Course: Programming for Problem Solving Code: ECSP101

LIST OF EXPERIMENT (FIRST YEAR) Session: 2023-24

2) To Study and Demonstrate Decision Control Structures.

a. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle.

```
#include<stdio.h>
int main(){
  int side1, side2, side3;
  printf("Enter sides of triangle:");
  scanf("%d%d%d",&side1,&side2,&side3);
  if(side1 == side2 && side2 == side3)
    printf("The Given Triangle is equilateral
");
  else if(side1 == side2 || side2 == side3 || side3 == side1)
    printf("The given Triangle is isosceles
");
  else
    printf("The given Triangle is scalene
");
  return 0;
}
```

b. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:
Percentage >= 90% : Grade A
Percentage >= 80% : Grade B
Percentage >= 70% : Grade C
Percentage >= 60% : Grade D
Percentage >= 40% : Grade E
Percentage < 40% : Grade F

```
#include <stdio.h>

int main()
{
    int phy, chem, bio, math, comp;
    float per;
```

```c
    /* Input marks of five subjects from user */
    printf("Enter five subjects marks: ");
    scanf("%d%d%d%d%d", &phy, &chem, &bio, &math, &comp);


    /* Calculate percentage */
    per = (phy + chem + bio + math + comp) / 5.0;

    printf("Percentage = %.2f\n", per);


    /* Find grade according to the percentage */
    if(per >= 90)
    {
        printf("Grade A");
    }
    else if(per >= 80)
    {
        printf("Grade B");
    }
    else if(per >= 70)
    {
        printf("Grade C");
    }
    else if(per >= 60)
    {
        printf("Grade D");
    }
    else if(per >= 40)
    {
        printf("Grade E");
    }
    else
    {
        printf("Grade F");
    }

    return 0;
```

c. Write a C program to check whether entered character is digits, special symbol or alphabet and if alphabet whether it is vowel or consonant.

```c
#include <stdio.h>


int main()
{
    char ch;


    /* Input character from user */
    printf("Enter any character: ");
    scanf("%c", &ch);


    /* Alphabet check */
    if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
```

```
    {
        printf("'%c' is alphabet.", ch);
        if (ch == ‘a’|| ch == ‘e’|| ch == ‘i’|| ch == ‘o’|| ch == ‘u’|| ch == ‘A’|| ch ==
       ‘E’|| ch == ‘I’|| ch == ‘O’|| ch == ‘U’)
        printf("'%c' is Vowel.", ch);
        else
        printf("'%c' is consonent", ch);

    }
    else if(ch >= '0' && ch <= '9')
    {
        printf("'%c' is digit.", ch);
    }
    else
    {
        printf("'%c' is special character.", ch);
    }

    return 0;
}
```

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