PROJECT ON SCIENTIFIC CALACULATOR BY USING C PROGRAMMING

DESCRIPTION:

- Caluculator is a machine which performs basic operations like addition, subtraction,multiplication, division etc.
- It is used to do mathematical operations.
- They are two types of caluculators:
    i. Pocket Caluculator
    ii. Scientific Caluculator

Pocket Caluculator:

It is a small caluculator in which we can perform only basic arthmetic operations like addition,subtraction,multiplication, division.It is small in size.Most of the pocket caluculators are solar based.

Scientific Caluculator:

It can do more operations than pocket caluculator like trignometric functions,square and cube of a numbers,factorials etc.We can use bigger numbers in this caluculator.

REQUIREMENTS:

High level requirements:

- We need two operands to perform operation.
- We need specific operation to perform between operands.
- We need another variable to store that result.

Low level requirements:

- First we have to know the what are the operartions there in scentific caluculator.
- We have to understand the logic to implement them in c programming language.
- We have to understand the mathematical operations.

5W AND 1H:

WHAT--

- Scientific Caluculator.
- It is a electronic machine.
- It performs specific operation given to it.

WHY--

- It saves time while doing mathematical operations.
- It helps in solving the complex problems easily.

WHEN--

- It used in maths exams.
- It used in tally accounts.

WHERE--

- It can be used in general stores, super markets, schools, colleges etc

WHO--

- This caluculators are used by students, shopkeepers to do caluculations.

HOW--

- By using c programming.
- Using softwares like visual studiocode, github etc
- It takes input from users and perform operations.

SWOT ANALYSIS:

STRENGTH

- Easy to use.

- Faster caluculations.
- Helps students and shopkeepers in mathematical operations.

WEAKNESS

- Solar based.
- No light facility.

