EENG 224 Flowcharts and Coding

QUESTION 1

Write an algorithm which allows the user to work out the cost of covering the floor of a house with tiles. Data is supplied as follows:

a) The number of rooms in the house
b) For each room:
    I. The size (length and width) and the unit cost of the tiles to be used in the room
    II. The length and breadth of the room

For each room, calculate and display the number of tiles required as well as the cost of the tiles.

At the end, print the total cost of the tiles required for the house.

Implement your algorithm as a PASCAL program.

QUESTION 2

A carpenter wants an application to compute the price of any desk a customer orders, based on the following: desk length and width in cm, type of wood, and number of drawers.

The price is computed as follows:
• The minimum charge for all desks is $200.
• If the surface (length * width) is over 750 square inches, add $50.
• If the wood is mahogany, add $150; for oak, add $125. No charge is added for pine.
• For every drawer in the desk, there is an additional $30 charge.
Design a flowchart for a program to do the following:
    a. accepts data for an order number, customer name, length and width of the desk, type of wood, and number of drawers. Display all the entered data and the final price for the desk.
    b. continuously accepts desk order data and displays the number of each oak, mahogany and pine desks ordered.
Implement your flowchart as a PASCAL program.

QUESTION 3

Draw a flowchart for a program that lets an architect or draftsman calculate the size in square feet of any building. At the end when the size of the building is calculated, the program should also calculate the cost to construct the building and display the size and the cost.

The architect/draftsman should first enter the number of rooms and the cost of construction for each square foot of the building.

The architect/draftsman then enters a list of dimensions (lengths and widths) for each room.

Assume that all dimensions are in feet.

Sample Run:

```
Enter Number of Rooms: 3
Enter Price Per Square Foot: 200.00
Enter Length of Room 1: 10
Enter Width of Room 1: 10
Enter Length of Room 2: 15
Enter Width of Room 2: 10
Enter Length of Room 3: 12
Enter Width of Room 3: 12

Size of building: 394 square feet
Total Cost: $ 78800.00
```

Implement your flowchart as a PASCAL program.

PROGRAMMING EXERCISE

Design an algorithm, using a flowchart that reads in a series of 10 **angles** in radians(one at a time). The

algorithm should convert the angle to degrees calculate and display the **total** of the 10 angles (in

degrees), the **average(mean)** of the 10 angles (in degrees) and the amounts of angles in each quadrant,

based on the following.

Angle in degrees	Quadrant
0-90	First
90-180	Second
180-270	Third
270-360	Fourth

Implement your solution as a PASCAL program.