NAME – RAJDEEP JAISWAL DATE – 17 NOV 2021

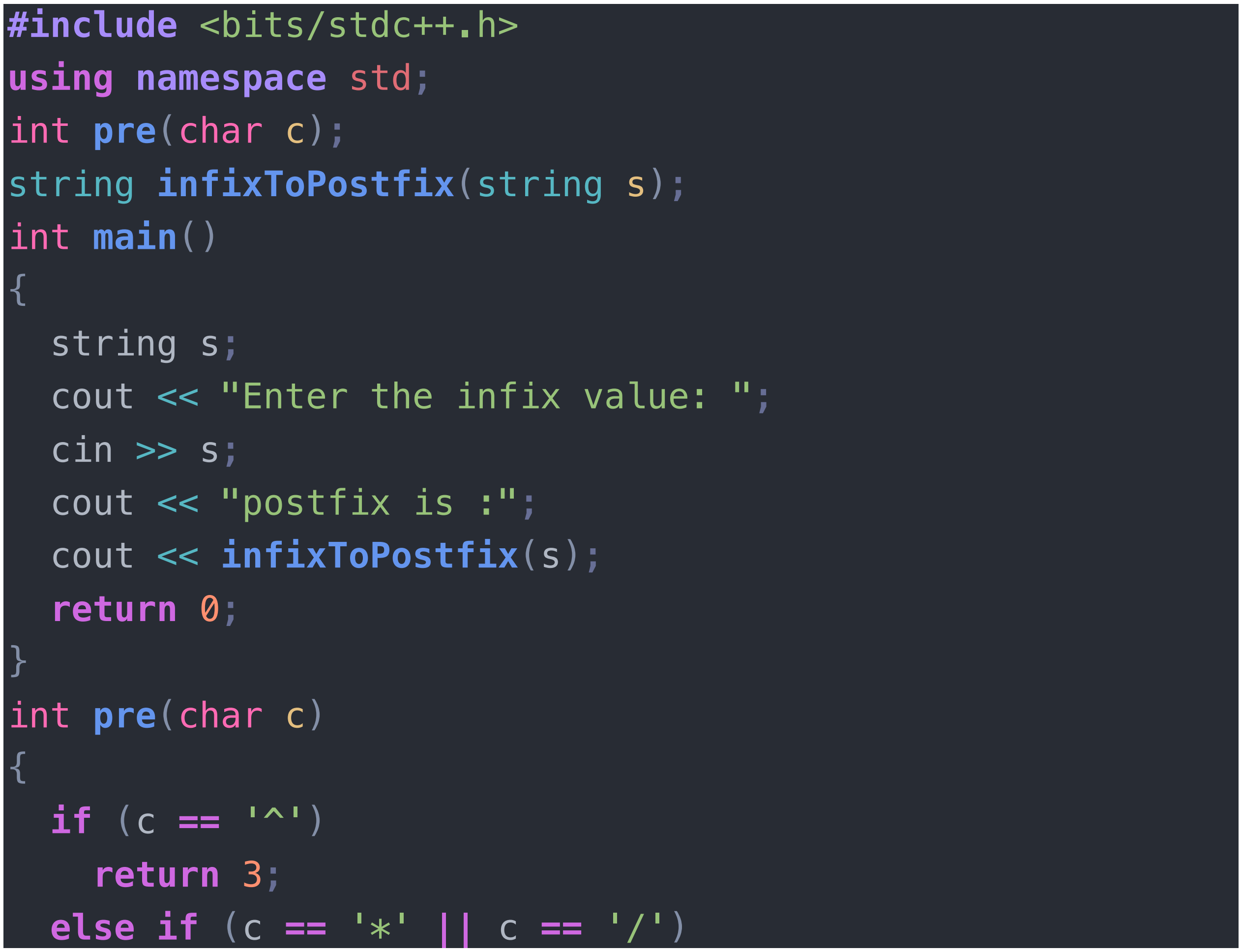
BRANCH – BTECH CSE SEC = 608 - A