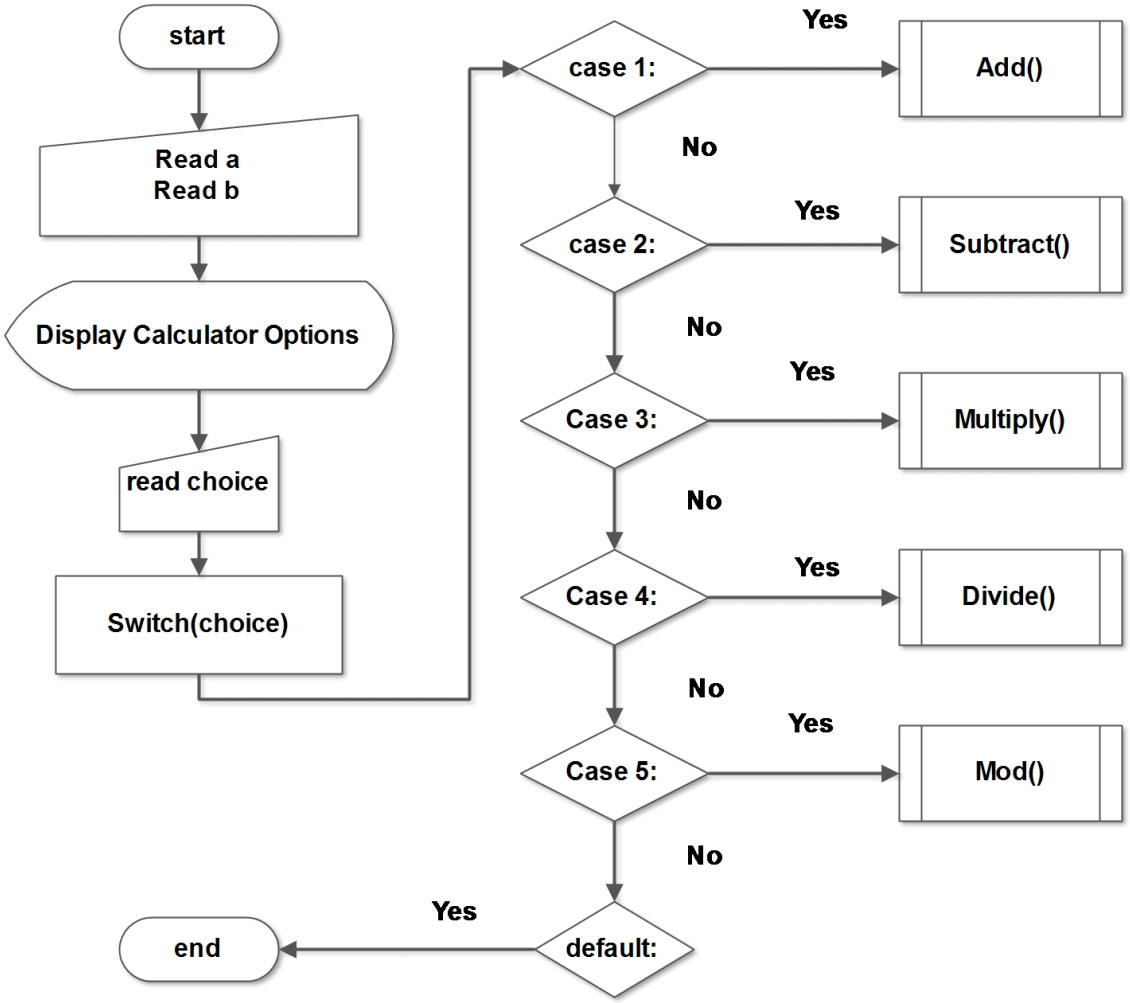
OPPURTUNITIES

- Too many General stores, Medical shops, resturants, Hotels, Schools etc.
- Large number of students and shopkeepers.

THREAT

- More advanced mobile phones are used instead of caluculators

FLOWCHART:



CODING:

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
int main()
{ int operation, j, x, y;
  float p, q, answer;
  printf("*****WELCOME TO SCIENTIFIC CALCULATOR*****");
  printf("\nSelect your operation from 1 to 18 given below:\n");
  printf("1. Addition\n2. Subtraction\n3. Multiplication\n4. Division\n");
  printf("5. Modulus\n6. Sin(P)\n7. Cos(P)\n8. Tan(P)\n");
  printf("9. Cosec(P)\n10. Cot(P)\n11. Sec(P)\n12. Square root\n");
```

```
printf("13. Cuberoot\n14. Power\n15. Squares of a numbers\n16. Cubes of a numbers\n");
printf("17. log10(P)\n18. Factorial\n ");
printf("Enter the operation number you want to perform:\n");
scanf("%d",&operation);
switch(operation){
        case 1:
        printf("Enter the value of P:");
        scanf("%f",&p);
        printf("Enter the value of Q:");
        scanf("%f",&q);
        answer = p+q;
        printf("\nAnswer:%.2f", answer);
        break;
        case 2:
        printf("Enter the value of P:");
        scanf("%f",&p);
        printf("Enter the value of Q:");
        scanf("%f",&q);
        answer = p-q;
        printf("\nAnswer:%.2f", answer);
        break;
        case 3:
        printf("Enter the value of P:");
        scanf("%f",&p);
        printf("Enter the value of Q:");
        scanf("%f",&q);
        answer = p*q;
        printf("\nAnswer:%.2f", answer);
        break;
        case 4:
        printf("Enter the value of P:");
        scanf("%f",&p);
        printf("Enter the value of Q:");
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```
scanf("%f",&q);
answer= p/q;
printf("\nAnswer:%.2f", answer);
break;
case 5:
printf("Enter the value of X:");
scanf("%d",&x);
printf("Enter the value of Q:");
scanf("%d",&y);
answer = x%y;
printf("\nAnswer:%.2f", answer);
break;
case 6:
printf("Enter the value of P:");
scanf("%f",&p);
answer = sin(p*3.14159/180);
printf("\nAnswer:%.2f", answer);
break;
case 7:
printf("Enter the value of P:");
scanf("%f",&p);
answer = cos(p*3.14159/180);
printf("\nAnswer:%.2f", answer);
break;
case 8:
printf("Enter the value of P:");
scanf("%f",&p);
if (p==90||p==270){
        printf("Answer is undefined");
 }
else{
        answer = tan(p*3.14159/180);
printf("\nAnswer:%.2f", answer);}
```

