EXPERIMENT NO.3.1

STACK USING ARRAY:

```
#include<iostream>

#define max 3

using namespace std; class
Stack
{       int a[max],top; public:

        bool isFull(){ return top ==
                max-1;
}

        bool isEmpty(){ return
                top==-1;
}

        void push(){ int
                temp;
                if(!isFull()){ cout<<"Enter the Data
                        :";
          cin>>temp;
                        a[++top]=temp;
}
else{
                            cout<<"Stack OverFlow"<<endl;
}
} void pop(){ int temp; if(!isEmpty()){ cout<<"Value
        :"<<a[top--]<<endl;
}
                else{ cout<<"Stack UnderFlow "<<endl;
}
} void display(){
int i;
cout<<"Value :"<<endl; for(i=top;i>=0;i--) cout<< i
                <<"---->"<<a[i]<<endl;
}

        void menu(){ top=-1;
      int ch;
```

```
          do{ cout<<"Top : "<<top<<endl;
cout<<"******MENU******"<<endl
                              <<"1.Push"<<endl
                  <<"2.Pop"<<endl
                        <<"3.Display"<<endl
                           <<"4.Exit"<<endl
                               <<"Enter Your Choice :";
             cin>>ch;

                  switch(ch){
                  case 1:push();
                  break;
case 2:pop();
                              break;
           case 3:display();
                               break;
                  case 4:
                            break;
           default:cout<<"Wrong Option \n";
                  }
         }while(ch!=4);
           } };

int main()
{
s.menu();
}
```

OUTPUT:

```
Top : -1
******MENU******
1.Push
2.Pop
3.Display
4.Exit
Enter Your Choice :1
Enter the Data :10
Top : 0
******MENU******
1.Push
2.Pop
3.Display
```

```
4.Exit
Enter Your Choice :1
Enter the Data :20
Top : 1
******MENU******
1.Push
2.Pop
3.Display
4.Exit
Enter Your Choice :1
Enter the Data :30
Top : 2
******MENU******
1.Push
2.Pop
3.Display
4.Exit
Enter Your Choice :3 Value :
2---->30
1---->20
0---->10
Top : 2
******MENU******
1.Push
2.Pop
3.Display
4.Exit
Enter Your Choice :2
Value :30
Top : 1
******MENU******
1.Push
2.Pop
3.Display
4.Exit
```