

Spring 2023

Course Code: CSE334s

Time : 2.00 Hrs

Software Engineering

The exam consists of **three** Questions in **three** Pages.

Total Marks: 60 Marks

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تعليمات هامة

- (1) حيافة التليفون المحمول مفتوحا داخل لجنة الامتحان يعتبر حالة غش تستوجب العقاب وإذا كان ضروري الدخول بالمحمول فيوضع مغلق في الحقيبة.
- (2) لا يسمح بدخول سماعة الأذن أو البلوتوث. و كذلك لايسمح بدخول أي كتب أو ملازم أو أوراق داخل اللجنة والمخالفة تعتبر حالة غش.

Answer all Questions

Question 1 [12 Marks]

Briefly Complete the following statements (3 marks each):

- XP development means ____ and the Code refactoring stage in it is required to _____
- The difference between incremental and iterative SDLC models in effort and value delivered is _____
- _____ in agile applications are the components of requirements.
- User stories are nearer to the perspective of both developer and customer than use cases because _____
- Saw tooth V-model is better than usual V-model because _____
- Customer Journey mapping can be used in Design thinking for the stage of _____

Question 2 [16 Marks]

The following use case description shows the details of a participant (student) adding a comment abouts specific course material on an LMS

Add Comment
Brief description: The actor adds a comment
Actors: Participant
Preconditions: The actor is a registered student
Basic flow of events: <ol style="list-style-type: none"> The actor logs into the system The system authenticates the actor and starts a session The actor chooses to add a comment The actor is guided by the system to fill in required information to add a comment The system acknowledges that comment added The actor leaves the system
Extensions: <ol style="list-style-type: none"> The system fails to authenticate the actor. <ul style="list-style-type: none"> The system informs the actor and doesn't allow the actor to proceed The system fails to add a comment <ul style="list-style-type: none"> The system informs the actor
Post-conditions: The new comment is added
Special requirements: Actor is connected to Internet and uses a Java enabled Mobile phone

Software Engineering

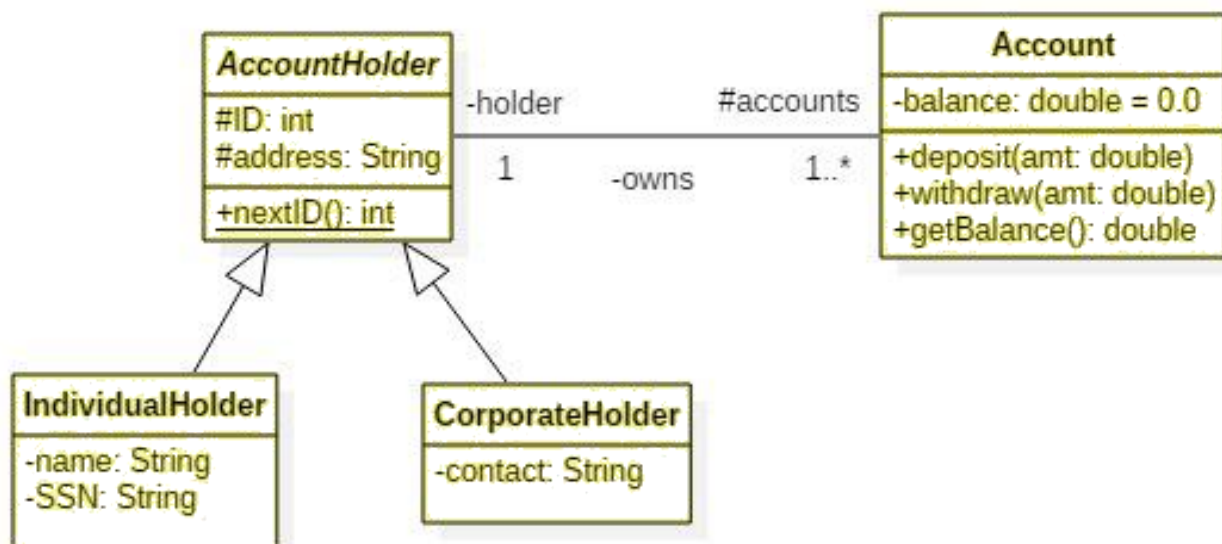
The exam consists of **four** Questions in **three** Pages.

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- a) Describe the requirement of the given use case as a user story [4 Marks]
- b) List the analysis classes needed for the use case of *Add_Comment* [4 Marks]
- c) Create a related system sequence diagram [4 Marks]
- d) Draw as complete as possible use case diagram for the LMS [4 Marks]

Question 3 [16 Marks]

Given the following UML class diagram about bank accounts for persons and companies (corporate), Make all reasonable assumptions and state them list all

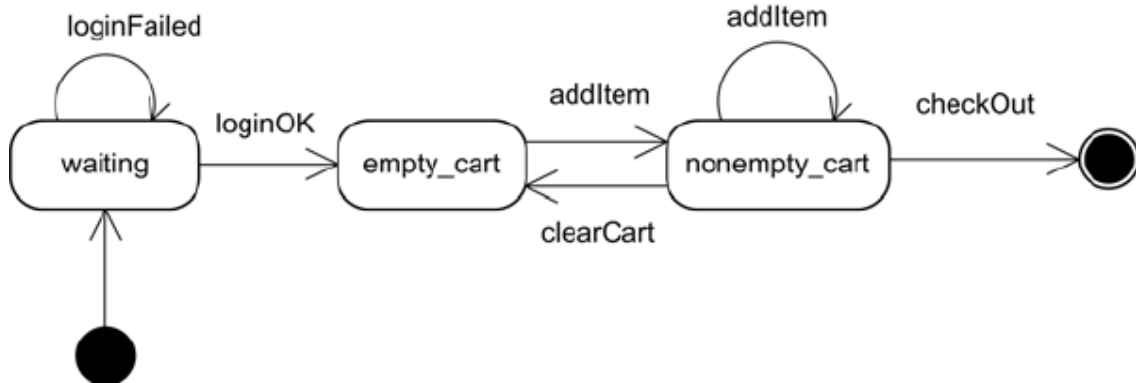


For each of the following attributes (choose the most suitable class to insert into):
iscore, opening_date, annual_fees, date of birth. [4 marks]

- a) On the same class diagram add the needed analysis (boundary and control) for the use case *create_new_corporateAccount()* [4 marks]
- b) Draw a time sequence diagram given an individual name it lists all accounts he/she has [4 marks]
- c) Add a class for transactions which could be deposit or withdraw and it has transaction date, type and amount [4 marks]

Question 4 [16 Marks]

The Following state diagram describes an e-commerce application:



- Show what will happen in the following cases (event sequences) [4 marks]
 - <loginFailed, LoginOK, additem, additem, checkout>
 - <loginFailed, LoginFailed, loginOK, addItem, ClearCart, checkout>
- Add **removeItem** event and **number_of_items** variable which is initialized to zero, add all possible and needed actions and transitions [4 marks]
- Modify the given state transition diagram to limit the number of failed login tries to three then it goes directly to the end state [4 marks]
- Design a GUI form/ dialog box or webpage for the above system [4 marks]

Good Luck

Examiner Dr. Islam El-Maddah

Exam. Date : 11 June 2023