UID -20BCS2761 Subject – DS Lab

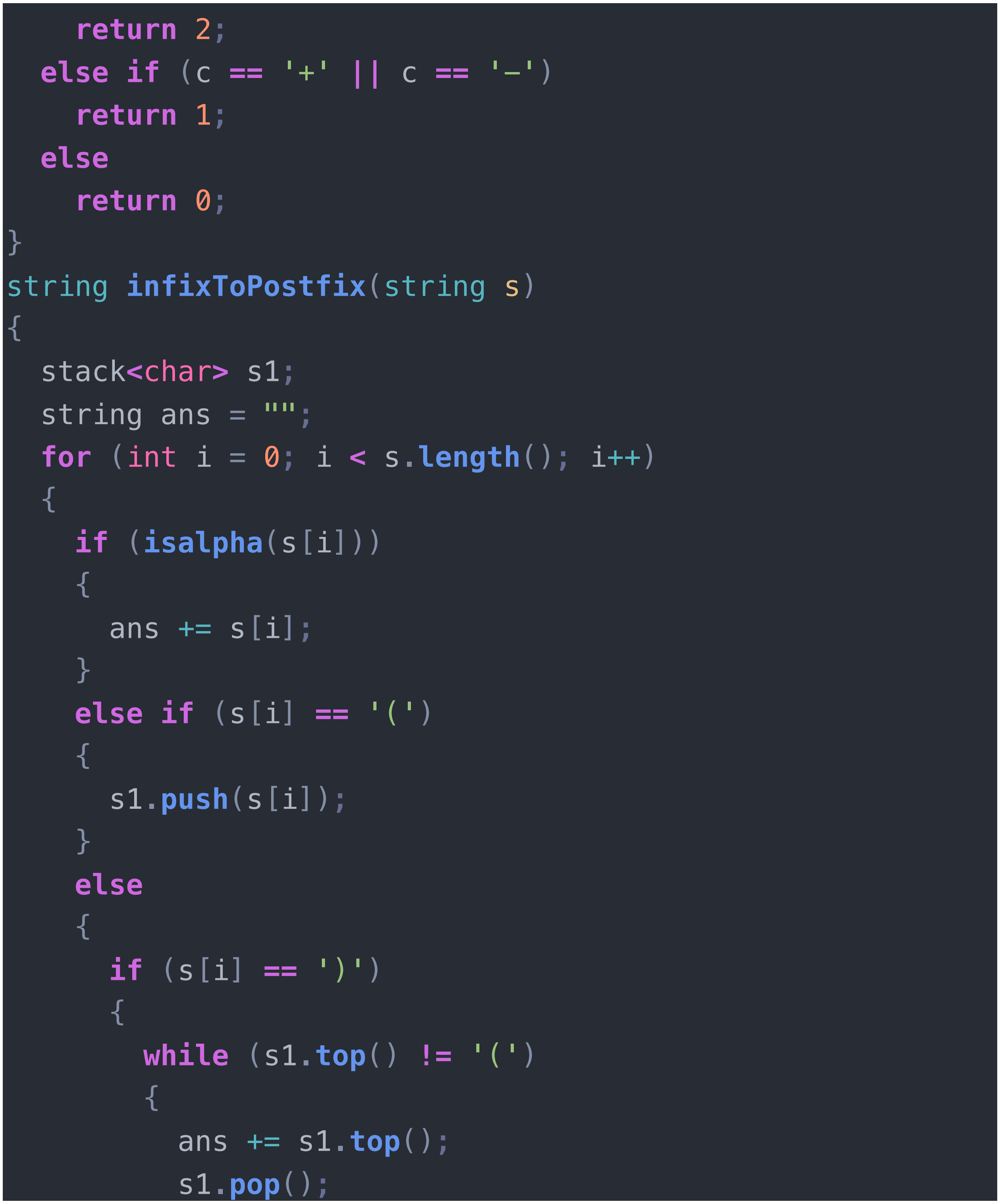
AIM –

Write a program to convert the expression “a+b” into “+ab”