```
break;
case 9:
printf("Enter the value of P:");
scanf("%f",&p);
if (p==0||p==180||p==360){
        printf("Answer is undefined");
 }
else{
answer = 1/sin(p*3.14159/180);
printf("\nAnswer:%.2f", answer);}
break;
case 10:
printf("Enter the value of P:");
scanf("%f",&p);
if (p==0||p==180||p==360){
        printf("Answer is undefined");
 }
else{
answer = 1/tan(p*3.14159/180);
printf("\nAnswer:%.2f", answer);}
break;
case 11:
printf("Enter the value of P:");
scanf("%f",&p);
if (p==90||p==270){
        printf("Answer is undefined");
 }
else{
answer = 1/cos(p*3.14159/180);
printf("\nAnswer:%.2f", answer);}
break;
case 12:
printf("Enter the value of P:");
```

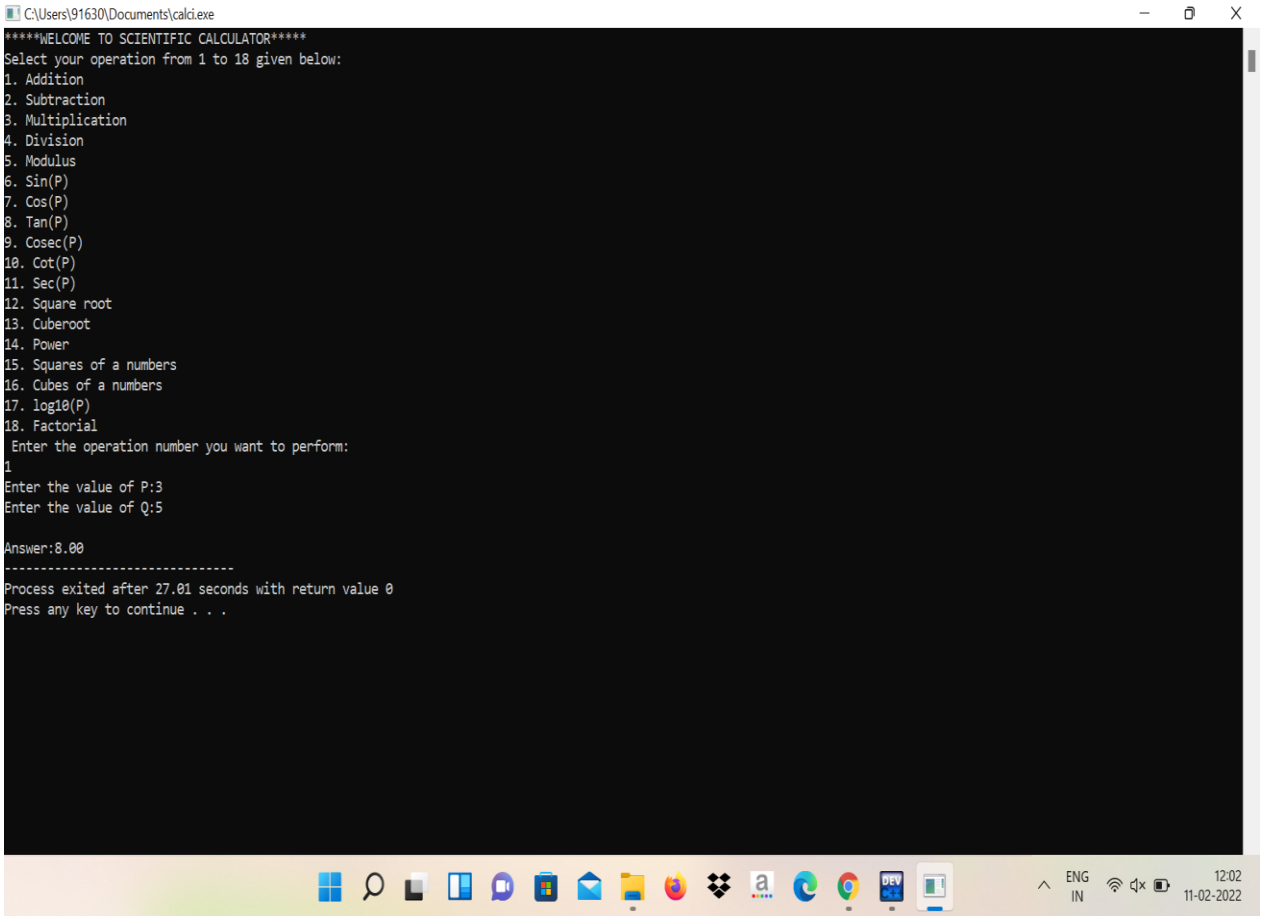
```
scanf("%f",&p);
answer = sqrt(p);
printf("\nAnswer:%.2f", answer);
break;
case 13:
printf("Enter the value of X:");
scanf("%d",&x);
answer = cbrt(x);
printf("\nAnswer:%.2f", answer);
break;
case 14:
printf("Enter the value of P:");
scanf("%f",&p);
printf("Enter the value of Q:");
scanf("%f",&q);
answer = pow(p,q);
printf("\nAnswer:%.2f", answer);
break;
case 15:
printf("Enter the value of P:");
scanf("%f",&p);
answer = pow(p,2);
printf("\nAnswer:%.2f", answer);
break;
case 16:
printf("Enter the value of P:");
scanf("%f",&p);
answer = pow(p,3);
printf("\nAnswer:%.2f", answer);
break;
case 17:
printf("Enter the value of P:");
scanf("%f",&p);
```

