PROGRAM 1

**1.A)**

Create a Java class called Student with the following details as variables within it.

(i) USN

(ii) Name

(iii) Branch

(iv) Phone

Write a Java program to create n Student objects and print the USN, Name, Branch, and Phone of these objects with suitable headings.

package labprograms;

import java.util.Scanner;

class Stud

{

String usn,name,phno,branch;

Stud(String usn,String name,String branch,String phno)

{

this.usn=usn;

this.name=name;

this.branch=branch;

this.phno=phno;

}

void display()

{

System.out.println(usn+"\t\t"+name+"\t\t"+branch+"\t\t"+phno);

}

}

public class p1a {

public static void main(String[] args) {

String usn,name,branch,phno;

System.out.println("Enter the number of Students info you want to store : ");

Scanner sc=new Scanner(System.in);

int n=sc.nextInt();

Stud[] s=new Stud[n];

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

{

System.out.println("Enter details of "+(i+1)+" student : ");

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

usn=sc.next();

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

name=sc.next();

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

branch=sc.next();

System.out.print("Phone Number : ");

phno=sc.next();

s[i]=new Stud(usn,name,branch,phno);

}

System.out.println("\nStudent details :: ");

System.out.println("USN"+"\t\t\t"+"NAME"+"\t\t"+"BRANCH"+"\t\t"+"PHNO");

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

s[i].display();

sc.close();

}

}

**1.B)**

Write a Java program to implement the Stack using arrays. Write Push(), Pop(), and

Display() methods to demonstrate its working.

package labprograms;

import java.util.Scanner;

class Stack {

int[] s;

int top;

int size;

Stack(int size) {

this.size=size;

s=new int[size];

top=-1;

}

void push(int element) {

if(top==size-1)

System.out.println("Stack Overflow");

else

s[++top]=element;

}

void pop() {

if(top==-1)

System.out.println("Stack Underflow");

else

System.out.println("Popped element is "+s[top--]);

}

void display() {

if(top==-1)

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

else {

System.out.println("Stack elements are : ");

for(int i=top;i>=0;i--)

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

} } }

public class p1b {

public static void main(String[] args) {

int element,choice,size;

Scanner sc=new Scanner(System.in);

System.out.print("Enter stack size : ");

size=sc.nextInt();

Stack st=new Stack(size);

for(;;) {

System.out.println("\nStack Operations : ");

System.out.println("1.Push");

System.out.println("2.Pop");

System.out.println("3.Display");

System.out.println("4.Exit");

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

choice=sc.nextInt();

switch(choice) {

case 1:

System.out.println("Enter element to push : ");

element=sc.nextInt();

st.push(element);

break;

case 2:

st.pop();

break;

case 3:

st.display();

break;

default: System.exit(0);

}

sc.close();

}

} }