SE 2001: Software Requirements Engineering (B)

Quiz 4

Time: 20 minutes Max Marks: 20 Roll No. _____

Q1. **10 Marks**

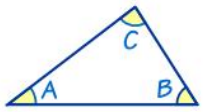
A company is starting a water filters related business. The business intends to provide the households, offices, and educational institutes with a facility to get a water filter installed at their premises, get the filter changed, get the installed filtration plant serviced, report a problem related to the installed filter. Based on the request of the customers of your business, your staff gets the required items issued from the company office, install them at the customer's premises, return the returnable items, and deposit the service/installation/product charges at the company office.

An information system needs to be developed for the business above. The CEO of the business in interested in knowing trends of sales, viewing reports of monthly and weekly profits, viewing pending installation requests, and viewing the list of unresolved complaints. Admin of the system maintains records of all employees and managers. Employees have to sign out required items/equipment before visiting an installation site. The returnable items (such as the tools to service a filter) need to be returned on completion of the task. The sign out and return of the equipment is managed by a Desk Clerk. Your managers record the new installation requests, view the installation requests, send them for CEO's approval, dispatch crews each day to do the required service, and record the payments against each request. The CEO can approve or disapprove an installation request.

To do: Express the requirements of the information system through a use case diagram. Do not use *extend* or *include*.

Q2. **10 Marks**

In a triangle, sum of interior angles is 180°. If A, B, and C are three angles of a triangle as shown in the following figure then A+B+C = 180°.



We need to develop a software system that, as a subtask, requires to determine if the values entered as input by the user will form a triangle or not. The software also determines the type of the triangle if the input values form a triangle.

The three input values A, B, and C are integer values. Based on the inputs, the system outputs the type of the triangle. In order to form a triangle, the angles A, B, and C must meet the constraint A+B+C = 180°. The system generates the output as follows:

1. If sum of all angles is other than 180° then output **Not A Triangle**
2. If all angles are equal then output **Equilateral**
3. If 2 angles are equal then output **Isosceles**
4. If no angles are equal then output **Scalene**

To do: Provide a complete decision table that models the information provided above. Each condition must be expressed in terms of one or more input values (i.e. A, B, C) only. [Hint: Most of these conditions shall be simple (not compound).]