1Program to read a number from the users from 1 to 7 and print it's corresponding week day. if user entered any other number rather than 1 to 7 print any message accordingly.

```c
#include <stdio.h>

int main()

{

    int week;/* Input week number from user */

    printf("Enter week number (1-7): ");
    scanf("%d", &week);


    if(week == 1)
    {
        printf("Monday");
    }
    else if(week == 2)
    {
        printf("Tuesday");
    }
    else if(week == 3)
    {
        printf("Wednesday");
    }
    else if(week == 4)
    {
        printf("Thursday");
    }
    else if(week == 5)
    {
        printf("Friday");
    }
    else if(week == 6)
    {
        printf("Saturday");
    }
    else if(week == 7)
    {
        printf("Sunday");
    }
    else
    {
        printf("Invalid Input! Please enter week number between 1-7.");
    }

    return 0;
}
```

2. Program to read three variable x, y and z. Use conditional statements and evaluate values of variables a, b and c. Perform the sum with two sets of variables. Check the sum for equality and print different messages.

Ans

```c
#include<stdio.h>

#include<conio.h>
main()
{
    int x,y,z,a,b,c,m,n;
```

```
    printf("Enter values of x,y,z:- ");
    scanf("%d %d %d", &x,&y,&z);
    a=(x>=5 ? 3 : 4);
    printf("\n Calculated value of a is:-%d",a);
    b=(y<=8 ? 10 : 9);
    printf("\n Calulated value of b is:-%d",b);
    c=(z==10 ? 20 : 30);
    printf("\n Calulated value of c is:-%d",c);
    m=x+y+z;
    n=a+b+c;
    printf("\n Addition of x,y,z is %d (m)",m);
    printf("\n Addition of a,b,c is %d (m)",n);
    printf("\n %s", m!=n ? "m & n not equal" : "m & n are equal");
    getch();

}
```

3. Program to read a number from the user and calculate the factorial of a give number.

```
Ans. #include <stdio.h>


int main()
{
    int i, num;
    unsigned long long fact=1LL;


    /* Input number from user */
    printf("Enter any number to calculate factorial: ");
    scanf("%d", &num);

    /* Run loop from 1 to num */
    for(i=1; i<=num; i++)
    {
        fact = fact * i;
    }

    printf("Factorial of %d = %llu", num, fact);

    return 0;
}
```

4. Program to read the values of a, b and c through the keyboard. Add them and after addition check if it is in the range of 100 and 200 or not. Print the separate message for each.

```
#include <stdio.h>

int main() {

   int a, b, c;

 printf("Enter the value of a: ");

   scanf("%d", &a);
```

```
   printf("Enter the value of b: ");
   scanf("%d", &b);
 printf("Enter the value of c: ");
   scanf("%d", &c);
    int sum = a + b + c;
     if (sum >= 100 && sum <= 200) {
       printf("The sum is in the range of 100 and 200.\n");
   } else {
       printf("The sum is not in the range of 100 and 200.\n");
   }
    return 0;
}
```

5. Program to find the total amount when there are five notes of Rs. 100, three notes of Rs. 50 and 20 notes of Rs.20.

```
#include <stdio.h>
int main() {
   int num_100_notes = 5;
   int num_50_notes = 3;
   int num_20_notes = 20;

   int total_amount = (num_100_notes * 100) + (num_50_notes * 50) + (num_20_notes * 20);

   printf("The total amount is Rs. %d\n", total_amount);
   return 0;
}
```

6. Program to check if a number is Armstrong or not using a while loop.

```
#include <stdio.h>
int main() {
   int number, originalNumber, remainder, result = 0;
    printf("Enter a number: ");
```

```
    scanf("%d", &number);
    originalNumber = number;
     while (originalNumber != 0) {
        remainder = originalNumber % 10;
        result += remainder * remainder * remainder;
        originalNumber /= 10;
    }
     if (result == number) {
        printf("%d is an Armstrong number.\n", number);
    } else {
        printf("%d is not an Armstrong number.\n", number);
    }
      return 0;
}
```

7. Program to print the Fibonacci sequence using for loop.

```
#include <stdio.h>
int main() {
    int n, firstTerm = 0, secondTerm = 1, nextTerm;
     printf("Enter the number of terms: ");
    scanf("%d", &n);

    printf("Fibonacci Sequence: ");

    for (int i = 1; i <= n; ++i) {
        printf("%d, ", firstTerm);
        nextTerm = firstTerm + secondTerm;
        firstTerm = secondTerm;
        secondTerm = nextTerm;
    }

    return 0;
```

```
}
```

