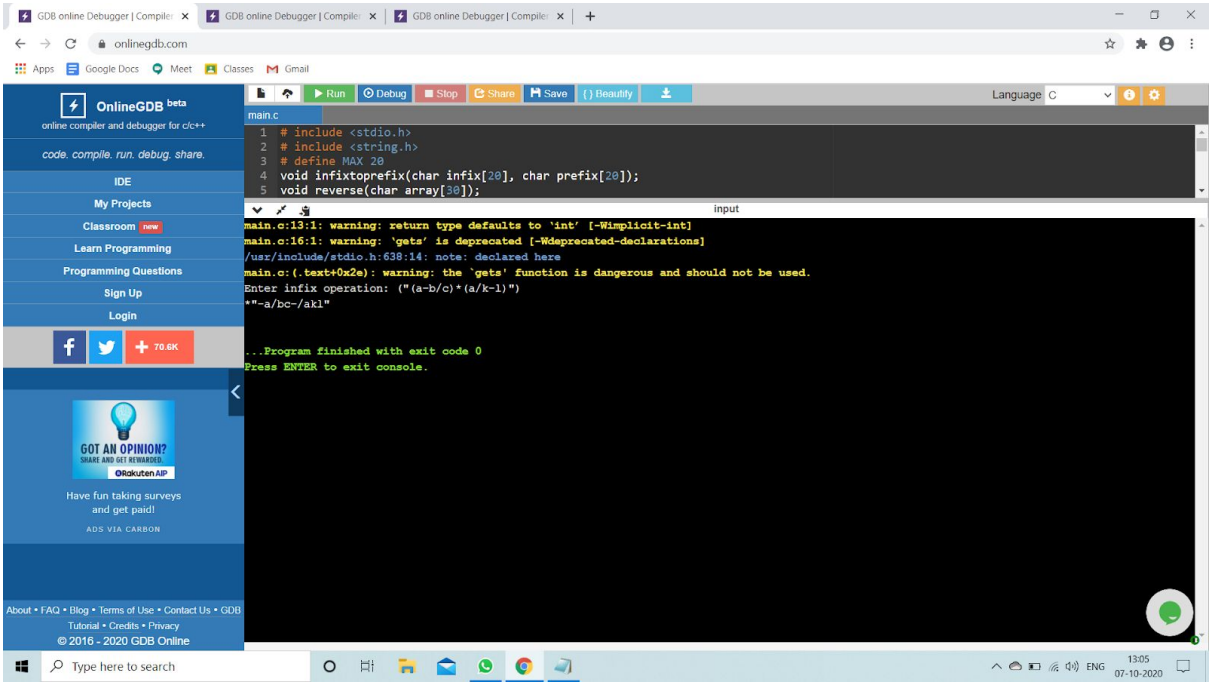
```
1.# include <stdio.h>
# include <string.h>
# define MAX 20
void infixtoprefix(char infix[20], char prefix[20]);
void reverse(char array[30]);
char pop();
void push(char symbol);
int isOperator(char symbol);
int prcd(char symbol);
int top = -1;
char stack[MAX];

main() {
char infix[20], prefix[20], temp;
printf("Enter infix operation: ");
gets(infix);
infixtoprefix(infix, prefix);
reverse(prefix);
puts((prefix));
}
void infixtoprefix(char infix[20], char prefix[20]) {
int i, j = 0;
char symbol;
stack[++top] = '#';
reverse(infix);
for (i = 0; i < strlen(infix); i++) {
symbol = infix[i];
if (isOperator(symbol) == 0) {
  prefix[j] = symbol;
  j++;
} else {
  if (symbol == ')') {
    push(symbol);
  } else if (symbol == '(') {
    while (stack[top] != ')') {
      prefix[j] = pop();
      j++;
    }
    pop();
  } else {
    if (prcd(stack[top]) <= prcd(symbol)) {
      push(symbol);
    } else {
      while (prcd(stack[top]) >= prcd(symbol)) {
        prefix[j] = pop();
        j++;
      }
      push(symbol);
```

```
   }

    }
  }

  }

 while (stack[top] != '#') {
   prefix[j] = pop();
   j++;
  }
 prefix[j] = '\0';
}

void reverse(char array[30]) {

int i, j;
char temp[100];
for (i = strlen(array) - 1, j = 0; i + 1 != 0; --i, ++j) {
 temp[j] = array[i];
}
