1. WAP to check for a valid triangle.

```c
#include<stdio.h>
int main(){
    int a,b,c;
    printf("Enter values for side a::\n");
    scanf("%d",&a);
    printf("Enter values for side b::\n");
    scanf("%d",&b);
    printf("Enter values for side c::\n");
    scanf("%d",&c);
    if(a+b<=c||a+c<=b||b+c<=a)
        printf("Invalid Triangle\n");
    printf("Valid Triangle");
    return 0;
}
```

2. WAP to check if a character is an Alphabet.

```c
#include<stdio.h>
int main(){
    char c;
    printf("Enter character\n");
    scanf("%c",&c);
    if(isalpha(c))
        printf("Character is Alphabet\n");
    printf("Program Over\n");
    return 0;
}
```

3. WAP to check if a Year is a leap Year.

```c
#include<stdio.h>
int main(){
    int year;
    printf("Enter year::\n");
    scanf("%d",&year);
    if((0==year%4 && 0!=year%100)|| 0==year%400)
        printf("LEAP YEAR\n");
    printf("Program Over");
    return 0;
}
```

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

```c
#include<stdio.h>
int main(){
    int n;
    printf("Enter a Number\n");
    scanf("%d",&n);
    if(0==n%3)
        printf("Divisible by 3\n");
    printf("Program Over\n");
    return 0;
}
```

5. WAP to check for Uppercase Characters.

```c
#include<stdio.h>
int main(){
    char c;
    printf("Enter a Character\n");
    scanf("%c",&c);
    if(isupper(c))
        printf("UPPER CASE\n");
    printf("Program Over\n");
    return 0;
}
```

6. WAP to check for Special characters.

```c
#include<stdio.h>
int main(){
    char c;
    printf("Enter a Character\n");
    scanf("%c",&c);
    if(!isalpha(c) && !isdigit(c))
        printf("SPECIAL CASE\n");
    printf("Program Over\n");
    return 0;
}
```

7.Largest of 3 Numbers.

```c
//inputs: a,b,c
//Comparison: > ,&&
//Control Statements:  if....elseif...else
//How many Variables: 3
//Datatype of the variable: int
//Preferred Scope of the variable: local
#include<stdio.h>
```

```c
int main(){
    int a,b,c;
    printf("Enter 3 Numbers a,b,c::\n");
    scanf("%d %d %d",&a,&b,&c);
    if((a>b) && (a>c)){
        printf("%d is the largest\n",a);
    }
    else if((b>a)&&(b>c)){
        printf("%d is the largest\n",b);
    }
    else{
        printf("%d is the largest\n",c);
    }
    return 0;
}
```

8.Grade for Students:

```c
//inputs: mark
//Comparison: >= &&
//Control Statements:  if....elseif...else
//How many Variables: 1
//Datatype of the variable: int
//Preferred Scope of the variable: local
#include<stdio.h>
int main(){
    int m;
    printf("Enter marks::\n");
    scanf("%d",&m);
    if((m>=90)&&(m<=100)){
        printf("GRADE A");
    }
    else if((m>=80)&&(m<90)){
        printf("GRADE B");
    }
    else if((m>=70)&&(m<80)){
        printf("GRADE C");
    }
    else if((m>=60)&&(m<70)){
        printf("GRADE D");
    }
    else if(m>=0){
        printf("GRADE F");
    }
```

```
        else{
            printf("Wrong marks entered");
        }
        return 0;
}
```

9.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.

```
//inputs: current and previous meter readings
//Comparison: <= <
//Control Statements:  if....elseif...else
//How many Variables: 10
//Datatype of the variable: int
//Preferred Scope of the variable: local
#include<stdio.h>
int main(){
    int p_m,c_m,con,e_d,e_c,bill=0,amps,volt,watt,kwh;
    printf("Enter Amps::\n");
    scanf("%d",&amps);
    printf("Enter Volts::\n");
    scanf("%d",&volt);
    watt=amps*volt;
    printf("Enter Previous Meter Reading::\n");
    scanf("%d",&p_m);
    printf("Enter Current Meter Reading::\n");
```

```c
    scanf("%d",&c_m);
    con=c_m-p_m;
    kwh=watt*con/1000;
    e_d=con*0.15;
    if((0<con)&&(con<=100)){
        e_c=con*4.22;
        bill=40+e_c+e_d;
    }
    else if((100<con)&&(con<=200)){
        e_c=con*5.02;
        bill=40+e_c+e_d;
    }
    else if(con>200){
        e_c=con*7;
        bill=40+e_c+e_d;
    }
    else{
        printf("Check Meter Readings\n");
    }
    printf("Electricity Bill is ::%d",bill);
    return 0;
}
```

10.Calculating Pay

```c
#include<stdio.h>
int main(){
    int h,overtime,basicpay,tax,temppay;
    printf("Enter the workhour::\n");
    scanf("%d",&h);
    overtime=0;
    if(h>40){
        overtime=h-40;
    }
    if(overtime==0){
        basicpay=h*12;
    }
    else{
        basicpay=40*12+overtime*18;
    }
    if(basicpay<=300){
        tax=basicpay*15/100;
    }
```

```
    else if(300<basicpay<=450){
        temppay=basicpay-300;
        tax=(300*15/100)+(temppay*20/100);
    }
    else{
        temppay=basicpay-450;
        tax=(300*15/100)+(150*20/100)+(temppay*25/100);
    }


    printf("BasicPay is ::$%d\n",basicpay);
    printf("Tax::$%d\n",tax);
    printf("Net Pay::$%d",basicpay-tax);
}
```

11.Calculator using Switch

```c
#include<stdio.h>
int main(){
    int a,b;
    char o;
    printf("Enter first number::\n");
    scanf("%d",&a);
    printf("Enter second number::\n");
    scanf("%d",&b);


    printf("Enter Operation(+,-,*,/,%%)::\n");
    scanf(" %c",&o);

    switch (o) {
        case '+':
            printf("SUM IS %d",a+b);
            break;
        case '-':
            printf("DIFFERENCE IS %d",a-b);
            break;
        case '*':
            printf("PRODUCT IS %d",a*b);
            break;
        case '/':
            if(b!=0){
                printf("DIVISION IS %d",a/b);
            }
```

```c
            else{
                printf("DIVISION BY ZERO NOT ALLOWED");
            }
            break;
        case '%':
            printf("MODULUS IS %d",a%b);
            break;
        default:
            printf("Invalid Operation");
            break;
    }
    return 0;
}
```

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

```c
#include<stdio.h>

int main(){

    int n,t1=0,t2=1,next=0;

    printf("Enter value of n::\n");

    scanf("%d",&n);

    while(n>0){

        printf("%d ",t1);

        next=t1+t2;

        t1=t2;

        t2=next;

        n--;

    }

    return 0;

}
```

2. WAP to print factorial of a number.

```c
#include<stdio.h>

int main(){

    int n,fact=1;

    printf("Enter value of n::\n");

    scanf("%d",&n);

    while(n>0){

        fact*=n;

        n--;

    }

    printf("Factorial=%d ",fact);

    return 0;

}
```

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

```c
#include<stdio.h>

int main(){

    int n,i;

    printf("Enter a Number::");

    scanf("%d",&n);

    i=n-1;

    if(n==2){

        printf("PRIME");

    }
```

```c
    while(i>1 && i!=n){

        if(n%i==0){

            printf("NOT PRIME");

            break;


        }

        else{

            printf("PRIME");

            break;

        }

    }

    return 0;

}
```

4. WAP to print lower case alphabets.

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