ASSIGNMENT

Write a program to check wheather a triangle is valid

```
#include<stdio.h>
int main(){
    int n,m,o;
    printf("enter the first side\n");
    scanf("%d",&n);
    printf("enter the second side\n");
    scanf("%d",&m);
    printf("enter the third side\n");
    scanf("%d",&o);
    if(m+n>o&&n+o>m&&o+m>n){
        printf("the triangle is valid\n");
    }
printf("execution is over");
return 0;
}
```

OUTPUT

```
enter the first side
 3
 enter the second side
 2
 enter the third side
 4
 the triangle is valid
 execution is over
```

2 WAP to check the character is alphabet

```
#include <stdio.h>

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

```
}
```
OUTPUT
```
Enter a character: A
the character is an alphabet.
execution is over
```

3 WAPto check the year is a leap year or not

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

```
enter a Year2024
the year is a leap year
execution over
```

4 wap to check the number is divisible by 3

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

```
enter a number9
 the number is divisible by 3
the execution over
```

5 wap to check for the upper case character

```
#include<stdio.h>
int main(){
    char C;
    printf("enter a character");
    scanf("%d",&C);
    if(C>='A' && C<='Z'){
        printf("the given character is a Upper chase");
    }
    printf("the execution is over");
}
```

```
enter a character A
the given character is a Upper chase
the execution is over
```

6 wap to check for the special character

```
#include <stdio.h>

int main() {
    char c;
    printf("Enter a character: ");
    scanf("%c", &c);

 if (c == '@' || c == '#' || c == '$' || c == '%' || c == '^' || c == '&' || c == '*' ||
        c == '(' || c == ')' || c == '!' || c == '+' || c == '_' || c == '{' || c == '}' ||
        c == '[' || c == ']' )
  {
        printf("The character  is a special character.\n");
     }

   printf("the execution is over");
}
```

```
Enter a character +
The character  is a special character
the execution is over
```

7

```
#include <stdio.h>

int main() {
    float amps, volts, watts, kilowatt_hours, usage, rate = 0, cost, prev_month, this_month;

    printf("Enter the amplitude: ");
    scanf("%f", &amps);
    printf("Enter the voltage: ");
    scanf("%f", &volts);
    printf("Enter the previous month's reading: ");
    scanf("%f", &prev_month);
    printf("Enter the current month's reading: ");
    scanf("%f", &this_month);

    usage = this_month - prev_month;
    if (usage < 0) {
        printf("Current reading cannot be less than previous reading.\n");
        return 1;
    }

    watts = amps * volts;
    kilowatt_hours = watts * usage / 1000;

    if (kilowatt_hours >= 1 && kilowatt_hours <= 100) {
        rate = 4.22;
    } else if (kilowatt_hours >= 101 && kilowatt_hours <= 200) {
        rate = 5.02;
    } else if (kilowatt_hours > 200) {
        rate = 5.82;
    } else {
        printf("The readings are invalid!\n");
        return 1;
    }

    cost = kilowatt_hours * rate + 40 + (kilowatt_hours * 0.15);

    printf("Total cost: Rs. %.2f\n", cost);

    return 0;
}
```

output

```
Enter the amplitude: 10
```

```
Enter the voltage: 230
Enter the previous month's reading: 1200
Enter the current month's reading: 1250
Total cost: Rs. 634.55
```

8

```
#include <stdio.h>

int main() {
    int hours;
    float grosspay, tax = 0.0, net_pay;
    const float payrate = 12.0;
    const float overtimerate = 1.5 * payrate;
    printf("Enter the number of hours worked in a week: ");
    scanf("%d", &hours);
    if (hours <= 40) {
        grosspay = hours * payrate;
    } else {
        grosspay = (40 * payrate) + ((hours - 40) * overtimerate);
    }

    if (grosspay <= 300) {
        tax = grosspay * 0.15;
    } else if (grosspay <= 450) {
        tax = (300 * 0.15) + ((grosspay - 300) * 0.20);
    } else {
        tax = (300 * 0.15) + (150 * 0.20) + ((grosspay - 450) * 0.25);
    }

    net_pay = grosspay - tax;

    printf("Gross Pay: %.2f\n", grosspay);
    printf("Taxes: %.2f\n", tax);
    printf("Net Pay: %.2f\n", net_pay);

    return 0;
}
```

output

```
Enter the number of hours worked in a week: 44
Gross Pay: 552.00
Taxes: 100.50
Net Pay: 451.50
```

WHILE

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

```
#include<stdio.h>
int main()
{
   int first,second,next,n ,i=0;
   first = 0;
   second = 1;
   printf("enter a number");
   scanf("%d",&n);
   printf("%d\n",first);

   while(i<n){
      printf("%d\n",second);
      next = first + second;
      first = second;
      second =next;
      i++;

   }
}
```

OUTPUT

```
enter a number10
0
1
1
2
3
5
8
13
21
34
55
```

10. WAP to print factorial of a number.

