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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 –

```
P1.c – practices
Get Started  C- root.cpp  C- P1.c  Extension: C/C++ Extension Pack
C- P1.c > main()
1  #include <bits/stdc++.h>
2  using namespace std;
3  int pre(char c);
4  string infixToPostfix(string s);
5  int main()
6  {
7      string s;
8      cout << "Enter the infix value: ";
9      cin >> s;
10     cout << "postfix is :";
11     cout << infixToPostfix(s);
12     return 0;
13 }
14 int pre(char c)
15 {
16     if (c == '^')
17         return 3;
18     else if (c == '*' || c == '/')
19         return 2;
20     else if (c == '+' || c == '-')
21         return 1;
22     else
23         return 0;
24 }
25 string infixToPostfix(string s)
26 {
27     stack<char> s1;
28     string ans = "";
29     for (int i = 0; i < s.length(); i++)
30     {
31         if (isalpha(s[i]))
```

```
P1.c – practices
Get Started  C- root.cpp  C- P1.c  Extension: C/C++ Extension Pack
C- P1.c > main()
31     if (isalpha(s[i]))
32     {
33         ans += s[i];
34     }
35     else if (s[i] == '(')
36     {
37         s1.push(s[i]);
38     }
39     else
40     {
41         if (s[i] == ')')
42         {
43             while (s1.top() != '(')
44             {
45                 ans += s1.top();
46                 s1.pop();
47             }
48             s1.pop();
49         }
50         else if (s1.empty() == true || pre(s[i]) > pre(s1.top()))
51             s1.push(s[i]);
52         else
53         {
54             while (s1.empty() == false && pre(s[i]) <= pre(s1.top()))
55             {
56                 ans += s1.top();
57                 s1.pop();
58             }
59             s1.push(s[i]);
60         }
61     }
}
Ln 11, Col 29  Spaces: 4  UTF-8  LF  C++  @ Go Live  Mac  Prettier
```

```

61     }
62   }
63   while (s1.empty() == false)
64   {
65     ans += s1.top();
66     s1.pop();
67   }
68   return ans;
69 }
70
HN
  
```

OUTPUT –

```

Console Shell
> 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.			