```c
/*WAP to check for a valid triangle*/
#include <stdio.h>
int main(){
    float s1,s2,s3;
    printf("\nEnter the length of all three sides : ");
    scanf("%f %f %f",&s1,&s2,&s3);
    if((s1+s2>s3)&&(s1+s3>s2)&&(s2+s3>s1))
    {
        printf("\nThe sides given forms a valid triangle.");
    }
    else{
        printf("\nThe sides given donot form a valid triangle. ");
    }
    return 0;

}
```

2.

```c
/*WAP to check if a character is a alphabet.*/
#include <stdio.h>
#include <ctype.h>
int main(){
    char alpha;
    printf("\nEnter input character :  ");
    scanf("%c",&alpha);
    if(isalpha(alpha)==1)
    {
        printf("\nYour input character is a alphabet");
    }
    else{
        printf("\nYour input character is not an alphabet.");
    }
    return 0;
}
```

3.

```c
/*WAP to check if a character is a alphabet.*/
#include <stdio.h>
#include <ctype.h>
int main(){
    char alpha;
    printf("\nEnter input character :  ");
    scanf("%c",&alpha);
    if(isalpha(alpha)==1)
    {
        printf("\nYour input character is a alphabet");
    }
    else{
        printf("\nYour input character is not an alphabet.");
```

```
    }
    return 0;
}
```

4.

```
//WAP to check whether the number is Prime or not

#include<stdio.h>
int main()
{
    int num, i = 2, flag = 0;
    printf("Enter the number: ");
    scanf("%d", &num);

    while(i < num/2)
    {
        if(num % i == 0)
        {
            flag = 1;
            break;
        }
        i++;
    }

    if(num == 1)
    {
        printf("%d is neither a prime nor a composite.\n", num);
        }
    else if(flag == 0)
    {
        printf("%d is a prime number.\n", num);
    }
    else
    {
        printf("%d is not a prime number.\n", num);
    }

    return 0;
}
```

5.

```
#include <stdio.h>

int main() {
    char c = 'a';

    while (c <= 'z') {
        printf("%c ", c);
```

```
        c++;
    }

    return 0;
}
```

6.

```
/*WAP to check if a number is divisible by 3.*/
#include <stdio.h>
int main()
{
    int num;
    printf("\nEnter the number : ");
    scanf("%d",&num);
    if(num%3==0)
    {
        printf("\nThe number %d is divisible by 3",num);

    }
    else{
        printf("\nThe number %d is not divisible by 3",num);
    }
    return 0;

}
```

7.

```
/*WAP to check for Upper characters.*/
#include <stdio.h>
#include <ctype.h>
int main(){
    char str[10];
    int upper = 0;
    printf("\nEnter the string : ");
    scanf("%99s",str);
    printf("\nThe uppercase characters in the string are : ");
    for (int i = 0; str[i]!='\0'; i++)
    {
        if(isupper(str[i]))
        {
            printf("%c ",str[i]);
            upper = 1;
```

```
        }

    }
    if(!upper)
    {
        printf("\nNo uppercase letter present in the string.");
    }
    printf("\n");

    return 0 ;
}
```

8.

```
/*WAP to check for Special character.*/
#include <stdio.h>
int  main(){
    char s;
    printf("\nEnter input character : ");
    scanf("%c",&s);
    if(((s=='!')||(s=='@')||(s=='#')||(s=='$')||(s=='%')||(s=='^')||(s=='&')||
(s=='*')||(s=='(')||(s==')')||(s=='[')||(s==']')||(s=='{')||(s=='}')||(s==';')
||(s==':')||(s=='|')||(s=='"')||(s=='<')||(s=='>')||(s==',')||(s=='.')||(s=='?
')))
    {
        printf("\nThe character is a special character.");
    }
    else{
        printf("\nThe character is not a special character.");
    }
    return 0 ;
}
```

9.

```
/*1.WAP to find the sign of a value. */
#include <stdio.h>
int  main(){
    int num1,sign;
    printf("\nEnter the value for num : ");
    scanf("%d",&num1);
    if(num1<0)
    {
        sign  = -1;
```

```
    }
    else if (num1==0)
    {
        sign=0;
    }
    else{
        sign = 1;
    }
    printf("The sign of the value is %d\n",sign);
    return 0;

}
```

10.

```
//WAP to determine the largest of the three numbers.
#include <stdio.h>
int main()
{
    int num1,num2,num3;
    printf("\nEnter the three numbers : ");
    scanf("%d%d%d",&num1,&num2,&num3);
    if((num1>num2)&&(num1>num3))
    {
        printf("\n%d is greater than %d and %d",num1,num2,num3);

    }else if ((num2>num1) && (num2>num3))
    {
        printf("\n%d is greater than %d and %d",num2,num1,num3);
    }
    else{
        printf("\n%d is greater than %d and %d",num3,num1,num2);
    }
    return 0;

}
```

