testing
Architecture Design	System Testing
Component/Module Design	Integration Testing
Code generation	Unit Testing

C. Find out 3 Functional and 3 Non-Functional Requirements. **[6 Marks]**

Question 2: Explain 3 frameworks of Agile Methodology (one line each) **[6 Marks]**

Extreme Programming
- In short also known as XP
- New versions may be built several times per day
- Increments are delivered to customers every 2 weeks
- All tests must be run for every build and the build is only accepted if tests run successfully.

Agile Unified Process
- Another Agile Software Development Methodology
- Agile Unified Process (AUP) is a simplified version of the Rational Unified Process (RUP).

Scrum
- **It is the most widely used Agile S/W development method for project management**
- **The full software is delivered in 14-30 days iterations**

BRAC University
Department of Computer Science and Engineering (CSE)

CSE470: Software Engineering

SET - C Semester: **Fall 2024**
Examination: **Quiz 1**

Time: **25 minutes**
Full marks: **20**

Name: _____ **ID**: _____ **Section**: 15

A small startup travel company has decided to start using software systems as a part of their recent technological upgrade. They want to start this process by developing their own employee management software with payroll options.

Currently all employee information and salaries are being handled manually in physical paper copies. This is particularly challenging as the number of members of the office are also increasing as they are opening new branches. Currently they have around 50 employees. But it is expected to reach 340 with the new branch offices. So the client wants a way to add new employees as they join and store their information in the software, as well as update the system once the employee leaves. It also needs to work across all of their branches. All the baking information will also be processed here The client also mentioned that they use windows computers in their offices. However the employees use any browser they like. The client is not certain about the project features and wants to update the software if they don't like the outcome.

Since they are a startup, they have reached out to your startup tech company. They want to see how things turn up initially and provide feedback based on that. Then you will have to incorporate those feedbacks into the software.

Questions 1:

    A. What SDLC Methodology should you use here? **[1 Mark]**

Iterative

    B. Write down the steps of this model and explain in one line each. **[7 Marks]**

Basic SDLC Steps
Customer is not sure about the requirements
Even the development team may not be sure about which technology, algorithms may be used.
There is no fixed limit of iterations, that is time is set aside.

C. Find out 3 Functional and 3 Non-Functional Requirements. **[6 Marks]**

Question 2: Explain 3 principles of Extreme Programming (one line each). **[6 Marks]**

Extreme Programming

Incremental planning	Refactoring	
Small releases	Pair programming	Sustainable pace
	Collective ownership	
Simple design		On-site customer
Test-first development	Continuous integration	

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SET - D   Semester: **Fall 2024**   Time: **25 minutes**
Examination: **Quiz 1**   Full marks: **20**

Name: _____   **ID**: _____   **Section**: 15

A small startup travel company has decided to start using software systems as a part of their recent technological upgrade. They want to start this process by developing their own employee management software with payroll options.

Currently all employee information and salaries are being handled manually in physical paper copies. This is particularly challenging as the number of members of the office are also increasing as they are opening new branches. Currently they have around 50 employees. But it is expected to reach 340 with the new branch offices. So the client wants a way to add new employees as they join and store their information in the software, as well as update the system once the employee leaves. It also needs to work across all of their branches. All the baking information will also be processed here The client also mentioned that they use windows computers in their offices. However the employees use any browser they like.

The client is certain about the project features, but they don't need the software all at once. Their first priority is the employee management, then they need the payroll system. Also they want to preview the system after each feature implementation. They have reached out to your tech company.

Questions 1:

A. What SDLC Methodology should you use here?   **[1 Mark]**

Incremental

B. Write down the steps of this model and explain in one line each.   **[7 Marks]**

Basic SDLC Steps
Customer wants to use the software from the very beginning of the project
Customer is quite well-known about the requirements
The software is divided into fixed number of increments to be delivered to customers

C. Find out 3 Functional and 3 Non-Functional Requirements. **[6 Marks]**

Question 2: Write down 3 differences between Sprint and Daily Scrum meetings. **[6 Marks]**

Scrum Meeting:

Parameters
- Daily, ~15 minutes, Stand-up
- Anyone late pays a $1 fee

Not for problem solving
- Whole world is invited
- Only team members, Scrum Master, product owner, can talk
- Helps avoid other unnecessary meetings

Three questions answered by each team member:
- What did you do yesterday?
- What will you do today?
- What obstacles are in your way?

Sprint Meeting

Team presents what it accomplished during the sprint
Typically takes the form of a demo of new features or underlying architecture
Informal
- 2-hour prep time rule
- No slides
Whole team participates
Invite the world