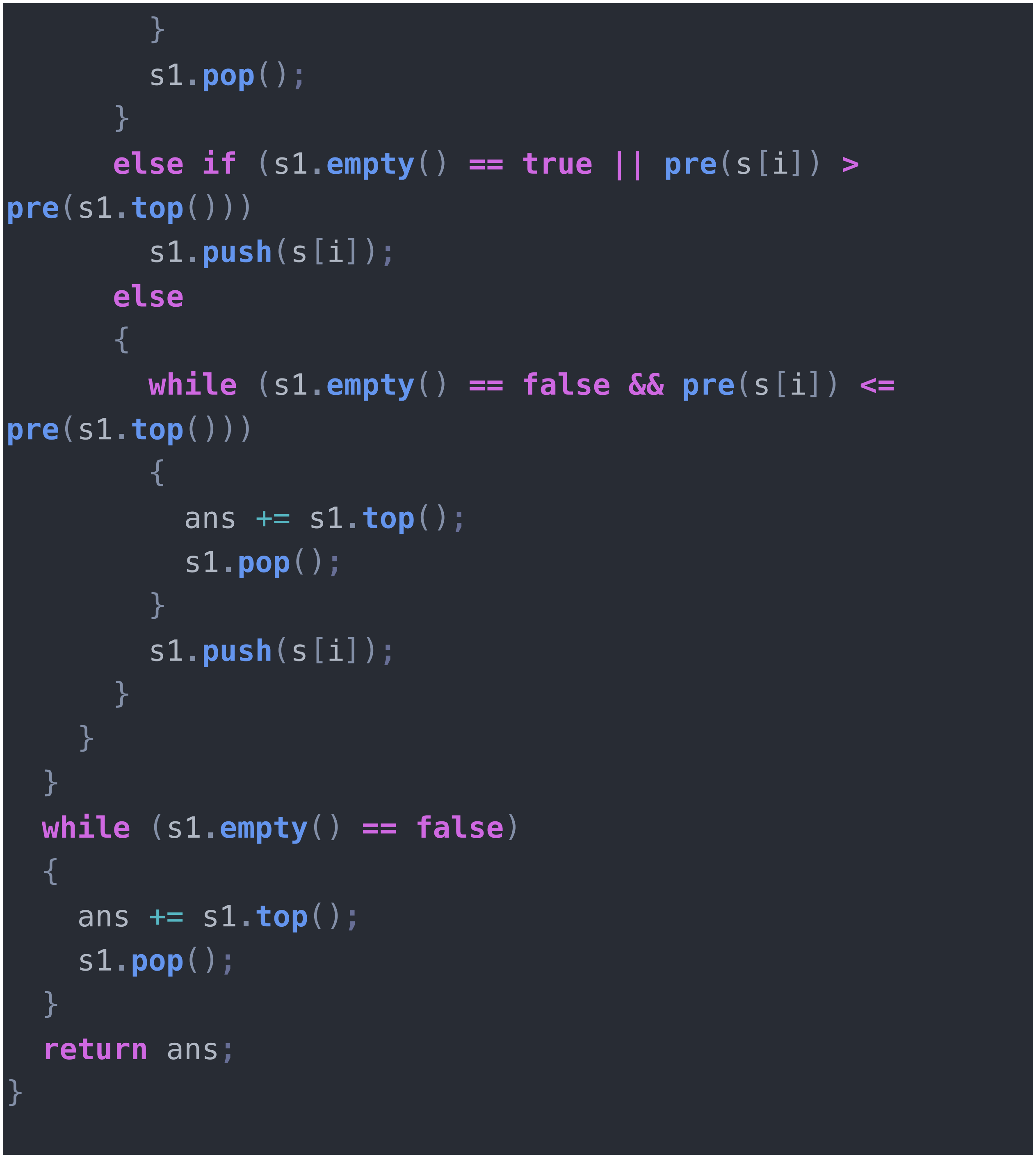
CODE IN TEXT FORM –



```
#include <bits/stdc++.h>
using namespace std;
int pre(char c);
string infixToPostfix(string s);
int main()
{
  string s;
  cout << "Enter the infix value: ";
  cin >> s;
  cout << "postfix is :";
  cout << infixToPostfix(s);
  return 0;
}
int pre(char c)
{
  if (c == '^')
    return 3;
  else if (c == '*' || c == '/')
```

