WAP to check whether a number is positive

```
#include<stdio.h>
int main(){
   int num;
   printf("Enter an integer: ");
   scanf("%d",&num);
   if(num>0)
      printf("%d is a positive number\n",num);
   printf("The program execution is over");
   return 0;
}
```

//WAP to check whether a number is even. Program will ask for user input

```
#include<stdio.h>
int main(){
   int num;
   printf("Enter a number: ");
   scanf("%d",&num);
   if(num%2==0){
      printf("Number is even");
   }
   printf("Program execution is over");
   return 0;
}
```

ASSIGNMENTS

1.WAP to check for a valid triangle.

```
#include<stdio.h>
int main(){
   int a,b,c;
   printf("Enter the length of side1: ");
   scanf("%d",&a);
```

```
    printf("Enter the length of side2: ");
    scanf("%d",&b);
    printf("Enter the length of side3: ");
    scanf("%d",&c);
    if(a+b>c&&b+c>a&&a+c>b){
        printf("It is a valid triangle\n");
    }
    printf("Program execution is over");
    return 0;
}
```

2.WAP to check if a character is an alphabet

```
#include<stdio.h>
int main(){
    char ch;
    printf("Enter a character: ");
    scanf("%c",&ch);
    if((ch >= 'A'||ch <= 'Z')&&(ch >='a'||ch <= 'z')){
        printf("Entered character is an alphabet\n");
    }
    printf("Program execution is over");
    return 0;
}
```

3.WAP to check if a year is a leap year or not

```
#include<stdio.h>
int main(){
    int year;
    printf("Enter the year: ");
    scanf("%d",&year);
    if((year%400==0)||(year%4==0&&year%100!=0)){
        printf("It is a leap year\n");
    }
```

```
    printf("Program execution is over");
    return 0;
}
```

4. WAP to check if a number is divisible by 3.

```
#include<stdio.h>
int main(){
    int num;
    printf("Enter a number: ");
    scanf("%d",&num);
    if(num%3==0){
        printf("Number is divisible by 3\n");
    }
    printf("Program execution is over");
    return 0;
}
```

5.WAP to check for uppercase characters.

```
#include<stdio.h>
int main(){
    char ch;
    printf("Enter a character: ");
    scanf("%c",&ch);
    if(ch >= 'A'&&ch <= 'Z'){
        printf("It is an uppercase character\n");
    }
    printf("Program execution is over");
    return 0;
}
```

6.WAP to check for special characters

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

```
    printf("Enter a character: ");
    scanf("%c",&ch);
    if((ch >= 33 && ch <= 47)||(ch >= 58 && ch <= 64)){
        printf("It is a special character\n");
    }
    printf("Program execution is over");
    return 0;
}
```

//WAP to check the sign of a value

```
#include<stdio.h>
int main(){
    int num,sign;
    printf("Enter the value for num: ");
    scanf("%d",&num);
    if(num<0){
        sign=-1;
    }else if(0==num){
        sign=0;
    }else{
        sign=1;
    }
    printf("Sign of the value is %d \n",sign);
    return 0;
}
```

//WAP to check for voting eligibility

```
#include<stdio.h>
int main(){
    int age;
    printf("Enter the age: ");
```

```
    scanf("%d",&age);
    if(age>=18){
        printf("You are eligible to vote");
    }else{
        printf("You are not eligible to vote");
    }
    return 0;
}
```

//WAP to determine the largest of three numbers

```
#include<stdio.h>
int main(){
    int num1,num2,num3;
    printf("Enter 3 numbers: ");
    scanf("%d %d %d",&num1,&num2,&num3);
    if((num1>num2)&&(num1>num3)){
        printf("%d is the largest number",num1);
    }else if((num2>num1)&&(num2>num3)){
        printf("%d is the largest number",num2);
    }else{
        printf("%d is the largest number",num3);
    }
    return 0;
}
```

//WAP to determine the grade of a student

```
#include<stdio.h>
int main(){
    int marks;
    printf("Enter the total marks obtained: ");
```

```
    scanf("%d",&marks);
    if(marks>=0){
    if(marks>=90){
        printf("Grade A");
    }
    else if(marks>=80 && marks<90){
        printf("Grade B");
    }
    else if(marks>=70 && marks<80){
        printf("Grade C");
    }
    else if(marks>=60 && marks<70){
        printf("Grade D");
    }
    else{
        printf("Grade F");
    }
    }else{
        printf("Mark is not valid");
    }
    return 0;
}
```

WAP to calculate the electricity bill based on the formula mentioned below

Calculations
To calculate your electricity bill, follow these steps:
Watts = (amps) x (volts)

Kilowatt-hours = (watts) x (usage) / 1000.

