

Roll No:7

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Practical No:4

Stack_7.cpp

```
#include<iostream>
#define MAX 100

using namespace std;

class Stack
{
public:
    int n;
    int size;
    int top;
    int stack[MAX];
    Stack()
    {
        top=-1;
    }
    void push();
    void pop();
    void display();
};

void Stack::push()
{
    if(top>=size)
    {
        cout<<"stack overflow"<<endl;
    }

    else
    {
        top=top+1;
        cout<<"enter the element to be pushed"<<endl;
        cin>>n;
        stack[top]=n;
        cout<<"the element"<<n<<"has been inserted at location"<<top<<endl;
    }
}

void Stack::pop()
{
    if(top== -1)
    {
        cout<<"stack underflow";
```

```
}  
else  
{  
top--;  
cout<<"element"<<stack[top]<<" has been popped out"<<endl;  
}
```

```
}
```

```
void Stack::display()  
{  
if(top==-1)  
{  
cout<<"stack is empty"<<endl;  
}
```

```
else  
{  
cout<<"the stack is : "<<endl;
```

```
for (int i=0;i<=top;i++)  
{  
cout<<stack[i]<<endl;  
}  
}  
}
```

```
int main()  
{  
Stack s;  
int ch;
```

```
cout<<" enter the size of stack array"<<endl;  
cin>>s.size;
```

```
do{  
cout<<"enter the choice"<<endl;  
cout<<"1:push"<<endl;  
cout<<"2:pop"<<endl;  
cout<<"3:display"<<endl;  
cout<<"4:exit"<<endl;
```

```
cin>>ch;
```

```
switch(ch)  
{  
case 1:  
s.push();  
break;  
case 2:
```

```

        s.pop();
break;

case 3:
s.display();

break;
case 4:
break;
default:
cout<<" enter the choice from 1 to 4 onl;y"<<endl;
break;
}
}while(ch!=4);
return 0;
}

```

output:

```

mca@mca-OptiPlex-390:~/Documents/ds$ clear
mca@mca-OptiPlex-390:~/Documents/ds$ g++ stackk.cpp -o s
mca@mca-OptiPlex-390:~/Documents/ds$ ./s
enter the size of stack array
5
enter the choice
1:push
2:pop
3:display
4:exit
1
enter the element to be pushed
4
the element4has been inserted at locatton0
enter the choice
1:push
2:pop
3:display
4:exit
2
element-1 has been popped out
enter the choice
1:push
2:pop
3:display
4:exit
3
stack is empty
enter the choice
1:push
2:pop
3:display
4:exit
4
mca@mca-OptiPlex-390:~/Documents/ds$

```