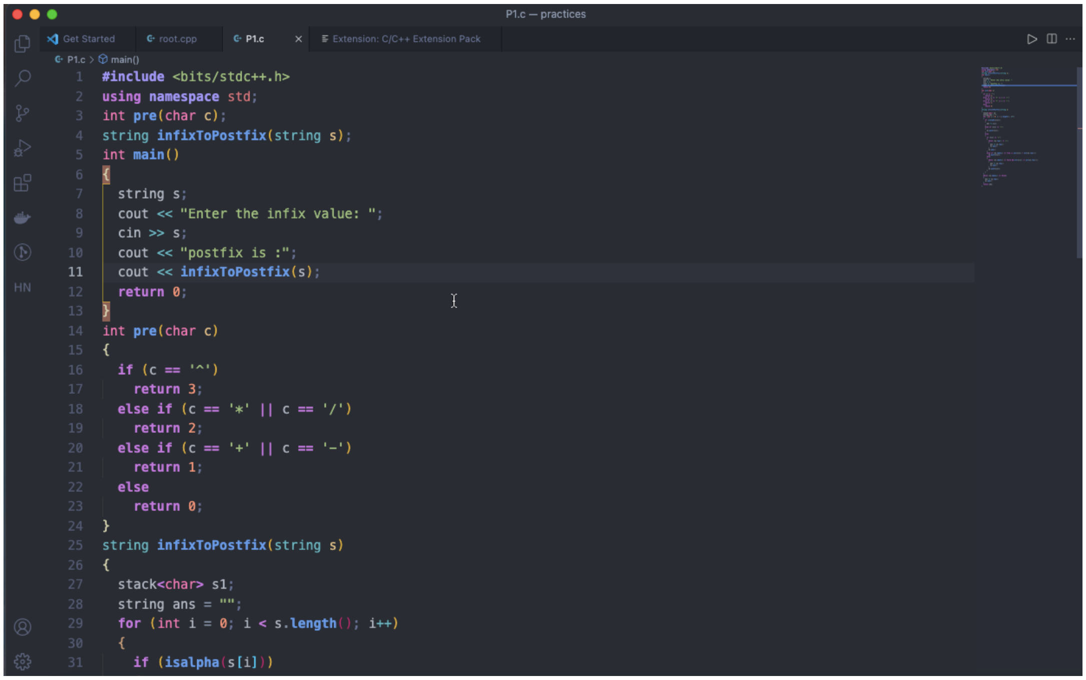


```
    return 2;
  else if (c == '+' || c == '-')
    return 1;
  else
    return 0;
}
string infixToPostfix(string s)
{
  stack<char> s1;
  string ans = "";
  for (int i = 0; i < s.length(); i++)
  {
    if (isalpha(s[i]))
    {
      ans += s[i];
    }
    else if (s[i] == '(')
    {
      s1.push(s[i]);
    }
    else
    {
      if (s[i] == ')')
      {
        while (s1.top() != '(')
        {
          ans += s1.top();
          s1.pop();
```

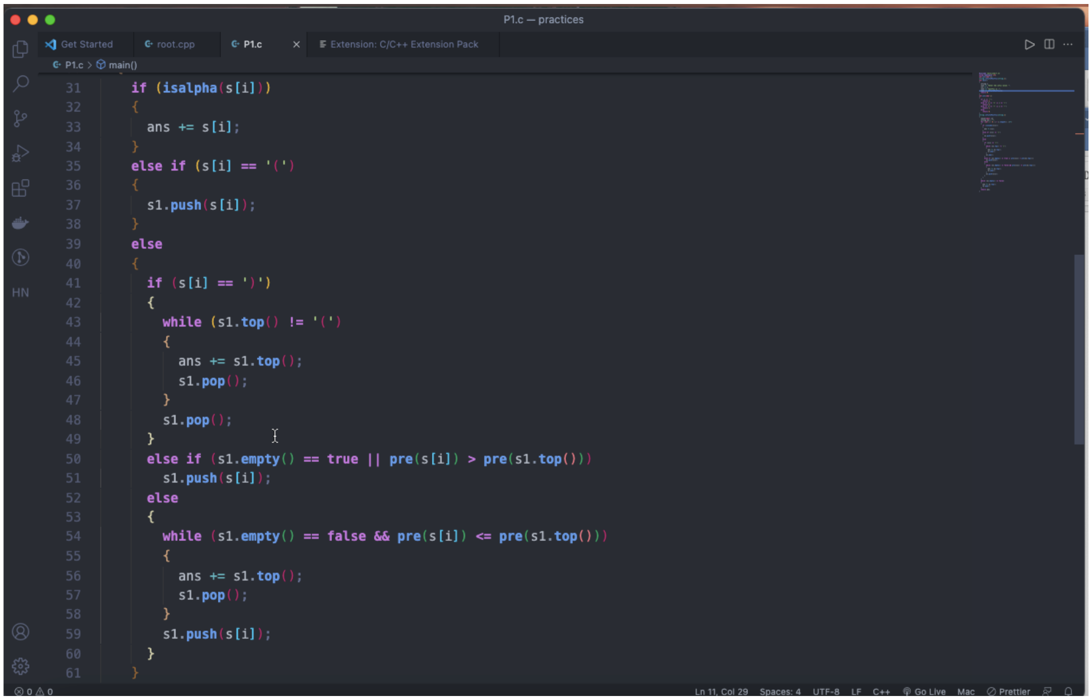


```
        }
        s1.pop();
      }
      else if (s1.empty() == true || pre(s[i]) >
pre(s1.top()))
        s1.push(s[i]);
      else
      {
        while (s1.empty() == false && pre(s[i]) <=
pre(s1.top()))
        {
          ans += s1.top();
          s1.pop();
        }
        s1.push(s[i]);
      }
    }
  }
  while (s1.empty() == false)
  {
    ans += s1.top();
    s1.pop();
  }
  return ans;
}
```

