

Fall 2020 Mid-Term Assignment

Course Name:	Max. Marks:	Max. Duration:	Date:	Instructor:
Software Design & Architecture	30	6 Days	13/4/2020	Aasma Khan

ID: 14646

Name: Abdul Musawer

Question No: 01

MCQs

(1*15=15)

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

Scenario based elements

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

both a and b

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

both a and b

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

a, b and c

5: Which of these are characteristics of a good design

b and c

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

All of above

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

False

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

- True**

9: Reusability of software modules refers to

- that its components can be easily reused in the development of other software systems**

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

- focuses on just one thing**

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

- measures the interconnection among modules in a software structure**

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

- is inaccessible to other modules**

13: Data oriented design is useful for systems that

- process lots of data**

14: Formal methods are useful for systems that

- uses mathematical notation**

15: Component based methods are useful for systems that

- is used for the large systems that can be modularized**

Question No: 02

(5+5+5=15)

Case Study: Fire Alarm

The owner of a large multi-storey 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. Whenever a fire condition is reported by any of the smoke detectors, the fire alarm system should determine the location at which the fire condition is reported by any of the smoke detectors, the fire alarm system should determine the location at which the fire condition has occurred and then sound the alarms only in the neighbouring locations. 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.

□ Identify the functionalities of above fire alarm system.

Ans: The above Fire alarm system is used for the monitoring status of the smoke detectors placed in each room of the building. In short it can be simplified as:

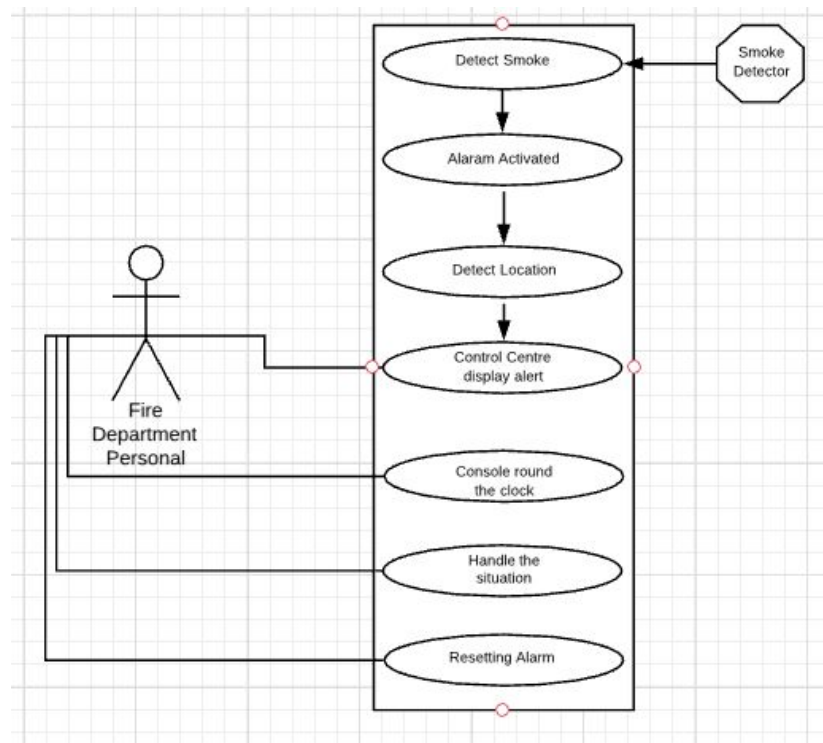
1. Location determination
2. Flashing the message in the main system or control centre.
3. Detects the smoke and switches the alarm when it detects the smoke.
4. Activate the alarm.
5. Firefighting personal to act upon a certain situation.
6. Fire alarm resetting.

□ Describe how the user employs the system and how the system provides services to the users i.e. give a scenario view using a use case diagram.

Ans: DEPLOYMENT:

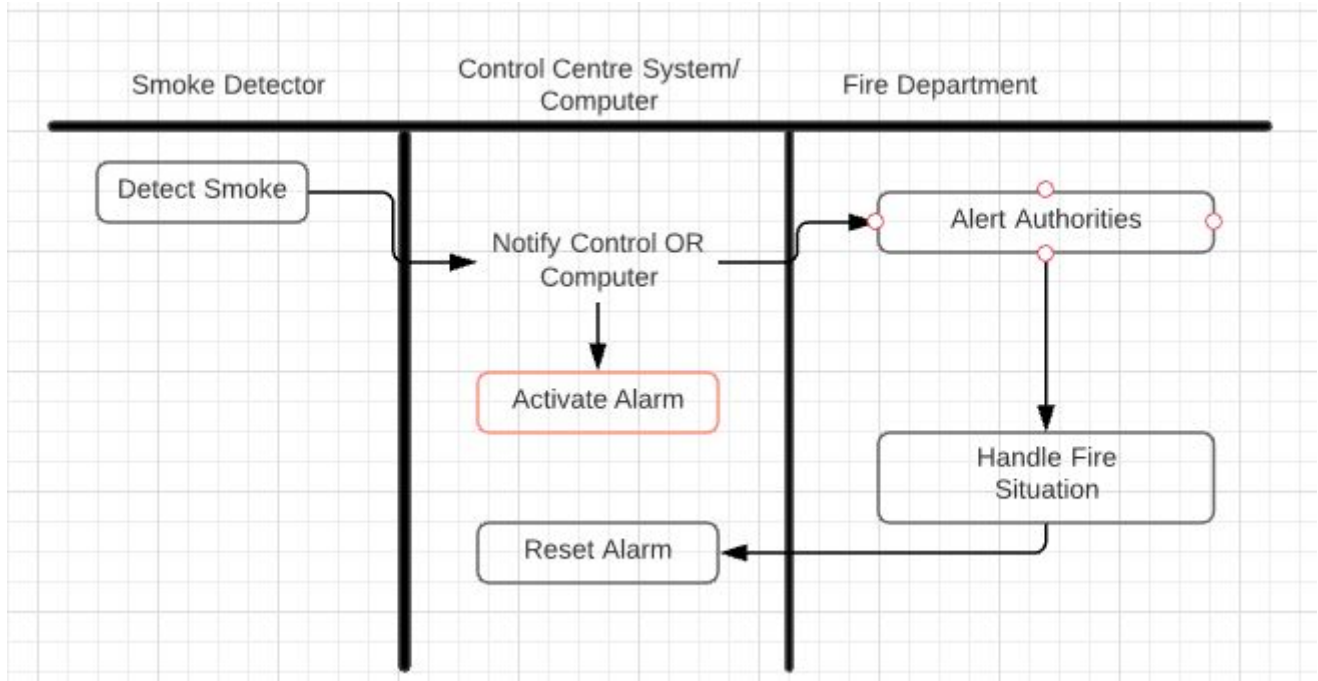
1. We need hardware smoke detections ,wires ,computer systems, and Alarm devices.
2. So we connect all smoke detection devices with central computer by installing the drivers and wires configuration
3. We also connect sound alarm with computer
4. We develop management software for handling the smoke detectors and sound alarm.
5. We also connect the fire fighting console with our system.

USE CASE DIAGRAM:



□ Give a process view of the above scenario using an activity diagram.

Ans: **ACTIVITY DIAGRAM:**



Good Luck