```
#include<stdio.h>
int main(){
   int n,fact=1;
   printf("enter the number");
```

```
    scanf("%d",&n);
    int v = n;
    while(0<n){
        fact = fact * n;
        n--;

    }
    printf("factorial of a number is %d ! =%d",v,fact);
}
output
enter the number4
factorial of a number is 4 ! =24
```

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

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

int main(){
    int isprime = 1;
    int n, i = 2;
        printf("Enter the number: ");
    scanf("%d", &n);
    if (n <= 1) {
        isprime = 0;
    } else {
        while (i <= n/2) {
            if (n % i == 0) {
                isprime = 0;
                break;
            }
            i++;
        }
    }
    if (isprime == 1) {
        printf("The number is prime\n");
    } else {
        printf("The number is not prime\n");
    }

    return 0;
}
```

Enter the number:
7
The number is prime

12. WAP to print lower case alphabets

```
#include<stdio.h>
int main()
{
   char c ='a';

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

   }
}
```

output
a b c d e f g h i j k l m n o p q r s t u v w x y z

Class works

```c
#include<stdio.h>
int main(){
    int n,sign;
    printf("enter the number ");
    scanf("%d",&n);
    if(n<0){
        sign =-1;
    }
    else if (0==n)
    {
        sign = 0;
    }
    else{
        sign =1;

    }
    printf("the sign value  is :%d",sign);
    return 0;
```

```
}
```

2

```
#include<stdio.h>
int main(){
    int n;
    printf("enter the number ");
    scanf("%d",&n);
    if(0==n%2){
        printf("enter the number is even\n");
    }
    else{
        printf("the number is odd");
    }
}
```

3

```
#include<stdio.h>
int main(){
    int n;
    printf("enter a number");
    scanf("%d",&n);
    if(n>0)
        printf("the given number is a positive number\n");

    printf("the program is over");
```

4

```
#include<stdio.h>
int main(){
    int score =80;
    int big = 75;
    if(score > big){
        printf("score is greater than big\n");
```

```
        if (score>big){
            score++;
            printf("the score is greater than %d",score);
        }
    }
    else{

    }
}
```

5

```
# include<stdio.h>
int main(){
int age;
printf("enter the age\n");
scanf("%d",&age);

if(age>=18){
    printf("you are eligible to vote");
}
else{
    printf("you are not eligible for votting");
}


}
```

6

```
#include<stdio.h>
int main(){
    int n1,n2,n3;
    printf("enter the n1  :");
    scanf("%d",&n1);
    printf("enter the n2  :");
    scanf("%d",&n2);
```

```
    printf("enter the n3  :");
    scanf("%d",&n3);

    if(n1>=n2 && n1>=n3){
        printf("n1 is the largest%d",n1);

    }
    else if(n2>=n1 && n2>=n3){
        printf("n2 is the largest%d",n2);
    }
    else if(n3>=n2 && n3>=n1){
        printf("n3 is the largest%d",n3);
    }
    else{
        printf(" the given number is in valid");
    }

}
```

7

```
#include<stdio.h>
int main(){
    int n1,n2,n3;
    printf("enter the n1  :");
    scanf("%d",&n1);

if(n1>=0){
    if(n1>=90){
        printf("the student got A grade");

    }
    else if(n1>=80 && n1<=90){
        printf("the student got B grade");
    }
    else if(n1>=70 && n1<=80){
        printf("the student got c grade");
    }
    else if(n1>=60 && n1<=70){
        printf("the student got D grade");
```

```
    }
    else if(n1<60){
        printf("the student got F grade");
    }
}
else{
    printf(" this is not valid mark");
}
    }
```

8

```
#include<stdio.h>
int main(){
    int  reverece=0 ,n,num;
    printf("enter the number");
    scanf("%d",&num);
    int v= num;
    while(num>0){
        n=num%10;
        reverece = reverece * 10 +n;
        num = num/10;
    }
    printf("%d",reverece);
```

9

```
#include<stdio.h>
int main(){
    int num;
    printf("enter the number between 1 to 4");
    scanf("%d",&num);

    switch (num)
    {
    case 1:
       printf("1 Is entered");
        break;
    case 2:
       printf("2 Is entered");
```

```
        break;
    case 3:
       printf("3 Is entered");
        break;
    case 4:
       printf("4 Is entered");
        break;

    default:
    printf("wrong entery");
        break;
    }
}
```

10

```
# include<stdio.h>
int main(){
    int num1,num2,result;
    char op;
    printf("enter the number1 ");
    scanf("%d",&num1);
    printf("enter the second number ");
    scanf("%d",&num2);
    printf("enter the operator to perform ");
    scanf(" %c",&op);

    switch (op)
    {
    case '+':
        result = num1+num2;
        printf("the result is %d",result);
        break;
    case '-':
        result = num1-num2;
        printf("the result is %d",result);
        break;
    case '*':
        result = num1*num2;
        printf("the result is %d",result);
```

```
        break;
    case '/':
        if (num2 == 0 ) {
        printf(" num2 is 0");
    } else {
        result = num1 / num2;
        printf("The result is %d\n", result);
    }
        break;
    case '%':
        result = num1%num2;
        printf("the result is %d",result);
        break;


    default:
    printf("the number is not valid");
        break;
    }
}
```