

### Practice Lab Assignment 3

### Practice Lab Assignment 3

For this Practice Lab Assignment, you will write programs in C, **making use of various operators, if else control structures only.**

**Do not use arrays and any other concept that has not been yet taught in the class.**

#### Instructions

- There are 11 questions in this assignment.
- Any discussion with neighbor/or any other student is strictly not allowed.
- Mobile phones are not allowed. If found, disciplinary action may be taken.

**Due Date: This is only a Practice Lab so no submission is required.**

#### Grading Criteria

No Grading Criteria.

#### Programming Questions

1. Write a program to check whether a year entered by the user is a leap year or not. (Make use of % operator).
2. Using conditional operator, determine:
  - (a) Whether the character entered through the keyboard is a lower case alphabet or not.
  - (b) Whether the character entered through the keyboard is a special symbol or not.
3. Write a Program to input week number and print week day.
4. Write a C program to input month number and print number of days in that month.
5. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:  
Percentage  $\geq 90\%$  : Grade A  
Percentage  $\geq 80\%$  : Grade B  
Percentage  $\geq 70\%$  : Grade C  
Percentage  $\geq 60\%$  : Grade D

- Percentage  $\geq 40\%$  : Grade E  
Percentage  $< 40\%$  : Grade F
6. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:  
Basic Salary  $\leq 10000$  : HRA = 20%, DA = 80%  
Basic Salary  $\leq 20000$  : HRA = 25%, DA = 90%  
Basic Salary  $> 20000$  : HRA = 30%, DA = 95%
  7. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition:  
For first 50 units Rs. 0.50/unit  
For next 100 units Rs. 0.75/unit  
For next 100 units Rs. 1.20/unit  
For unit above 250 Rs. 1.50/unit  
An additional surcharge of 20% is added to the bill.
  8. A company insures its drivers in the following cases:
    - If the driver is married.
    - If the driver is unmarried, male & above 30 years of age.
    - If the driver is unmarried, female & above 25 years of age.

In all other cases the driver is not insured. If the marital status, gender and age of the driver are the inputs, write a program to determine whether the driver is to be insured or not.

9. Find the absolute value of a number entered through the keyboard.
10. An Insurance company follows following rules to calculate premium.
  - (1) If a person's health is excellent and the person is between 25 and 35 years of age and lives in a city and is a male then the premium is Rs. 4 per thousand and his policy amount cannot exceed Rs. 2 lakhs.
  - (2) If a person satisfies all the above conditions except that the gender is female, then the premium is Rs. 3 per thousand and her policy amount cannot exceed Rs. 1 lakh.
  - (3) If a person's health is poor and the person is between 25 and 35 years of age and lives in a village and is a male, then the premium is Rs. 6 per thousand and his policy cannot exceed Rs. 10,000.
  - (4) In all other cases, the person is not insured.

Write a program to output whether the person should be insured or not, his/her premium rate and maximum amount for which he/she can be insured.

11. A library charges a fine for every book returned late. For first 5 days, the fine is 50 paise, for 6-10 days, fine is one rupee and above 10 days, fine is 5 rupees. If you return the book after 30 days your membership will be cancelled. Write a

program to accept the number of days the member is late to return the book and display the fine or the appropriate message.