```
answer = log10(p);
printf("\nAnswer:%.2f", answer);
break;
case 18:
printf("Enter the number you want to find the factorial of X:");
scanf("%d",&x);
if (x<0)
{ printf("\n Please enter the positive number to find the factorial");

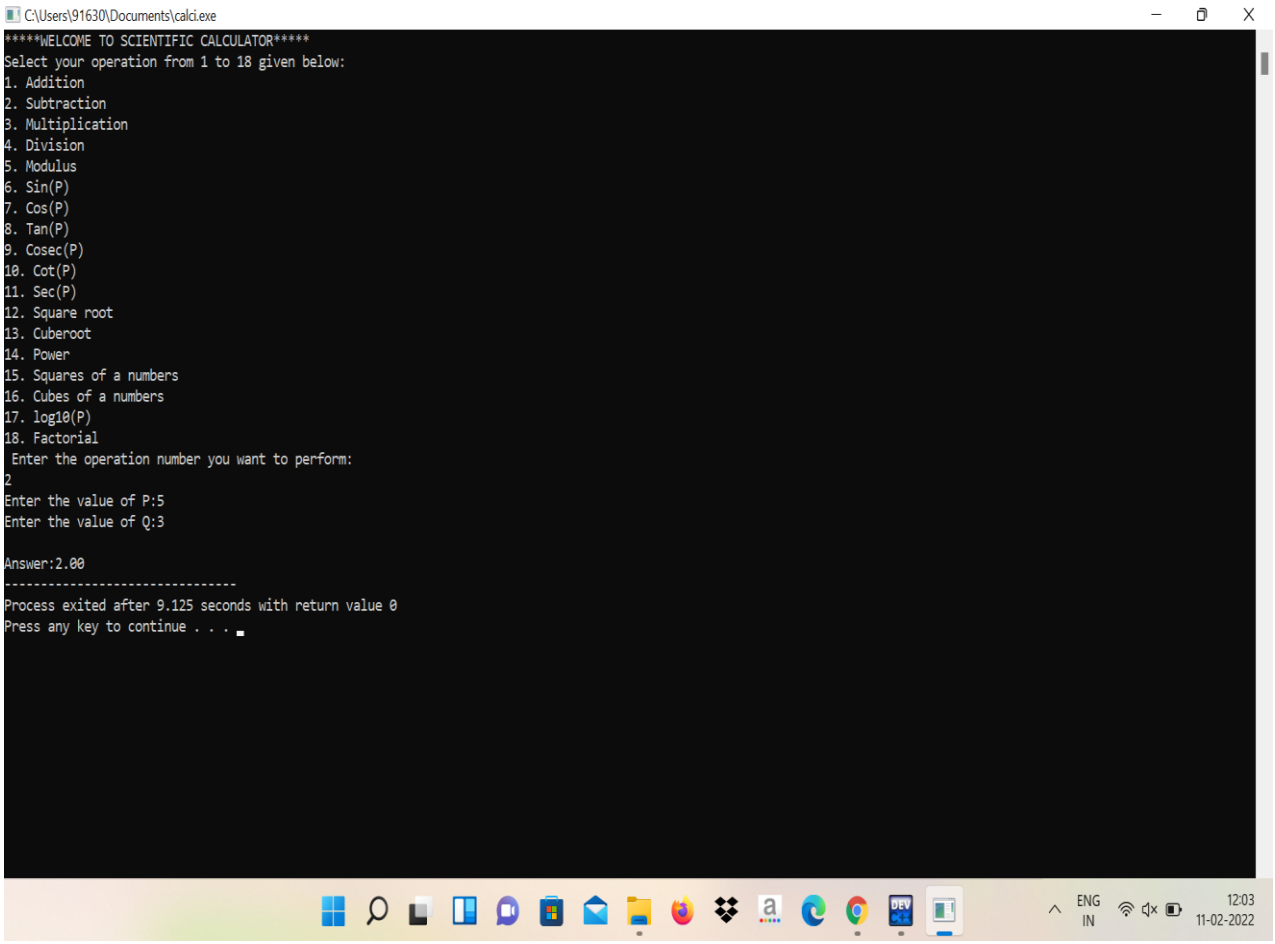
 }
 else{
 int i, fact=1;
 for(i=1;i<=x;i++){
  fact= fact*i;
  }
 printf("\n");
