BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE – PILANI
K.K. BIRLA GOA CAMPUS
Computer Programming (CS F111)
Second Semester 2017 - 18
Lab#5: 19/02/2018, Monday (printf, scanf, if-else)
Section 1, 2, and 3

Question#1: Write a C program to calculate the interest on a car/house loan using only **if-else** statements (Do not use switch-case statements). The program should ask for the following details at the runtime:

- Whether the loan is for a car or a house;
  Input should be: 'C' for CAR and 'H' for HOUSE
- Customer Age
- Loan Amount (In INR)
- Load Duration (In Years)
- Rate of Interest (% yearly)

Use the following formula to calculate the interest
Interest = Loan Amount * Rate of Interest * Loan Duration /100

Additionally, the following conditions must be satisfied while calculating the interest:
If customer age is less than 25 AND loan is taken for a house then the rate of interest is 1% lesser.

Display the following details as output:
Loan Type (CAR/HOUSE), Customer Age, Loan Amount, Loan Duration, Rate of Interest, Interest.

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Second Semester 2017 - 18
Lab#5: 20/02/2018, Tuesday (printf, scanf, if-else)
Section 4, 5, and 6

Question#1: Write a C program to calculate the electricity bill for the current month using only **if-else** statements (Do not use switch-case statements). The program should accept the following details at the runtime:

- Whether the customer is an electricity board employee?
  Input should be: 'Y' for YES and 'N' for NO
- Electricity unit consumed
- Price per unit (In INR)
- Previous month's due (In INR)

Additionally, the following conditions must be satisfied while calculating the bill:
If previous month's due is greater than or equals to Rs.100 AND customer is an electricity board employee then previous month's dues should be added in the current month's bill plus 10% of the last month's dues as late payment charge.

Use the following formula to calculate the bill
Total Bill = (Electricity unit consumed * Price per unit) + (Previous month's due * 1.10)

Display the following details as output:
Electricity Board Employee (YES/NO), Unit Consumed, Price Per Unit, Previous Month's Due, Total Bill.

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Lab#5: 21/02/2018, Wednesday (printf, scanf, if-else)
Section 7, 8, and 9

Question#1: Write a C program which takes three 2-dimentional points as input and calculates whether or not these points are collinear (falls on the same line). Three numbers (x1, y1) (x2, y2) and (x3, y3) are colliner if the slopes of lines connecting any two pairs of points are equal i.e.,

$$(y2-y1)/(x2-x1) == (y3-y2)/(x3-x2)$$

You also need to check for an exception which occurs if all these points fall on the Y-axis. If x1, x2, and x3 are equal to 0, then the points are collinear and there is no need to check for slopes.

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Second Semester 2017 - 18
Lab#5: 22/02/2018, Thursday (printf, scanf, if-else)
Section 10, 11, and 12

Question#1: Calculate the LPG subsidy for a customer using a C program. The program should accept the following information at the runtime.

- Number of cylinders delivered in the current year
- Cost per cylinder
- Subsidy percentage
- Employee Subsidy Applicable or not;

Input should be: 'Y' for YES and 'N' for NO

Additionally, the following conditions must be satisfied while calculating the subsidy:
If Employee Subsidy is applicable OR cost per cylinder is more than Rs 800, then the subsidy is given for 16 cylinders else subsidy is given for 12 cylinders.

Use the following formula to calculate the subsidy
Total Subsidy = Number of cylinders with subsidy * Cost per cylinder * Subsidy percentage/100

Display the following details as output:
No. of Cylinder Delivered, Cost Per Cylinder, Subsidy Percentage, Employee Subsidy (YES/NO), Total Subsidy.