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DSA BOOTCAMP ASSIGNMENT

Q1] WAP to swap two nos.

⇒
```
#include <iostream>
using namespace std;
int main()
{
    int n1, n2, temp;
    cout << "Enter 1st no. ";
    cin >> n1;
    cout << "Enter 2nd no. ";
    cin >> n2;

    cout << "Before Swapping : 1st no: "
         << n1 << "2nd no.: " << n2;

    temp = n1;
    n1 = n2;
    n2 = temp;
    cout << "In After Swapping : 1st no:"
         << n1 << " 2nd no. : " << n2;

    return 0;
}
```

Q2] WAP to find largest no. among three nos. entered by the user.

⇒

```
#include <iostream>
using namespace std;
int main()
  {
   float n1, n2, n3;
   cout << "Enter 3 nos. : ";
   cin >> n1 >> n2 >> n3;
   if (n1 >= n2)
   {
     if (n1 >= n3)
      cout << "largest no : " << n1;
     else
      cout << "Largest no. : " << n3;
   }
  else {
     if (n2 >= n3)
      cout << "largest no." << n2;
     else
      cout << "Largest no." << n3;
   }
  return 0;
```

Q37 WAP to check whether a year entered by a user is leap year or not.

⇒
```
#include <iostream>
using namespace std;
int main()
{
  int year;
  cout << "Enter a year: ";
  cin >> year
  if (year % 4 == 0)
  {
    if (year % 100 == 0)
    {
      if (year % 400 == 0)
      cout << year << " is a leap year";
      else
      cout << year << " is not leap year";
    }
  else
    cout << year << " is a leap year";
  }
  else
    cout << year << " is not leap year";
  return 0;
}
```

Q4) WAP to display fibonacci series upto n^{th} term

⇒
```
#include <iostream>
using namespace std;
int main()
{
  int n, t1=0, t2=1, nextterm=0;
  cout << "Enter no. of terms :";
  cin >> n;
  cout << "Fibonacci Series :";
  for (int i=1; i<=n; i++)
  {
    if (i==1)
    {
      cout << t1 << " , ";
      continue;
    }
    if (i==2)
    {
      cout << t2 << " , ";
      continue;
    }
    nextterm = t1 + t2;
    t1 = t2;
    t2 = nextterm;
    cout << nextterm << " , ";
  }
  return 0;
}
```

Q5] WAP to check whether a no. is prime or not

⇒

```
#include <iostream>
using namespace std;
int main()
{
  int i, n;
  bool isPrime = true;
  cout << "Enter a +ve integer: ";
  cin >> n;
  if (n == 0 || n == 1)
  {
     isPrime = false;
  }
  else
  {
    for (i=2; i<=n/2; ++i)
    {
      if (n%i == 0)
      {
        isPrime = false;
        break;
      }
    }
  }

  if (isPrime)
    cout << n << " is a prime no";
```

```
    else
        cout << n << " is not prime no";
    return 0;
}
```

Q6) Print this pattern using loops

For n = 5

```
        *
      *   *
    *   *   *
  *   *   *   *
*   *   *   *   *
```

⇒

```
#include <iostream>
using namespace std;
void triangle (int n)
{
    int k = 2 * n - 2;
    for (int i = 0; i < n; i++)
    {
        for (int j = 0; j < k; j++)
            cout << " ";
        k = k - 1;
        for (int j = 0; j <= i; j++)
        {
            cout << " * ";
        }
        cout << endl;
    }
}
```

```
int main()
{
    int n = 5;
    triangle(n);
    return 0;
}
```

Q7 Write a prog. that takes n elements from user & displays the 2nd largest element ~~from~~ of an array.

⇒
```
#include <iostream>
using namespace std;
int main()
{
    int n, num[50], largest, second;
    cout << "Enter no. of elements: ";
    cin >> n;
    for (int i=0; i<n; i++)
    {
     cout << "Enter Array Element "
                    << (i+1) << ":";
     cin >> num[i];
    }
```

```
if (num[0] < num[1])
{
  largest = num[1];
  second = num[0];
}
else {
  largest = num[0];
  second = num[1];
}
for (int i=2; i<n; i++)
{
  if (num[i] > largest)
  {
    second = largest;
    largest = num[i];
  }
  else if (num[i] > second && num[i] != largest)
  {
    second = num[i];
  }
}
cout << "second largest element in array
        is " << second;
return 0;
}
```

8]

```
# include <cmath>
# include <cstdio>
# include <vector>
# include <iostream>
# include <algorithm>
using namespace std;

int main()
{
    int N, d, i;
    cin >> N >> d;
    int start = N - d;
    int * arr = new int [N];
    for (i=0; i<N; ++i)
    {
        if (start == N) start = 0;
        cin >> arr [start ++];
    }
    for(i=0; i<N; ++i)
    cout << arr [i] << " ";
    return 0;
}
```

10)

```
#include <bits/stdc++.h>
using namespace std;
int camelcase (string s)
{
    int count = 1;
    for (int i = 1; i < str.length()-1;
                                i++)
    {
        if (isupper (str[i]))
            count++;
    }
    return count;
}
int main()
{
    string str = "CamelCase";
    cout << camelcase (string s)
    return 0;
}
```