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Q1:

Count number of repetition

#include <iostream>

using namespace std;

int count(int n, int d){

if(n<=0)

return 0;

int rem = n%10;

if(rem == d){

return 1 + count(n/10, d);

}

return count(n/10, d);

}

int main() {

int n;

cin>>n;

int d;

cin>>d;

int x = count(n, d);

cout<<x;

return 0;

}

**Q2;**

**Repeating number**

**#include<iostream>**

**#include<conio.h>**

**using namespace std;**

**int main()**

**{**

**int i,arr[20],j,no;**

**cout<<"Enter Size of array: ";**

**cin>>no;**

**cout<<"Enter num in array: ";**

**for(i=0;i<no;i++)**

**{**

**cin>>arr[i];**

**}**

**cout<<"Duplicate Values are: ";**

**for(i=0; i<no; i++)**

**{**

**for(j=i+1;j<no;j++)**

**{**

**if(arr[i]==arr[j])**

**{**

**cout<<"\n"<<arr[i];**

**}**

**}**

**}**

**return 0;**

**}**

**Q3: remove the given number and print the number.**

**#include <iostream>**

**using namespace std;**

**int main() {**

**int i, arr[20], j, no, n, k;**

**cout << "Enter Size of array: ";**

**cin >> no;**

**cout << "Enter num in array: ";**

**for (i = 0; i < no; i++) {**

**cin >> arr[i];**

**}**

**cout << "Number to be deleted: ";**

**cin >> n;**

**for (j = 0; j < no; j++) {**

**if (arr[j] == n) {**

**for (k = j; k < (no - 1); k++) {**

**arr[k] = arr[k + 1];**

**}**

**j--;**

**no--;**

**}**

**}**

**cout << "Array after deletion: ";**

**for (i = 0; i < no; i++) {**

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

**}**

**return 0;**

**}**

**Q4 write a program to insert an element in an array at the given position. If the position where the element is to be inserted is greater than the size of the array display “invalid input”.**

**Functional requirements:**

**Int insert(int\*,int,int,int);**

**Int\* createarray(int)**

**Int getelements(int\*,int)**

**Input format:**

**Input contains 3 integers and 1 array.**

**The first integer corresponds to the size of array.**

**The second integer corresponds to the position where the element is to be inserted**

**The third integer corresponds to the element to be inserted**

**#include <iostream>**

**using namespace std;**

**int main()**

**{**

**int n, pos, element;**

**cin >> n >> pos >> element;**

**int arr[n];**

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

**{**

**cin >> arr[i];**

**}**

**if (pos > n)**

**{**

**cout << "Invalid input";**

**}**

**else**

**{**

**for (int j = n - 1; j >= pos; j--)**

**{**

**arr[j] = arr[j - 1];**

**}**

**arr[pos - 1] = element;**

**}**

**for (int k = 0; k < n; k++)**

**{**

**cout << arr[k] << " ";**

**}**

**return 0;**

**}**

**Q4 with functions**

**#include <iostream>**

**using namespace std;**

**int\* createArray(int size) {**

**return new int[size];**

**}**

**void getElements(int\* arr, int size) {**

**cout << "Enter " << size << " elements for the array:\n";**

**for (int i = 0; i < size; ++i) {**

**cin >> arr[i];**

**}**

**}**

**int insert(int\* arr, int size, int position, int element) {**

**if (position < 0 || position > size) {**

**cout << "Invalid input.\n";**

**return size;**

**}**

**int newSize = size + 1;**

**int\* newArr = new int[newSize];**

**for (int i = 0; i < position; ++i) {**

**newArr[i] = arr[i];**

**}**

**newArr[position] = element;**

**for (int i = position; i < size; ++i) {**

**newArr[i + 1] = arr[i];**

**}**

**delete[] arr;**

**return newSize;**

**}**

**int main() {**

**int size, position, element;**

**cout << "Enter the size of the array: ";**

**cin >> size;**

**int\* arr = createArray(size);**

**getElements(arr, size);**

**cout << "Enter the position to insert: ";**

**cin >> position;**

**cout << "Enter the element to insert: ";**

**cin >> element;**

**size = insert(arr, size, position, element);**

**cout << "Array after insertion:\n";**

**for (int i = 0; i < size; ++i) {**

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

**}**

**delete[] arr;**

**return 0;**

**}**