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**Assignment: Java Practical - 20/09/2024**

**Program -1**

import java.util.Arrays;

import java.util.Scanner;

class Program1 {

private int[] data;

private int size;

private final int EMPTY\_SPACE = -1;

public Program1(int capacity) {

data = new int[capacity];

size = 0;

Arrays.fill(data, EMPTY\_SPACE);

}

public void initializeData() {

if (data.length >= 7) {

for (int i = 0; i < 7; i++) {

data[i] = (i + 1) \* 10;

size++;

}

} else {

System.out.println("Array is too small to add initial values.");

}

}

public void insert(int index, int value) {

if (size == data.length) {

System.out.println("Array is full, cannot insert.");

return;

}

if (index < 0 || index > size) {

System.out.println("Invalid index.");

return;

}

for (int i = size; i > index; i--) {

data[i] = data[i - 1];

}

data[index] = value;

size++;

System.out.println("Value inserted successfully.");

}

public void delete(int index) {

if (index < 0 || index >= size) {

System.out.println("Invalid index.");

return;

}

for (int i = index; i < size - 1; i++) {

data[i] = data[i + 1];

}

data[size - 1] = EMPTY\_SPACE;

size--;

System.out.println("Value deleted successfully.");

}

public void print() {

System.out.println(Arrays.toString(data));

}

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

Program1 array = new Program1(10);

array.initializeData();

while (true) {

System.out.println("\nChoose an action:");

System.out.println("1. Insert a value");

System.out.println("2. Delete a value");

System.out.println("3. Print the array");

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

int choice = input.nextInt();

switch (choice) {

case 1:

System.out.print("Enter index to insert at: ");

int insertIndex = input.nextInt();

System.out.print("Enter value to insert: ");

int insertValue = input.nextInt();

array.insert(insertIndex, insertValue);

break;

case 2:

System.out.print("Enter index to delete from: ");

int deleteIndex = input.nextInt();

array.delete(deleteIndex);

break;

case 3:

array.print();

break;

case 4:

System.out.println("Exiting...");

input.close();

return;

default:

System.out.println("Invalid choice, please try again.");

}

}

}

}

**Program - 2**

public class program2 {

public static void MAX\_MIN(int[][] matrix) {

for (int i = 0; i < matrix.length; i++) {

int rowMax = matrix[i][0];

int rowMin = matrix[i][0];

for (int j = 1; j < matrix[i].length; j++) {

if (matrix[i][j] > rowMax) {

rowMax = matrix[i][j];

}

if (matrix[i][j] < rowMin) {

rowMin = matrix[i][j];

}

}

System.out.println("Row " + (i + 1) + " - Max: " + rowMax + ", Min: " + rowMin);

}

}

public static void main(String[] args) {

int[][] matrix = {

{1, 5, 3},

{8, 2, 9},

{4, 6, 7}

};

MAX\_MIN(matrix);

}

}