temp[j] = '\0';
strcpy(array, temp);//copying temp array to array

}

 char pop() {
 char a;
 a = stack[top];
 top--;
 return a;
 }

void push(char symbol) {
top++;
stack[top] = symbol;
}

int prcd(char symbol) {

switch (symbol) {
 case '+':
  case '-':
   return 2;
   break;
 case '*':
  case '/':
   return 4;
```

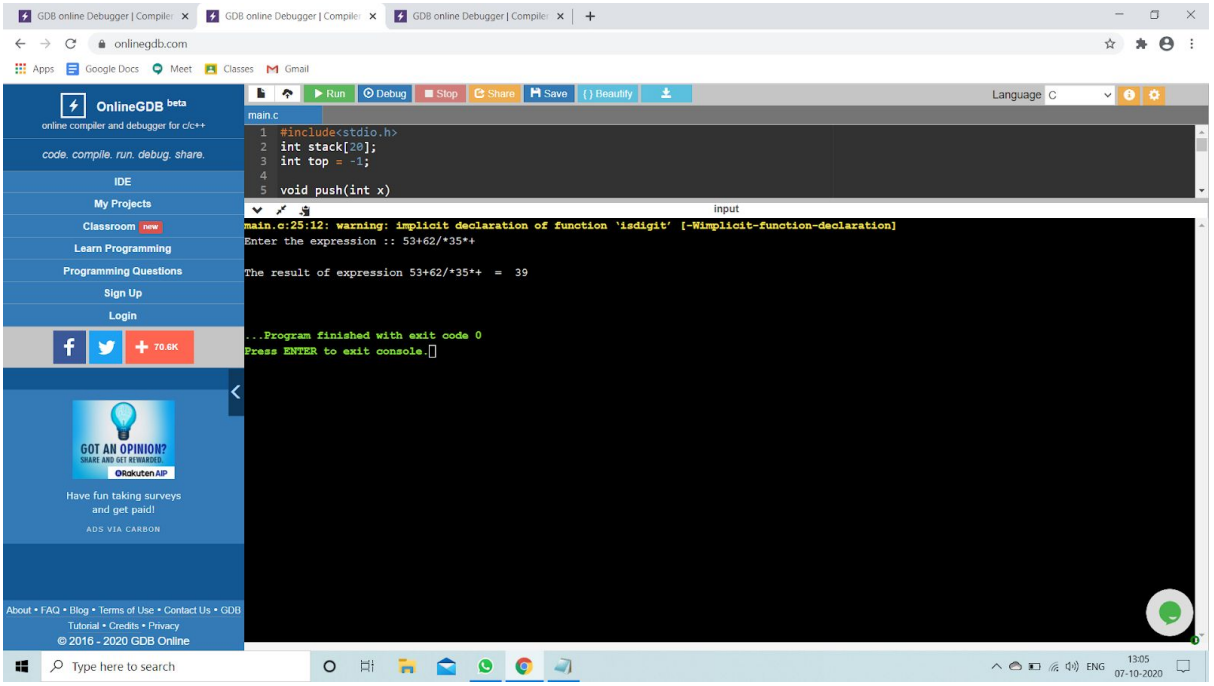
```
    break;
   case '$':
   case '^':
    return 6;
    break;
   case '#':
   case '(':
   case ')':
    return 1;
    break;
  }
}

int isOperator(char symbol) {
switch (symbol) {
case '+':
case '-':
case '*':
case '/':
case '^':
case '$':
case '&':
case '(':
case ')':
  return 1;
  break;
default:
  return 0;

  }
 }
```



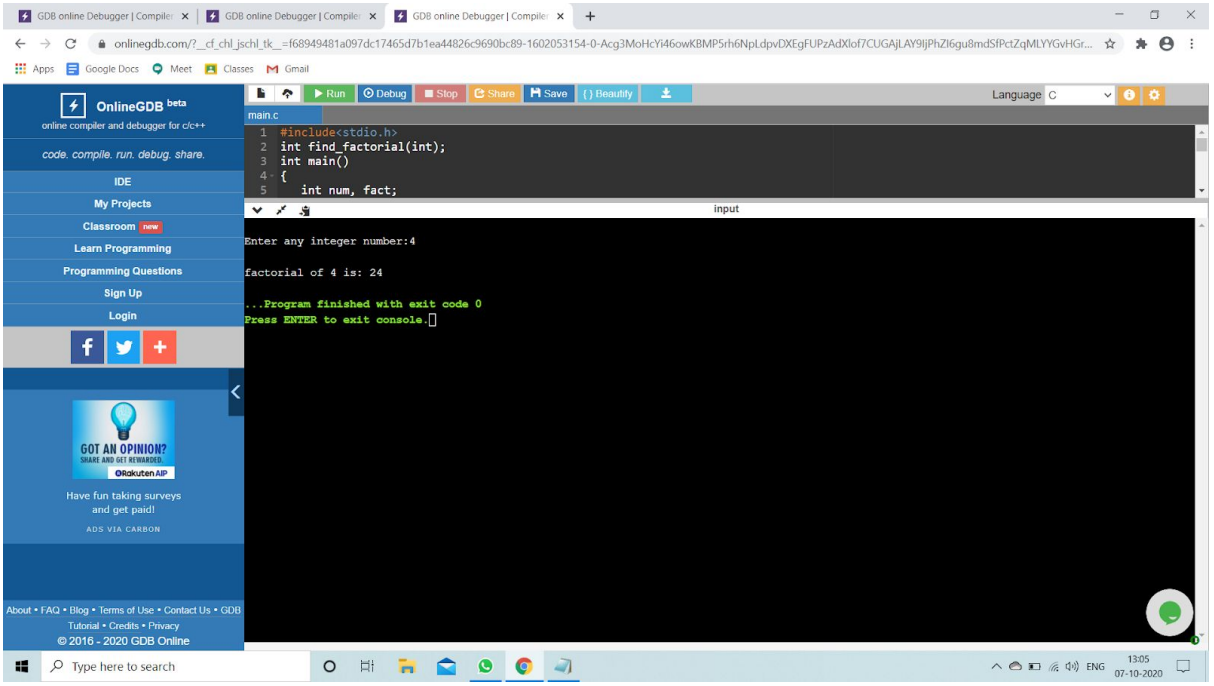
2. #include<stdio.h>

```
int stack[20];
int top = -1;

void push(int x)
{
   stack[++top] = x;
}

int pop()
{
   return stack[top--];
}

int main()
{
   char exp[20];
   char *e;
   int n1,n2,n3,num;
   printf("Enter the expression :: ");
   scanf("%s",exp);
   e = exp;
   while(*e != '\0')
   {
      if(isdigit(*e))
      {
         num = *e - 48;
         push(num);
      }
```

```
        else
        {
           n1 = pop();
           n2 = pop();
           switch(*e)
           {
           case '+':
           {
              n3 = n1 + n2;
              break;
           }
           case '-':