Cost = (kilowatt-hours) x (electricity rate)

1. Subtract the current meter reading from the previous month’s reading to find the energy consumption.

2. Multiply the units consumed by the per-unit charges based on the applicable slabs (e.g., Rs. 4.22 for 1-100 units,
Rs. 5.02 for 101-200 units).

3. Add the fixed charge and energy duty (e.g., Rs. 40 fixed charge and Rs. 0.15 per unit) to the energy charges.

4. The sum of the energy charges, fixed charge, and energy duty gives you the total bill amount.

Example: If you consumed 250 units with the applicable slabs mentioned above, the energy charges would be Rs. 1218.
Adding the fixed charge and energy duty, the total bill amount would be Rs. 1296.

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

   float hours;
   float grosspay,tax,netpay;
   printf("Enter the number of hours worked in a week: ");
   scanf("%f",&hours);
   if(hours>40){
      hours=hours+0.5;
   }
   printf("The total working hours is %f\n",hours);
   grosspay=hours*(12.00);
```

```
    printf("The gross pay is %f\n",grosspay);
    if(grosspay<=300){
        tax=(15*grosspay)/100;
    }else if(grosspay<=450){
        tax=((15*300)/100) + ((20*(grosspay-300))/100);
    }else if(grosspay>450){
        tax=((15*300)/100) + ((20*150)/100) + ((25*(grosspay-450))/100);
    }
    printf("The tax amount is %f\n",tax);
    netpay=grosspay+tax;
    printf("The net pay amount is %f",netpay);
    return 0;
}

//WAP using switch case for calculator

#include<stdio.h>
int main(){
    int num1,num2;
    float result;
    char op;
    printf("Enter any of the following operation: (+, -, *, /, %): ");
    scanf("%c",&op);
    printf("Enter two numbers: ");
    scanf("%d %d",&num1,&num2);
    switch(op){
        case '+':
            result=num1+num2;
            printf("%d + %d =  %f",num1,num2,result);
            break;
        case '-':
```

```
            result=num1-num2;
            printf("%d + %d = %f",num1,num2,result);
            break;
        case '*':
            result=num1*num2;
            printf("%d * %d = %f",num1,num2,result);
            break;
        case '/':
            result=num1/num2;
            printf("%d / %d = %f",num1,num2,result);
            break;
        case '%':
            result=num1%num2;
            printf("Result is %f",result);
            break;
        default:printf("Invalid input");
    }
    return 0;
}

//WAP to print values from 1 to 10 using while loop
#include<stdio.h>
int main(){
    int num=1;
    while(num<=10){
        printf("%d\n",num);
        num++;
    }
    return 0;
}
```

```
//WAP to calculate the sum of natural numbers
#include<stdio.h>
int main(){
   int n,i=1,sum=0;
   printf("Enter the upper limit: ");
   scanf("%d",&n);
   while(i<=n){
      sum+=i;
      i++;
   }
    printf("The sum is %d",sum);
    return 0;
}

//WAP to print even numbers upto a given numbers
#include<stdio.h>
int main(){
   int n,i=2;
   printf("Enter the upper limit: ");
   scanf("%d",&n);
   while(i<=n){
      printf("%d\n",i);
      i+=2;
   }
   return 0;
}
```

Assignment with respect to while loop

1. WAP to print Fibonacci Series up to a Given Number.

```
#include<stdio.h>
int main(){
   int n,a=0,b=1,i=2;
   int next;
   printf("Enter the limit: ");
   scanf("%d",&n);
   while(i<=n){
      next=a+b;
      a=b;
      b=next;
      printf("%d ",next);
   }
   return 0;
}
```

2. WAP to print factorial of a number.

```
#include <stdio.h>

int main() {
   int number, factorial = 1;
   printf("Enter a positive integer: ");
   scanf("%d", &number);
   if (number < 0) {
      printf("Factorial is not defined for negative numbers.\n");
      return 1;
   }
   int i = number;
   while (i > 1) {
      factorial *= i;
      i--;
   }
   printf("Factorial of %d is %d\n", number, factorial);
   return 0;
}
```

3. WAP to check whether the number is Prime or not.

```
#include <stdio.h>

int main() {
   int number, i = 2, isPrime = 1;
   printf("Enter a positive integer: ");
```

```
    scanf("%d", &number);
    if (number <= 1) {
        printf("%d is not a prime number.\n", number);
        return 0;
    }
    while (i <= number / 2) {
        if (number % i == 0) {
            isPrime = 0;
            break;
        }
        i++;
    }
    if (isPrime == 1) {
        printf("%d is a prime number.\n", number);
    } else {
        printf("%d is not a prime number.\n", number);
    }

    return 0;
}
```

4. WAP to print lower case alphabets

```
#include <stdio.h>
int main() {
    char ch = 'a';
    while (ch <= 'z') {
        printf("%c ", ch);
        ch++;
    }
    printf("\n");
    return 0;
}
```