8 Program to read a and b values from the user and swap those two numbers by using Call by value method.

```
#include <stdio.h>


void swap(int x, int y) {
   int temp;
   temp = x;
   x = y;
   y = temp;
}
int main() {
   int a, b;
   printf("Enter the value of a: ");
   scanf("%d", &a);
   printf("Enter the value of b: ");
   scanf("%d", &b);
   printf("Before swapping: a = %d, b = %d\n", a, b);
   swap(a, b);
   printf("After swapping: a = %d, b = %d\n", a, b);
   return 0;
}
```

9. Program to find the Euclidean distance between two points in a plane.

```
 #include <stdio.h>
#include <math.h>
int main() {
   double x1, y1, x2, y2, distance;
   printf("Enter the coordinates of the first point (x1, y1): ");
   scanf("%lf %lf", &x1, &y1);
    printf("Enter the coordinates of the second point (x2, y2): ");
   scanf("%lf %lf", &x2, &y2);
```

```
    distance = sqrt(pow(x2 - x1, 2) + pow(y2 - y1, 2));
     printf("The Euclidean distance between the two points is: %.2lf\n", distance);
     return 0;
}
```

10. Program to read a string from the user and check whether a given string is a palindrome or not.

```
#include <stdio.h>
#include <string.h>

int main() {
    char str[100];
    int i, j, isPalindrome = 1;

    printf("Enter a string: ");
    scanf("%s", str);

    int length = strlen(str);

    for (i = 0, j = length - 1; i < length / 2; i++, j--) {
        if (str[i] != str[j]) {
            isPalindrome = 0;
            break;
        }
    }

    if (isPalindrome) {
        printf("%s is a palindrome.\n", str);
    } else {
        printf("%s is not a palindrome.\n", str);
    }

    return 0;
```

```
}
```

11. Program to calculate energy bill. Read the starting and ending meter readings. The charges are as follows. No.of units Consumed rate in Rs. >500 200-500 100-200

```
#include <stdio.h>

int main() {
   int startReading, endReading, units;
   float rate, billAmount;
    printf("Enter the starting meter reading: ");
   scanf("%d", &startReading);
     printf("Enter the ending meter reading: ");
   scanf("%d", &endReading);


   units = endReading - startReading;
    if (units > 500) {
      rate = 4.50;
   } else if (units >= 200 && units <= 500) {
      rate = 3.50;
   } else if (units >= 100 && units < 200) {
      rate = 2.50;
   } else {
      rate = 1.50;
   }
    billAmount = units * rate;
    printf("The energy bill amount is: %.2f Rs.\n", billAmount);
   return 0;
}
```

12. Program to check whether the blood donor is eligible or not for donating blood. The conditions laid down are as under. Use if statement. • Age should be greater than 18 years but not more than 55 years. • Weight should be more than 45 kg.

```
#include <stdio.h>


int main() {
```

```
    int age;
    float weight;
    printf("Enter the age of the blood donor: ");
    scanf("%d", &age);
    printf("Enter the weight of the blood donor: ");
    scanf("%f", &weight);
    if (age > 18 && age <= 55 && weight > 45) {
        printf("The blood donor is eligible for donating blood.\n");
    } else {
        printf("The blood donor is not eligible for donating blood.\n");
    }
     return 0;
}
```

13. Program to enter two numbers from the user. Make a comparison between two numbers by using conditional operator. If the first number is greater than the second number, perform multiplication otherwise division operation.

```
#include <stdio.h>
int main() {
    int num1, num2, result;
    printf("Enter the first number: ");
    scanf("%d", &num1);
    printf("Enter the second number: ");
    scanf("%d", &num2);
    result = (num1 > num2) ? (num1 * num2) : (num1 / num2);
     printf("The result is: %d\n", result);
    return 0;
}
```

14. Program to check weather the voter is eligible for voting or not . If his/her age is equal to or greater than 18, then display message ‘Eligible’ otherwise ‘Not eligible’.

```
#include <stdio.h>
int main() {
    int age;
```

```
    printf("Enter your age: ");
    scanf("%d", &age);
    if (age >= 18) {
        printf("You are eligible to vote!\n");
    } else {
        printf("You are not eligible to vote yet.\n");
    }

    return 0;
}
```

15. Program to enter a character from the user. Use switch() case. Structure and print appropriate message. Recognise the character whether it is vowel, consonants or symbols.

```
#include <stdio.h>
int main() {
    char ch;
    printf("Enter a character: ");
    scanf(" %c", &ch);
    switch (ch) {
        case 'a':
        case 'e':
        case 'i':
        case 'o':
        case 'u':
        case 'A':
        case 'E':
        case 'I':
        case 'O':
        case 'U':
            printf("The character '%c' is a vowel.\n", ch);
            break;
        default:
```

```
        if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')) {
            printf("The character '%c' is a consonant.\n", ch);
        } else {
            printf("The character '%c' is a symbol.\n", ch);
        }
    }

    return 0;
}
```

