

Sample Question COMP201 Sebastian Coope

Question 1 Which of the following statements best describes both verification and validation?

- a) Validation confirms the software is syntactically correct, verification confirms it operates according to the specification
- b) **Validation confirms the software is good for the end user, verification confirms it works according to the specification**
- c) Validation confirms the software is good for the end user, verification confirms that can be proved to work correctly in all cases
- d) Validation confirms the software is syntactically correct, verification confirms that can be proved to work correctly in all cases
- e) None of the above

Question 2 Looking at the class diagram shown in Figure 1, which of the following describes all the IS-A relationships.

- a) B is an A, C is an A, E is a C, F is a D only
- b) **B is an A, C is an A, E is a C, E is an A, F is a D only Note relationship is transitive**
- c) C is a B, D is a C, F is an E only
- d) B is a C, C is a D, E is an F only
- e) A is an B, A is an C, C is a A, A is an E, D is a F only

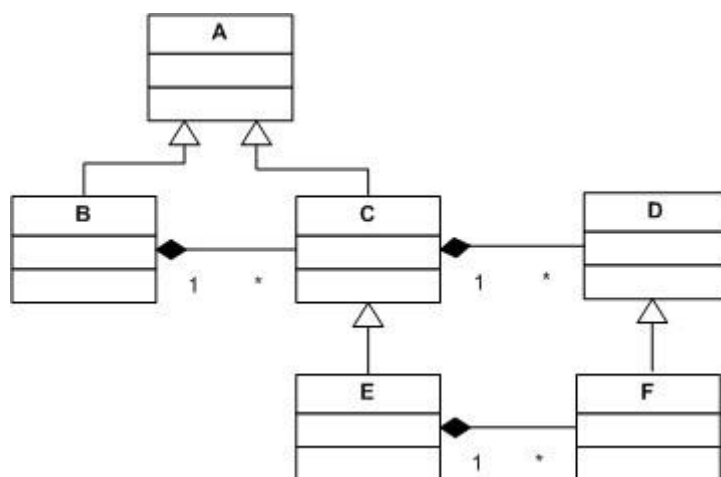


Figure 1 Class Diagram

Question 3 Looking at Figure 1, which of the following best describes all of the IS PART OF relationships?

- a) B is part of C, C is part of D, E is part of F
- b) B is part of C, C is part of D, E is part of F
- c) B and C are part of A, E is part of F, C is part of D
- d) **C is part of B, D is part of C, F is part of E and D is part of B Again transitive**
- e) E and F are part of C and D

Question 4 Look the Figure 2, which of the following would be the best match (note not all use cases are shown):

- a) UseCase1 Check item is in stock, UseCase2 Item out of stock inform customer, UseCase 3 Payment failed
- b) UseCase1 Take payment, UseCase2 Payment failed, UseCase 3 Item out of stock
- c) UseCase1 Take payment, UseCase2 Invalid product code, UseCase 3 Item out of stock
- d) **UseCase 1 Check item is in stock, UseCase2 Item out of stock inform customer, UseCase 3 Take payment**
- e) UseCase 1 Take payment, UseCase2 Item out of stock inform customer, UseCase 3 Payment failed

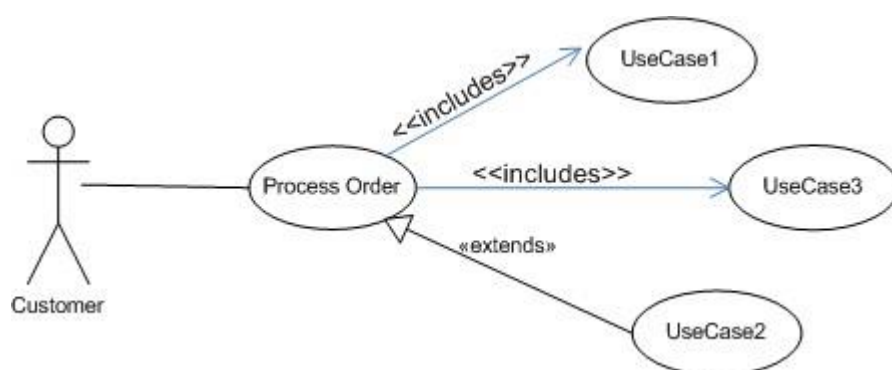


Figure 2 Actor model

Question 5 Consider the Petri Net in Figure 3 with places p1, p2, p3 and p4 and transitions t1, t2 and t3. For the given initial state of the system shown in Figure 3, which transitions are enabled?

