Name: Tanay Rambhia

Internship: C++

**Task 1: Create an infinite loop from scratch**

**Source Code:**

#include <iostream>

using namespace std;

int main () {

for( ; ; ) {

printf("This loop will run forever.\n");

}

return 0;

}

**Task 2: Create an executable comment**

**Source Code:**

#include <iostream>

using namespace std;

int main() {

// This is a comment

cout << "Hello World!";

return 0;

}

**Task 3: Create a named loop**

**Source Code:**

// Create a Named Loop

# include <iostream>

using namespace std;

int main()

{

float num, average, sum = 0.0;

int i, n;

cout << "Maximum number of inputs: ";

cin >> n;

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

{

cout << "Enter n" << i << ": ";

cin >> num;

if(num < 0.0)

{

// Control of the program move to jump:

goto jump;

}

sum += num;

}

jump:

average = sum / (i - 1);

cout << "\nAverage = " << average;

return 0;

}

**Task 4: Find a single duplicate in an array of integers**

**Source Code:**

#include<iostream>

#include<conio.h>

using namespace std;

int main()

{

int i,arr[20],j,no;

cout<<"Enter Size of array: ";

cin>>no;

cout<<"Enter any "<<no<<" num in array: ";

for(i=0;i<no;i++)

{

cin>>arr[i];

}

cout<<"Dublicate Values are: ";

for(i=0; i<no; i++)

{

for(j=i+1;j<no;j++)

{

if(arr[i]==arr[j])

{

cout<<"\n"<<arr[i];

}

}

}

}

**Task 5: Find a non-unique duplicate in an array of integers**

**Source Code:**

#include <bits/stdc++.h>

using namespace std;

// Main function to run the program

int main()

{

int arr[] = {10, 30, 40, 20, 10, 20, 50, 10};

int n = sizeof(arr)/sizeof(arr[0]);

unordered\_map <int, int>mp;

int count\_dis=0;

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

mp[arr[i]]++;

for(auto it=mp.begin(); it!=mp.end(); it++){

if(it->second==1)

cout<<it->first<<" ";

}

}