

DSA Bootcamp Assignment

1 .

```
#include <iostream >
using namespace std;
int main() {
    int a = 10, b = 4, temp;
    temp = a;
    a = b;
    b = temp;
    cout<<"Value of a is "<<a<<endl;
    cout<<"Value of b is "<<b;
    return 0;
}
```

Output :

Value of a is 4

Value of b is 10

2 .

```
#include <iostream>
using namespace std;
int main() {
    int a = 5 ,b = 1 ,c = 9;
    if(a>b) {
        if(a>c)
            cout<<a<<" is largest number";
        else
            cout<<c<<" is largest number";
    }else {
        if(b>c)
            cout<<b<<" is largest number";
        else
            cout<<c<<" is largest number";
    }
    return 0;
}
```

Output :

9 is largest number

3 .

```
#include<iostream>
using namespace std;
int main()
{
    int yr;
    cout<<"Enter the Year: ";
    cin>>yr;
    if((yr%4==0) && (yr%100!=0))
        cout<<"\nIt is a Leap Year";
    else if(yr%400==0)
        cout<<"\nIt is a Leap Year";
    else
        cout<<"\nIt is not a Leap Year";
    cout<<endl;
    return 0;
}
```

Output :

Enter the year: 2019

It is not a leap year

Enter the year: 2016

It is a leap year

4 .

```
#include <iostream>
using namespace std;
int main() {
    int n1=0,n2=1,n3,i,number;
    cout<<"Enter the number of elements: ";
    cin>>number;
    cout<<n1<<" "<<n2<<" ";
    for(i=2;i<number;++i)
    {
        n3=n1+n2;
        cout<<n3<<" ";
        n1=n2;
```

```

    n2=n3;
}
    return 0;
}

```

Output :

Enter the number of elements: 10
0 1 1 2 3 5 8 13 21 34

5 .

```

#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;
}

```

Output :

Enter the Number to check Prime: 17
Number is Prime.

Enter the Number to check Prime: 57
Number is not Prime.

6 .

```

#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;

    // Function Call
    triangle(n);
    return 0;
}

```

Output :

```

*
* *
* * *
* * * *
* * * * *

```

7 .

```

#include <bits/stdc++.h>
using namespace std;

```

```

void print2largest(int arr[], int arr_size)
{
    int i, first, second;

    if (arr_size < 2) {
        printf(" Invalid Input ");
        return;
    }

    sort(arr, arr + arr_size);

    for (i = arr_size - 2; i >= 0; i--) {
        if (arr[i] != arr[arr_size - 1]) {
            printf("The second largest element is %d\n", arr[i]);
            return;
        }
    }

    printf("There is no second largest element\n");
}

int main()
{
    int arr[] = { 12, 35, 1, 10, 34, 1 };
    int n = sizeof(arr) / sizeof(arr[0]);
    print2largest(arr, n);
    return 0;
}

```

Input : { 12, 35, 1, 10, 33, 1 }

Output : 33

8 .

```

#include <bits/stdc++.h>
using namespace std;

void leftRotatebyOne(int arr[], int n)
{
    int temp = arr[0], i;
    for (i = 0; i < n - 1; i++)
        arr[i] = arr[i + 1];
}

```

```

        arr[n-1] = temp;
    }

    void leftRotate(int arr[], int d, int n)
    {
        for (int i = 0; i < d; i++)
            leftRotatebyOne(arr, n);
    }

    void printArray(int arr[], int n)
    {
        for (int i = 0; i < n; i++)
            cout << arr[i] << " ";
    }

    int main()
    {
        int arr[] = { 1, 2, 3, 4, 5 };
        int n = sizeof(arr) / sizeof(arr[0]);

        // Function calling
        leftRotate(arr, 2, n);
        printArray(arr, n);

        return 0;
    }

```

Input : { 1, 2, 3, 4, 5 }
 Output : { 3, 4, 5, 1, 2 }

9 .

```

#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(){
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;
}
```

Input :

4
73
67
38
33

Output :

75
67
40
33

10 .

```
#include <bits/stdc++.h>
using namespace std;

int countWords(string str)
{
    int count = 1;

    for (int i = 1; i < str.length() - 1; i++) {
        if (isupper(str[i]))
            count++;
    }

    return count;
}

int main()
{
    string str = "saveChangesInTheEditor";

    cout << countWords(str);

    return 0;
}
```

Input : saveChangesInTheEditor

Output : 5