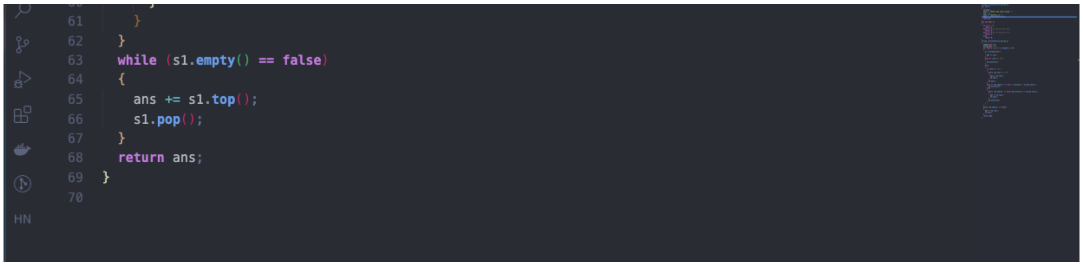
CODE IN COMPILER –



```cpp
#include <bits/stdc++.h>
using namespace std;
int pre(char c);
string infixToPostfix(string s);
int main()
{
  string s;
  cout << "Enter the infix value: ";
  cin >> s;
  cout << "postfix is :";
  cout << infixToPostfix(s);
  return 0;
}
int pre(char c)
{
  if (c == '^')
    return 3;
  else if (c == '*' || c == '/')
    return 2;
  else if (c == '+' || c == '-')
    return 1;
  else
    return 0;
}
string infixToPostfix(string s)
{
  stack<char> s1;
  string ans = "";
  for (int i = 0; i < s.length(); i++)
  {
    if (isalpha(s[i]))
```

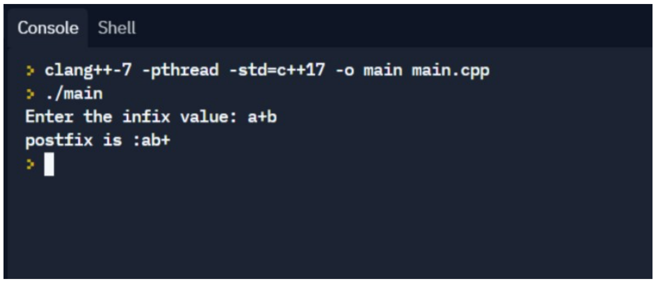


```cpp
    if (isalpha(s[i]))
    {
      ans += s[i];
    }
    else if (s[i] == '(')
    {
      s1.push(s[i]);
    }
    else
    {
      if (s[i] == ')')
      {
        while (s1.top() != '(')
        {
          ans += s1.top();
          s1.pop();
        }
        s1.pop();
      }
      else if (s1.empty() == true || pre(s[i]) > pre(s1.top()))
        s1.push(s[i]);
      else
      {
        while (s1.empty() == false && pre(s[i]) <= pre(s1.top()))
        {
          ans += s1.top();
          s1.pop();
        }
        s1.push(s[i]);
      }
    }
```



```
    }
  }
  while (s1.empty() == false)
  {
    ans += s1.top();
    s1.pop();
  }
  return ans;
}
```

OUTPUT –



```
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
Enter the infix value: a+b
postfix is :ab+
> 
```

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			