

Assignment - 3

Decision control statements

1. Write a program to check whether a given number is positive or non-positive.

#include <stdio.h>

```
int main() {  
    int num;  
    printf("Enter a number");  
    scanf("%d", &num);  
    if (a > 0)  
        printf("Positive");  
    if (a <= 0)  
        printf("Non positive");  
    return 0; }
```

2. Write a program to check whether a given number is divisible by 5 or not.

#include <stdio.h>

```
int main() {  
    int num;  
    printf("Enter a number\n");  
    scanf("%d", &num);  
    if (num % 5 == 0)  
        printf("%d is divisible by 5", num);  
    else  
        printf("%d is not divisible by 5", num);  
    return 0; }
```

3. Write a program to check whether a given number is an even number or an odd number without using % operator.

Q1 #include <stdio.h>
int main () {
int num;
printf ("Enter a number\n");
scanf ("%d", &num);
if (num % 2 == 0)
printf ("Even ");
else
printf ("Odd ");
return 0;

4. Write a program to check whether a given number is
a three-digit number or not.

Q2 #include <stdio.h>
int main () {
int num;
printf ("Enter a number\n");
scanf ("%d", &num);
if (num > 99)
printf ("%d is three digit number", num);
else
printf ("%d is not three digit number", num);
return 0; }

5 Write a program to check whether a given number
is an even number or an odd number without
using % operator.

Q3 Assignment 2 Question no. 8

6. Write a program to print greater between two numbers. Print one number if both are the same.

```
#include <stdio.h>
int main() {
    int num1, num2;
    printf("Enter two numbers\n");
    scanf("%d %d", &num1, &num2);
    if (num1 > num2)
        printf("%d is num1, num1 is greater than num2", num1);
    else if (num1 == num2)
        printf("%d both are same", num1);
    else
        printf("%d is num2 is greater than num1", num2);
    return 0;
}
```

7. Write a program to check whether roots of a given quadratic equation are real & distinct, real & equal or imaginary roots.

```
#include <stdio.h>
int main() {
    int a, b, c, D;
    float x, y;
    printf("Enter coefficient of x^2, x and constant term");
    scanf("%d %d %d", &a, &b, &c);
    D = b * b - 4 * a * c;
    if (D < 0)
        printf("Both roots are imaginary");
    if (D == 0)
        printf("Both roots are equal");
    x = -b / (2 * a);
    printf("Root is %f", x);
}
```

```
if(D > 0){  
    printf ("Roots are real and distinct");  
    x = (- b + sqrt(D)) / (2 * a);  
    y = (- b - sqrt(D)) / (2 * a);  
    printf ("The Roots are : %f, %f", x, y);  
}  
return 0; }
```

8. Write a program to check whether a given year is a leap year or not.

```
#include <stdio.h>  
int main () {  
    int year;  
    printf ("Enter a number");  
    scanf ("%d", &year);  
    if (year % 4)  
        printf ("Not a leap year");  
    else if (year % 100)  
        printf ("Leap year");  
    else if (year % 400)  
        printf ("Not a leap year");  
    else  
        printf ("Leap year");  
    return 0;
```

9. Write a program to find the greatest among three given numbers. Print number once if the greatest number appears two or three times.

~ #include <stdio.h>

~ int main() {

int A, B, C;

printf ("Enter three numbers ");

scanf ("%d %d %d", &A, &B, &C);

if (A >= B) {

if (A >= C)

printf ("%d is the largest number ", A);

else

printf ("%d is the largest number ", C);

}

else {

if (B >= C)

printf ("%d is the largest number ", B);

else

printf ("%d is the largest number ", C);

}

return 0; }

10.) Write a program which takes the cost price and selling price of a product from the user.