           {
              n3 = n2 - n1;
              break;
           }
           case '*':
           {
              n3 = n1 * n2;
              break;
           }
           case '/':
           {
              n3 = n2 / n1;
              break;
           }
           }
           push(n3);
        }
        e++;
     }
     printf("\nThe result of expression %s  =  %d\n\n",exp,pop());
     return 0;
}
```




```
3.#include<stdio.h>
int find_factorial(int);
int main()
{
   int num, fact;
   printf("\nEnter any integer number:");
   scanf("%d",&num);
   fact =find_factorial(num);
   printf("\nfactorial of %d is: %d",num, fact);
   return 0;
}
int find_factorial(int n)
{
   if(n==0)
      return(1);
   return(n*find_factorial(n-1));
}
```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onlinegdb.com/?__cf_chl_jschl_tk__=f68949481a097dc17465d7b1ea44826c9690bc89-1602053154-0-Acg3MoHcYi46owKBMP5rh6NpLdpvDXEgFUPzAdXlof7CUGAjLAY9IjPhZI6gu8mdSfPctZqMLYYGvHGr...
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Run
Debug
Stop
Share
Save
{ } Beautify
Language C
main.c
#include<stdio.h>
int find_factorial(int);
int main()
{
int num, fact;
input
Enter any integer number:4
factorial of 4 is: 24
...Program finished with exit code 0
Press ENTER to exit console.
Type here to search
ENG
13:05
07-10-2020