 printf("factorial of number is:%d\n", fact);}
break;
default:
printf("\nInvalid operation");
}
 }
```

OUTPUT:

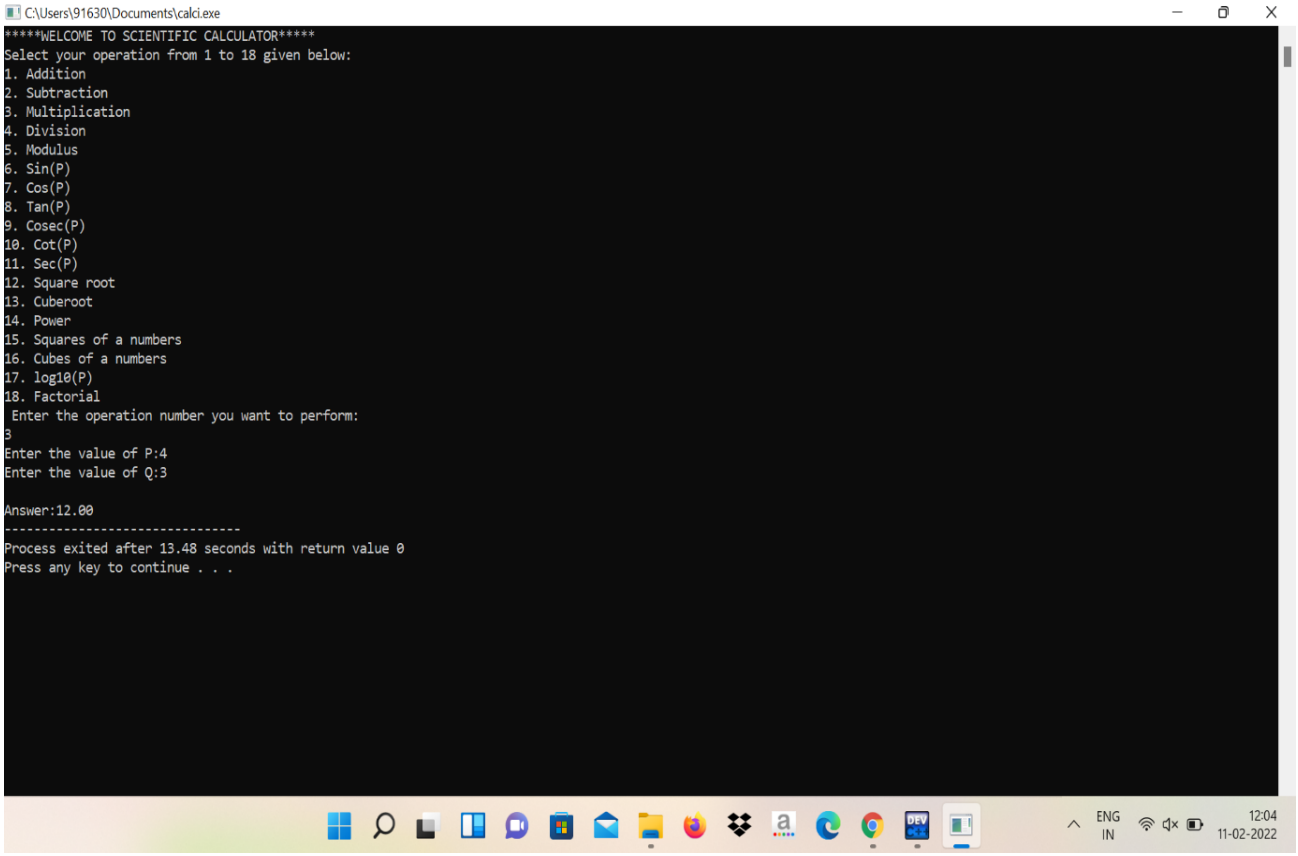
FOR ADDITION:



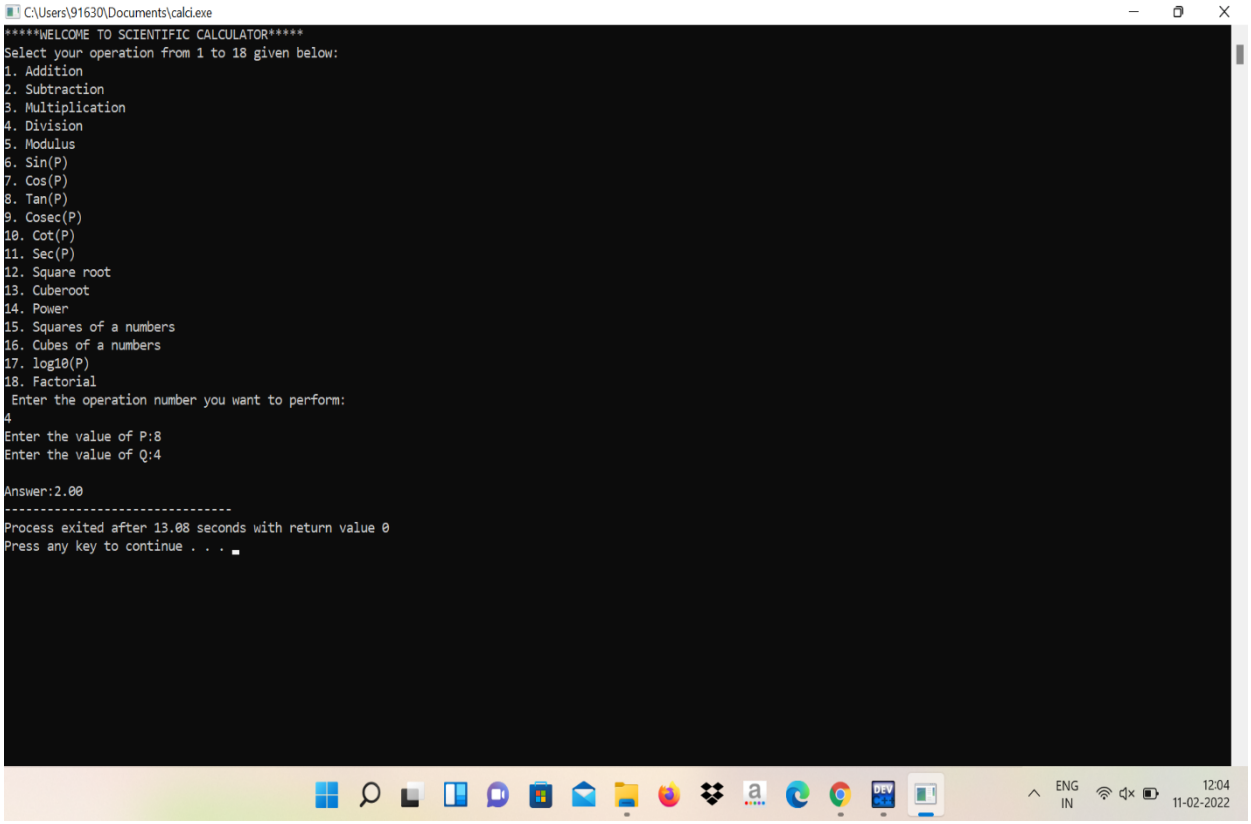
