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1: UML activity diagrams are useful in representing which analysis model elements?

a) Behavioural elements
b) Class based elements
c) Flow based elements
d) Scenario based elements

2: Unified Modelling Language (UML) is a graphical language for

a) visualizing
b) specifying
c) none
d) both a and b

3: To support this module view which UML diagrams are used?

a) package diagram
b) component diagram
c) both a and b
d) activity diagram

4: Which of the following are the design concerns is design model?

a) Data
b) Interfaces
c) Architecture
d) a, b and c

5: Which of these are characteristics of a good design

a) exhibits strong coupling between its modules
b) implements all requirements in the analysis model
c) provides complete picture of the software
d) b and c

6: Which of the following is used to represent the architectural design of a software?

a) Dynamic models
b) Functional models
c) Structural models
d) All of above

7: Since modularity is an important design goal it is not possible to have too many modules in a proposed design

a) True

b) False

8: All architecture is design, not all design is architecture

a) True

b) False

9: Reusability of software modules refers to

a) the easiness of maintaining a software system

b) that its components can be easily reused in the development of other software systems

c) that can be easily transported from one hardware/software platform to another,

d) that a system performs user required functionality correctly

10: Cohesion is a qualitative indication of the degree to which a module

a) can be written more compactly

b) focuses on just one thing

c) is able to complete it functionality on time

d) measures the interconnection among modules in a software structure

11: Coupling is a qualitative indication of the degree to which a module

a) can be written more compactly

b) focuses on just one thing

c) is able to complete it functionality on time

d) measures the interconnection among modules in a software structure

12: Information hiding is a qualitative indication of the degree to which a module

a) can be written more compactly

b) focuses on just one thing

c) is inaccessible to other modules

d) measures the interconnection among modules in a software structure

13: Data oriented design is useful for systems that

a) process lots of data

b) process intensive systems

c) is used for the large systems that can be modularized

d) uses mathematical notation

14: Formal methods are useful for systems that

a) process lots of data

b) process intensive systems
c) is used for the large systems that can be modularized
d) uses mathematical notation

15: Component based methods are useful for systems that

a) process lots of data
b) process intensive systems
c) is used for the large systems that can be modularized

uses mathematical notation

2) case study fire alarm

- **The owner of a large multi-stored building wants to have a computerized fire alarm system for his building.**
- **Smoke detectors and fire alarms would be placed in each room of the building.**
- **The fire alarm system would monitor the status of these smoke detectors.**
- **The fire alarm system should also flash an alarm message on the computer console. Fire fighting personnel man the console round the clock.**
- **After a fire condition has been successfully handled, the fire alarm system should support resetting the alarms by the fire fighting personnel.**

- The scenario view describes the functionality of the system, i.e., how the user employs the system and how the system provides services to the users.
- It helps designers to discover architecture elements during the design process and to validate the architecture design afterward.
  - The UML use case diagram and other verbal documents
  - The Process View
- The process view focuses on the dynamic aspects of the system, i.e., its execution time behavior.
- This view maps functions, activities, and interactions onto runtime implementation.

- The process view takes care of the concurrency and synchronization issues between subsystems.

- The UML activity diagram and interaction overview diagram support this view.

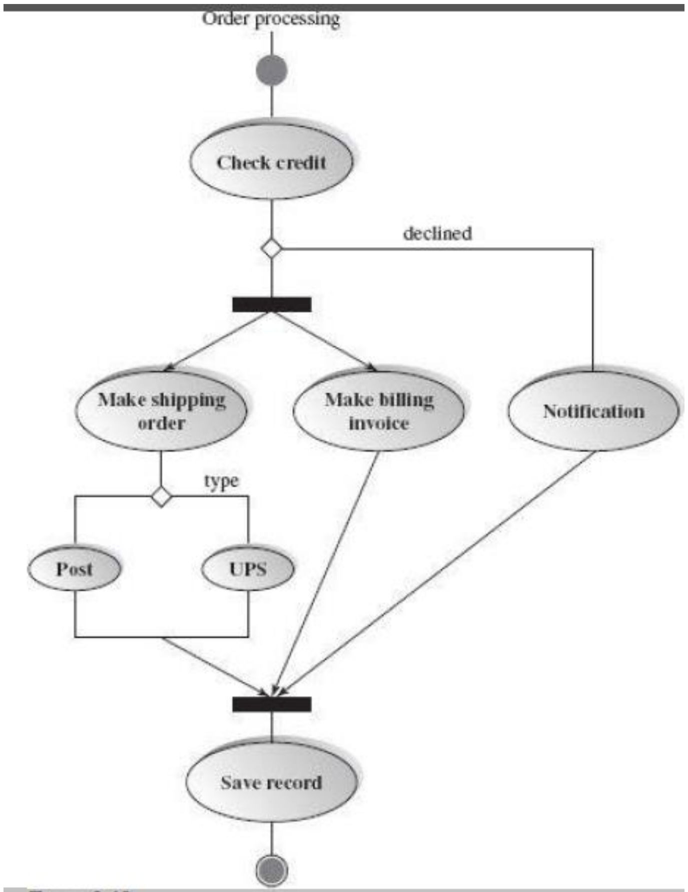

Figure 3.18
Activity diagram in the process view