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DEPARTMENT OF MASTER OF COMPUTER APPLICATION

CLASS: F.Y. MCA　　　　　　**SEM: I**

COURSE CODE: MC501　　　**SUBJECT NAME: DATA STRUCTURES LAB**

ROLL NO. : _2023510001___　　　　　　**BATCH: _D_**

NAME: __VAIBHAV AGARWAL____

<center>**EXPERIMENT NO: 02**</center>

EXPERIMENT TITLE: Application of <u>stack</u> - prefix to postfix conversion

CODE:

```
#include <iostream>
#include <string>
using using
class myStack{
```

```cpp
bool isEmpty(){
if(top==-1){
return true;
}
else{
return false;
}
}
void push(string data){
if(isFull()){
cout<<"Error: Stack is full"<<endl;
}
else{
arr[++top]=data;
}
}
string pop(){
if(isEmpty()){
cout<<"Error: Stack is empty"<<endl;
}
else{
return arr[top--];
}
}
```

```
}
string peek(){
return arr[top];
}
};
bool isNum(char a){
if(a>='0' && a<='9'){
return true;
}
else{
return false;
}
}
bool isOp(char a){
switch(a){
case '+':
case '-':
case '/':
case '*':
case '%':
return true;
break;
}
```

```
    return false;
}
string toPostfix(string exp){
myStack S;
string result="";
for(int i=exp.length()-1;i>=0;i--){
if(exp[i]==' '||exp[i]==','){
continue;
}
else if(isNum(exp[i])){
string temp1(1, exp[i]);
S.push(temp1);
}
else if(!S.isEmpty() && isOp(exp[i])){
char op = exp[i];
string num2 = S.pop();
string num1 = S.pop();
string temp = num2+ num1+op;
S.push(temp);
}
}
result = S.pop();
return result;
}
```

```cpp
int main(){
string exp;
cout<<"Enter a prefix expression: ";
cin>>exp;
cout<<"Postfix Conversion:"<<endl;
cout<<toPostfix(exp);
return 0;
  }
```