- a) Any two of T1, T2 and T3
- b) T1, T2 and T3
- c) **T1 and T2 only**
- d) T3 only
- e) No transitions

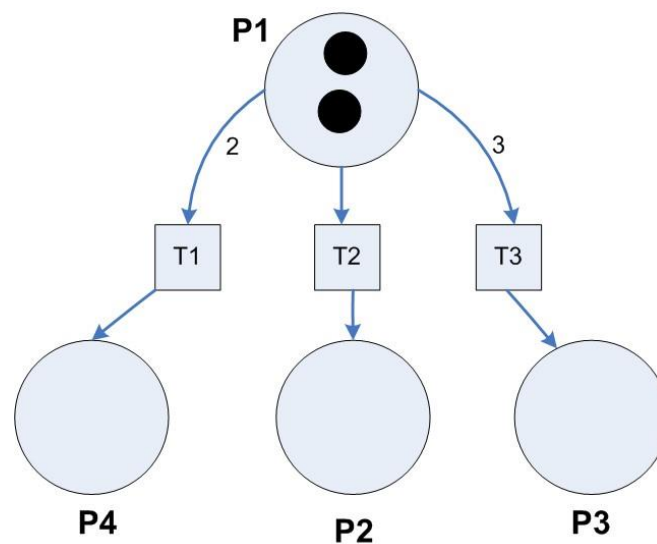


Figure 3 Simple Petri Net

Question 6. When the Petri Net shown in Figure 3 fires, which transitions will fire, and after firing what will be the state of the net?

- a) T1 will fire and the state will be (0,0,0,2)
- b) T2 will fire and the state will be (0,1,0,0)
- c) T3 will fire and the state will be (0,0,3,0)
- d) **T1 or T2 will fire we cannot determine which, if T1 fires the state will be (0,0,0,1) if T2 fires the state will be (1,1,0,0)**
- e) T1, T2 and T3 will fire we cannot determine which the state of the net will be random

Question 7 Which of the following statements about cohesion and couple is true

- a) High cohesion and high coupling lead to high quality software
- b) Low coupling makes software hard to test, high cohesion leads stronger software with less bugs
- c) **Low coupling and high cohesion makes software easier to test and debug**
- d) High coupling makes the software run faster, low cohesion is a part of the syntactic structure of the code
- e) Coupling and cohesion are only relevant for distributed systems

Question 8 Which of the following are features of black box testing?

X1 **Code is hidden**

X2 Path testing is done

X3 Software is tested according to specification using test cases

X4 **Boundary cases are used**

X5 Loop testing is done

- a) All of the above
- b) X1, X2, X3 and X4
- c) X1,X2, X3 and X5
- d) **X1,X3 and X4**
- e) X2,X3,X4 and X5

Question 9 Which of the following best describes high software robustness?

- a) Low chance of software failure
- b) **Low chance of data loss or corruption on crash**
- c) Low chance of software testing failure
- d) Strong coupling between modules
- e) High speed of execution

Question 10 Which of the following are non-functional requirements?

- X1 User uses username and password to login
- X2 Passwords must be at least 10 characters long
- X3 Development team uses ISO9000 quality standard
- X4 Development is done in Java
- X5 The system scans and processes paper sourced documents.

- a) X1,X2,X3 and X4
- b) X2,X3 and X4
- c) All of the above
- d) X1 and X5
- e) X2, X2,X4 and X5