**DSA BOOTCAMP ASSIGNMENT**

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

#include <iostream >

using namespace std;

int main() {

int a = 10, b = 5, temp;

temp = a;

a = b;

b = temp;

cout<<"Value of a is "<<a<<endl;

cout<<"Value of b is "<<b;

return 0;

}

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

#include<iostream>

using namespace std;

int main() {

int num1,num2,num3;

cout<<" Enter value for first number";

cin>>num1;

cout<<" Enter value for second number";

cin>>num2;

cout<<" Enter value for third number";

cin>>num3;

if(num1>num2&&num1>num3) {

cout<<" First number is greatest:"<<endl<<"which is= "<<num1;

} else if(num2>num1&&num2>num3) {

cout<<" Second number is greatest"<<endl<<"which is= "<<num2;

} else {

cout<<" Third number is greatest"<<endl<<"which is= "<<num3;

}

return 0; }

**Q3. Write a program 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 the Year: ";

cin>>year;

if((year%4==0) && (year%100!=0))

cout<<"\is a Leap Year";

else if(year%400==0)

cout<<"\ is a Leap Year";

else

cout<<"\ is not a Leap Year";

cout<<endl;

return 0;

}

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

#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) {

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.**

#include <iostream>

using namespace std;

int main()

{

int n, i, m=0, flag=0;

cout << "Enter the Number to check Prime: ";

cin >> n;

m=n/2;

for(i = 2; i <= m; i++)

{

if(n % i == 0)

{

cout<<"Number is not Prime"<<endl;

flag=1;

break;

}}

if (flag==0)

cout << "Number is Prime"<<endl;

return 0;

}

**Q6. Print this pattern using loops for n=5.**

#include <iostream>

using namespace std;

int main()

{

int 5;

for(int i = 1; i <= 5; ++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.**

#include <iostream>

using namespace std;

int main(){

int n, num[50], largest, second;

cout<<"Enter number 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;

}

**Q8. Hackerrank question.(Array left rotation)**

#include <math>

#include <stdio>

#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. Hackerrank question.(Grading)**

#include <cmath>

#include <numeric>

#include <iostream>

#include <algorithm>

using namespace std;

int main(){

int n;

cin >> n;

for(int a0 = 0; a0 < n; a0++){

int grade;

cin >> grade;

if (grade >= 38) {

int rem = grade % 5;

if (rem >= 3) grade += 5 - rem;

}

cout << grade << endl;

}

return 0;

}

**Q10. Hackerrank question.(Camelcase)**

#include <bits/stdc++.h>

using namespace std;

int main() {

string s;

cin>>s;

int count = 1;

for (const char c : s) {

if (c >= 'A' && c <= 'Z')

++count;

}

cout<<count<<endl;

}