Now calculate and print profit or loss percentage

~ #include <stdio.h>

int main() {

float cost, sell, res = 0;

printf ("Enter the amount of cost and sell \n");

scanf ("%f %f", &cost, &sell);

res = cost < sell ? sell - cost : cost - sell;

~~#if float~~ if (cost < sell)

printf ("Cost price is %f and sell price is %f and
profit is %f", cost, sell, res);

Else

```
printf("cost price is %f and sell price is %f and loss  

       is %f", cost, sell, res);  

return 0; }
```

- 11) Write a program to take mark of 5 subjects from the user. Assume marks are given out of 100 and passing marks is 33. Now display whether the candidate passed the examination or failed.

include <stdio.h>

```
int main () {  

    float S1, S2, S3, S4, S5, res;  

    printf ("Enter the mark out of 100 \n");  

    printf ("Enter the marks of S1 \n");  

    scanf ("%f", &S1);  

    printf ("Enter the mark of S2 ");  

    scanf ("%f", &S2);  

    printf ("Enter the mark of S3 ");  

    scanf ("%f", &S3);  

    printf ("Enter the mark of S4 ");  

    scanf ("%f", &S4);  

    printf ("Enter the mark of S5 ");  

    scanf ("%f", &S5);  

    res = S1 + S2 + S3 + S4 + S5;
```

res ≥ 165 ? printf ("You are passed"); printf ("You are failed");
return 0;

12. Write a program to check whether a given alphabet is in uppercase or lowercase

~> #include <stdio.h>
int main() {
 char ch;
 printf("Enter a alphabet\n");
 scanf("%c", &ch);
 if (ch >= 65 && ch < 90)
 printf("%c is uppercase alphabet", ch);
 else
 printf("%c is lowercase alphabet", ch);
 return 0; }

13. Write a program to check whether a given number is divisible by 3 and divisible by 2.

~> #include <stdio.h>

```
int main()  
{ int num;  
    printf("Enter a number\n");  
    scanf("%d", &num);  
    if (num % 2 == 0 && num % 3 == 0)  
        printf("%d is divisible by 2 and 3", num);  
    else  
        printf("%d is not divisible by 2 and 3", num);  
    return 0;  
}
```

14. Write a program to check whether a given number is divisible by 7 or divisible by 3.
Similar to the question no. 13

15. Write a program to check whether a given number is positive, negative or zero.

```
#include <stdio.h>
int main()
{
    int num;
    printf("Enter a number\n");
    scanf("%d", &num);
    if (num > 0)
        printf("%d is Positive", num);
    else if (num == 0)
        printf("%d is zero", num);
    else
        printf("%d is Negative", num);
    return 0;
}
```

16. Write a program to check whether a given character is an alphabet (uppercase), an alphabet (lowercase), a digit or a special character.

```
#include <stdio.h>
int main()
{
    char ch;
    printf("Enter a key");
    scanf("%c", &ch);
    if (ch >= 65 && ch <= 90)
        printf("%c is uppercase alphabet", ch);
    else if (ch >= 97 && ch <= 122)
        printf("%c is lowercase alphabet", ch);
    else
        printf("A digit or a special character");
    return 0;
}
```

17. Write a program which take the length of the sides of a triangle as an input. Display whether the triangle is valid or not.

Q) `#include <stdio.h>`

```
int main() {
    int side1, side2, side3, res;
    printf("Enter the sides of triangle\n");
    scanf("%d %d %d", &side1, &side2, &side3);
    res = side1 + side2 + side3;
    res == 180 ? printf("Triangle is valid") : print("Triangle is not valid");
    return 0;
}
```

18 Write a program which takes the month number as an input and display number of day in that month.

Q) `#include <stdio.h>`

```
int main() {
    int month;
    printf("Enter the month number");
    scanf("%d", &month);
    switch(month) {
        case 1:
            printf("31");
            break;
        case 2:
            printf("28");
            break;
        case 3:
            printf("31");
            break;
        case 4:
            printf("30");
            break;
        . . .
        case 12:
            printf("31");
            break;
    }
}
```