FOR SUBTRACTION:



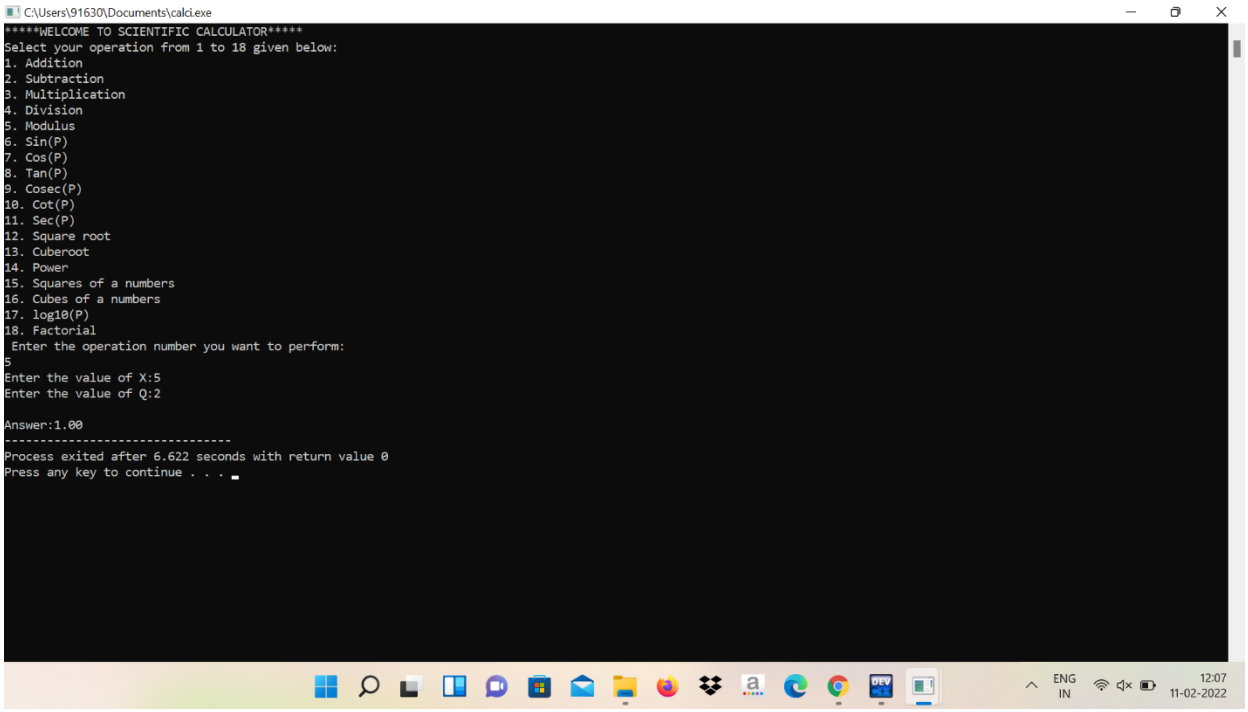
FOR MULTIPLICATION:



FOR DIVISION:



FOR MODULUS:



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