16. Write a program to read gender in a single character like 'M', ’m’ or 'F', ‘f’ and print its corresponding complete word "Male" or "Female" using a switch case statement.

```
#include <stdio.h>
int main() {
    char gender;
    printf("Enter your gender (M/F): ");
    scanf(" %c", &gender);
    switch (gender) {
        case 'M':
        case 'm':
            printf("You are Male.\n");
            break;
        case 'F':
        case 'f':
            printf("You are Female.\n");
            break;
        default:
            printf("Invalid gender.\n");
    }

    return 0;
}
```

17. Write a program to calculate the total interest based on the following condition Principle amount (Rs.) Rate of interest (Rs.) >=10000 >=8000&&<=9999 < 8000 20% 18% 16% Ask user to Enter loan Amount and tenure Print the loan amount taken, tenure to clear the loan amount, rate of interest and print interest amount

```
#include <stdio.h>

int main() {

   float principleAmount, rateOfInterest, interestAmount;

   int tenure;

    printf("Enter the loan amount: ");

   scanf("%f", &principleAmount);

   printf("Enter the tenure (in years): ");

   scanf("%d", &tenure);

     if (principleAmount >= 10000) {

       rateOfInterest = 0.2;

   } else if (principleAmount >= 8000 && principleAmount <= 9999) {

       rateOfInterest = 0.18;

   } else {

       rateOfInterest = 0.16;

   }

    interestAmount = principleAmount * rateOfInterest * tenure;

     printf("Loan amount: Rs. %.2f\n", principleAmount);

   printf("Tenure: %d years\n", tenure);

   printf("Rate of interest: %.2f%%\n", rateOfInterest * 100);

   printf("Interest amount: Rs. %.2f\n", interestAmount);

    return 0;

}
```

18. Write a program to enter n value from the user and read values from 1 to n from the user and count the positive and negative numbers from 1 to n. Print no.of positive numbers and no. of negative numbers among the n numbers.

```
#include <stdio.h>

int main() {

   int n, num, positiveCount = 0, negativeCount = 0;
```

```
    printf("Hey there! Please enter the value of n: ");
    scanf("%d", &n);
    for (int i = 1; i <= n; i++) {
        printf("Enter number %d: ", i);
        scanf("%d", &num);
        if (num > 0) {
            positiveCount++;
        } else if (num < 0) {
            negativeCount++;
        }
    }
    printf("The number of positive numbers among the %d numbers is: %d\n", n, positiveCount);
    printf("The number of negative numbers among the %d numbers is: %d\n", n, negativeCount);
    return 0;
}
```

19. Program to create a calculator, take x, y values from the user to perform the mathematical operation for both x and y values according to the users choice.

Q19

```
#include <stdio.h>
int main() {
    float x, y, result;
    int choice;
    printf("Hey there! Let's perform some calculations!\n");
    printf("Enter the value of x: ");
    scanf("%f", &x);
    printf("Enter the value of y: ");
    scanf("%f", &y);
    printf("Choose the operation you want to perform:\n");
    printf("1. Addition\n");
    printf("2. Subtraction\n");
    printf("3. Multiplication\n");
```

```
    printf("4. Division\n");
    printf("Enter your choice (1-4): ");
    scanf("%d", &choice);
     switch (choice) {
        case 1:
            result = x + y;
            printf("The sum of %.2f and %.2f is: %.2f\n", x, y, result);
            break;
        case 2:
            result = x - y;
            printf("The difference between %.2f and %.2f is: %.2f\n", x, y, result);
            break;
        case 3:
            result = x * y;
            printf("The product of %.2f and %.2f is: %.2f\n", x, y, result);
            break;
        case 4:
            if (y != 0) {
                result = x / y;
                printf("The division of %.2f by %.2f is: %.2f\n", x, y, result);
            } else {
                printf("Error: Division by zero is not allowed!\n");
            }
            break;
        default:
            printf("Invalid choice! Please choose a number between 1 and 4.\n");
            break;
    }

    return 0;
}
```

20. Program to read any one value for x which is more than three digits from the user and print the given number in reversed order.

```
#include <stdio.h>

int main() {

   int x, reversed = 0, remainder;

    printf("Hey there! Let's reverse a number!\n");

    printf("Enter a number greater than three digits: ");

   scanf("%d", &x);

   while (x != 0) {

      remainder = x % 10;

      reversed = reversed * 10 + remainder;

      x = x / 10;

   }


   printf("The reverse of the given number is: %d\n", reversed);


   return 0;

}
```