**Assignment 1:**

public class Stack {

int a1[];

int top;

Stack(int n){

a1=new int[n];

top=-1;

}

public void push(int x){

if(top==a1.length-1)

System.out.println("\nStack is full. ");

else

a1[++top]=x;

}

public int pop(){

if(top<0){

System.out.println("\nStack underflow. ");

return 0;

}

else

return a1[top--];

}

public void printStack(){

for(int i=0;i<=top;i++)

System.out.print(a1[i]+" ");

System.out.println();

}

}

import java.util.Scanner;

public class StackTest {

public static void main(String args[]){

Stack s= new Stack(6);

Scanner sc= new Scanner(System.in);

boolean menu=true;

int choice;

while(menu==true){

System.out.println("\nMenu\n1.Push 2.Pop\n3.Display 4.Exit");

System.out.println("Enter your choice: ");

choice=sc.nextInt();

switch(choice){

case 1:

System.out.println("Enter a number. ");

s.push(sc.nextInt());

break;

case 2:

s.pop();

break;

case 3:

s.printStack();

break;

case 4:

menu=false;

break;

}

}

}

}

**Assignment 2:**

public class Queue {

int a1[];

int size=0,front,rear,capacity;

Queue(int n){

this.capacity=n;

a1=new int[this.capacity];

front=0;

rear=-1;

}

public void push(int x){

if(size==capacity)

System.out.println("Queue is full");

else{

rear++;

if(rear == capacity){

rear = 0;

}

a1[rear] = x;

size++;

}

}

public void pop(){

if(size==0)

System.out.println("Queue is empty");

else {

front++;

if(front == capacity){

front = 0;

}

size--;

}

}

public void printQueue(){

if(size==0)

System.out.println("Empty");

else{

int num = (rear+capacity-front)%capacity + 1;

System.out.print("Queue: ");

for(int i=0;i<num;i++){

int index = (front+i)%capacity;

System.out.print(a1[index]+" ");

}

System.out.println();

}

}

}

import java.util.Scanner;

public class QueueTest {

public static void main(String args[]){

Queue q=new Queue(3);

Scanner sc=new Scanner(System.in);

boolean menu=true;

int choice;

while(menu==true){

System.out.println("\nMenu\n1.Push 2.Pop\n3.Display 4.Exit");

System.out.println("Enter your choice: ");

choice=sc.nextInt();

switch(choice){

case 1:

System.out.println("Enter a number. ");

q.push(sc.nextInt());

break;

case 2:

q.pop();

break;

case 3:

q.printQueue();

break;

case 4:

menu=false;

break;

}

}

}

}