**DSA BOOTCAMP ASSIGNMENT**

**Q1. Write a program to Swap to two numbers.**

**Answer:**

#include <iostream>

Using namespace std;

Int main()

{

Int a = 5, b = 10, temp;

Cout << “Before swapping.” << endl;

Cout << “a = “ << a << “, b = “ << b << endl;

Temp = a;

A = b;

B = temp;

Cout << “\nAfter swapping.” << endl;

Cout << “a = “ << a << “, b = “ << b << endl;

Return 0;

}

**Q2. Write a program to find the largest number among three numbers entered by the user.**

**Answer:**

#Include <iostream>

Using namespace std;

Int main() {

Float n1, n2, n3;

Cout << “Enter three numbers: “;

Cin >> n1 >> n2 >> n3;

If((n1 >= n2) && (n1 >= n3))

Cout << “Largest number: “ << n1;

Else if ((n2 >= n1) && (n2 >= n3))

Cout << “Largest number: “ << n2;

Else

Cout << “Largest number: “ << n3;

Return 0;

}

**Q3. Write a program to check whether a year entered by a user is Leap year or not.**

**Answer:**

#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 a leap year.”;

}

Else

Cout << year << “ is a leap year.”;

}

Else

Cout << year << “ is not a leap year.”;

Return 0;

}

**Q4. Write a program to display Fibonacci Series upto nth term. (Using loops)**

**Answer:**

#Include <iostream>

Using namespace std;

Int main() {

Int n, t1 = 0, t2 = 1, nextTerm = 0;

Cout << “Enter the number of terms: “;

Cin >> n;

Cout << “Fibonacci Series: “;

For (int i = 1; i <= n; ++i) {

// Prints the first two terms.

If(i == 1) {

Cout << t1 << “, “;

Continue;

}

If(i == 2) {

Cout << t2 << “, “;

Continue;

}

nextTerm = t1 + t2;

t1 = t2;

t2 = nextTerm;

cout << nextTerm << “, “;

}

Return 0;

}

**Q5. Write a program to check whether a number is Prime or Not.**

**Answer:**

#include <iostream>

Using namespace std;

Int main() {

Int i, n;

Bool isPrime = true;

Cout << “Enter a positive integer: “;

Cin >> n;

// 0 and 1 are not prime numbers

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 number”;

Else

Cout << n << “ is not a prime number”;

Return 0;

}

**Q6. Print this pattern using loops**

**For n=5**

\*

\*\*

\* \*\*

\*\* \* \*

\* \* \* \* \*

**Answer:**

#Include <iostream>

Using namespace std;

Int main()

{

Int rows;

Cout << “Enter number of rows: “;

Cin >> rows;

For(int i = 1; i <= rows; ++i)

{

For(int j = 1; j <= i; ++j)

{

Cout << “\* “;

}

Cout << “\n”;

}

Return 0;

}

**Q7.Write a program that takes n elements from the user and displays the second largest element of an array.**

**Answer:**

#include <iostream>

Using namespace std;

Int main() {

Int n, i;

Cout << “Enter number of elements an array \n”;

Cin >> n;

Int arr[n];

Cout << “Enter values in an array \n”;

For (i = 0; i < n; i++) {

Cin >> arr[i];

}

Int max = INT\_MIN;

Int second\_max = INT\_MIN;

For (i = 0; i < n; i++) {

If(arr[i] > max) {

Second\_max = max;

Max = arr[i];

}

If(arr[i] < max && arr[i] > second\_max) {

Second\_max = arr[i];

}

}

Cout << “Second highest number in an unsorted Array is “ << second\_max;

Return 0;

}

**Q8:Left Rotation.**

**Answer:**

#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;

}

**Q9. Grading Students**

**Answer:**

#include<iostream>

Using namespace std;

Int main()

{

Int i;

Float mark, sum=0, avg;

Cout<<”Enter Marks obtained in 5 Subjects: “;

For(i=0; i<5; i++)

{

Cin>>mark;

Sum = sum+mark;

}

Avg = sum/5;

Cout<<”\nGrade = “;

If(avg>=91 && avg<=100)

Cout<<”A1”;

Else if(avg>=81 && avg<91)

Cout<<”A2”;

Else if(avg>=71 && avg<81)

Cout<<”B1”;

Else if(avg>=61 && avg<71)

Cout<<”B2”;

Else if(avg>=51 && avg<61)

Cout<<”C1”;

Else if(avg>=41 && avg<51)

Cout<<”C2”;

Else if(avg>=33 && avg<41)

Cout<<”D”;

Else if(avg>=21 && avg<33)

Cout<<”E1”;

Else if(avg>=0 && avg<21)

Cout<<”E2”;

Else

Cout<<”Invalid!";

cout<<endl;

return 0;

}

**Q10. CamelCase**

**Answer:**

#include <map>

#include <set>

#include <list>

#include <cmath>

#include <ctime>

#include <deque>

#include <queue>

#include <stack>

#include <string>

#include <bitset>

#include <cstdio>

#include <limits>

#include <vector>

#include <climits>

#include <cstring>

#include <cstdlib>

#include <fstream>

#include <numeric>

#include <sstream>

#include <iostream>

#include <algorithm>

#include <unordered\_map>

Using namespace std;

Int main(){

String s;

Cin >> s;

Int t=1;

For (int i=0;i<s.length();i++)

If (isupper(s[i]))

T++;

Cout<<t<<endl;

Return 0;

}