Q10)

#include <iostream>

using namespace std;

class ArraySet

{

int \*arr;

int n;

public:

ArraySet(int a)

{

n = a;

arr = new int[a];

}

void takeInput()

{

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

cin >> arr[i];

}

void displaySet()

{

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

cout << arr[i] << " ";

cout << endl;

}

void permutationsWithoutRepetition(int pos)

{

if (pos == n)

{

displaySet();

return;

}

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

{

swap(arr[pos], arr[i]);

permutationsWithoutRepetition(pos + 1);

swap(arr[pos], arr[i]);

}

}

void permutationsWithRepetition(int permute[], int index)

{

// base case

if (index == n)

{

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

cout << permute[i] << " ";

cout << endl;

return;

}

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

{

permute[index] = arr[i];

permutationsWithRepetition(permute, index + 1);

}

}

};

int main()

{

int n;

cout << "Enter size of set: ";

cin >> n;

// declaring array set

ArraySet A(n);

cout << "Enter elements of set" << endl;

A.takeInput();

int arr[n];

cout << "-------------Permutations With Repetition-------" << endl;

A.permutationsWithRepetition(arr, 0);

cout << "-------------Permutations Without Repetition-------" << endl;

A.permutationsWithoutRepetition(0);

return 0;

}

