**DSA BOOTCAMP ASSIGNMENT**

Q1. Write a program to Swap to two numbers.

ANS:-

#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;

}

**Output**

Before swapping.

a = 5, b = 10

After swapping.

a = 10, b = 5

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<<"whick is= "<<num1;

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

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

} else {

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

}

return 0;

}

**OUTPUT:-**-

Enter value for first number16

Enter value for second number32

Enter value for third number48

Third number is greatest

whick is= 48

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 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;

}

**Output**

Enter a year: 2014

2014 is not a leap year.

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

// 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;

}

**Output**

Enter the number of terms: 10

Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34,

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

#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;

}

**Output**

Enter a positive integer: 29

29 is a prime number.

Q6. Print this pattern using loops

For n=5

    \*

  \* \*

  \* \* \*

\* \* \* \*

\* \* \* \* \*

#include <stdio.h>

int main() {

int i, space, rows, k = 0;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = 1; i <= rows; ++i, k = 0) {

for (space = 1; space <= rows - i; ++space) {

printf(" ");

}

while (k != 2 \* i - 1) {

printf("\* ");

++k;

}

printf("\n");

}

return 0;

}

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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 i, n;

float arr[100];

cout << "Enter total number of elements(1 to 100): ";

cin >> n;

cout << endl;

// Store number entered by the user

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

{

cout << "Enter Number " << i + 1 << " : ";

cin >> arr[i];

}

// Loop to store largest number to arr[0]

for(i = 1;i < n; ++i)

{

// Change < to > if you want to find the smallest element

if(arr[0] < arr[i])

arr[0] = arr[i];

}

cout << "Largest element = " << arr[0];

return 0;

}

**Output**

Enter total number of elements: 8

Enter Number 1: 23.4

Enter Number 2: -34.5

Enter Number 3: 50

Enter Number 4: 33.5

Enter Number 5: 55.5

Enter Number 6: 43.7

Enter Number 7: 5.7

Enter Number 8: -66.5

Largest element = 55.5

Q8. [Left Rotation](https://www.hackerrank.com/challenges/array-left-rotation/problem)

Q9. [Grading Students](https://www.hackerrank.com/challenges/grading/problem)

Q10. [CamelCase](https://www.hackerrank.com/challenges/camelcase/problem)