11.

```
11. //WAP to determine the grade of a student based on following.

/*

Grade A = marks>=90
Grade B = marks>=80 and marks <90
Grade C = marks>=70 and marks<80
Grade D = marks>=60 and marks<70
Grade F = marks <60
```

```
**************************************/
#include <stdio.h>
int main()
{
    int marks;
    printf("\nEnter the mark : ");
    scanf("%d",&marks);
    if(marks>=90)
    {
        printf("\nGrade A");
    }else if (marks>=80 && marks <90)
    {
        printf("\nGrade B");
    }else if (marks>=70 && marks <80)
    {
        printf("\nGrade C");
    }else if (marks>=60 && marks <70)
    {
        printf("\nGrade D");
    }
    else if (marks>=60 && marks <70)
    {
        printf("\nGrade F");
    }
    else if (marks<0)
    {
        printf("\nThe mark is not valid!!!");
    }
    return 0;

}
```

12.
```
/*
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.
has context menu

>> Requirements:
inputs : amps, volts, prev_read, curr_read
control statements : if...elseif...else
number of variables : 9
data type of variables : float
scopes of variables : local

comparison : >=, <=


**********************************************/

#include <stdio.h>
int main(){
    float watts,amps,volts,Kilowatt_hours,usage,Cost,electricity_rate;
    float curr_read,prev_read;
    printf("\nEnter amps value : ");
    scanf("%d",&amps);
    printf("\nEnter the value of volts : ");
    scanf("%d",&volts);
    printf("\nEnter the current meter reading: ");
    scanf("%d",&curr_read);
    printf("\nEnter the previous meter reading: ");
    scanf("%d",&prev_read);

    usage = prev_read - curr_read;

    int fix_charge=40;
    float duty_charge = 0.15; //per unit

    watts = (amps) * (volts);
```

```
    Kilowatt_hours = (watts) * (usage) / 1000;



    if(usage<0){
        printf("\nCurrent reading cannot be less than previous reading!");
    }

    if(1<=Kilowatt_hours && Kilowatt_hours<=100)
    {
        electricity_rate  = 4.22;
        Cost = (Kilowatt_hours) * (electricity_rate);
    }
    else if (101<=Kilowatt_hours && Kilowatt_hours<=200)
    {
        electricity_rate  = 5.02;
        Cost = (Kilowatt_hours) * (electricity_rate);
    }
    else if(Kilowatt_hours > 200)
    {
        electricity_rate  = 5.82;
        Cost = (Kilowatt_hours) * (electricity_rate);
    }

    Cost = Cost + fix_charge + (Kilowatt_hours*duty_charge);
    printf("\nYour total electricity bill is Rs.%d",Cost);
    return 0;

}
```

13.

```
/*WAP to create a C program that calculates your weekly pay.

* Read from user the number of hours worked in a week .

* Output : gross pay,taxes,net pay

*Should follow the following assumpions :
    -> Basic pay rate $12.00/hr
    ->Overtime(in excess of 40 hr) = time and a half
    ->Tax rate :
        @ 15% of the first $300
        @ 20% of the next $150
        @25% of the rest

* Utilize if/else statements
```

```c
*/
#include<stdio.h>
int main()
{
    int hr;
    float gpay,tax,net_pay,overtime_pay;
    printf("\nEnter the number of hours you worked in a week :  ");
    scanf("%d",&hr);
    float basic_pay = 12.00;//basic hr 40 hr.

    if(hr<=40){
        gpay = basic_pay*hr;
    }
    else
    {
        overtime_pay = basic_pay*1.5;//pay will be given per hr for overtime
workers
        gpay = (40*basic_pay)+((hr-40)*overtime_pay);
    }
    if(gpay<=300)
    {
        tax = gpay*15/100;
    }
    else if (gpay>300 && gpay<=450)
    {
        tax = gpay*20/100;
    }
    else{
        tax = gpay*25/100;
    }
    net_pay = gpay - tax;

    printf("\nGross Pay :  $ %.2f\n",gpay);
    printf("\nTaxes :  $ %.2f",tax);
    printf("\nNet Pay :  $ %.2f",net_pay);
    return 0;



}
```

14.

```c
/*WAP to print 1 to 10 using while loop*/
#include<stdio.h>
int main()
{
    int num =1;
    while (num<=10)
    {
```

```
        printf("%d\n",num);
        num++;
    }
    return 0;

}
```

15.

```
//WAP to calculate the sum of natural num bers
//10=1+2+3+4+...+10
#include<stdio.h>
int main()
{
    int num,sum=0,i=1;
    printf("\nEnter the natural number for summation: ");
    scanf("%d",&num);
    while (i<=num)
    {
        sum +=i;

        i++;
    }
    printf("%d\n",sum);
    return 0;

}
```

16.

```
//WAP To print even numbers upto a given number
//WAP to calculate the sum of natural num bers
//10=1+2+3+4+...+10
#include<stdio.h>
int main()
{
    int num,i=1;
    printf("\nEnter the range for printing even numbers : ");
    scanf("%d",&num);
    printf("\nThe even numbers are : \n");
    while (i<=num)
    {
        if(i%2==0)
        {
            printf("%d\n",i);
        }

        i++;
    }
```

```
    return 0;

}
```