Experiment 1.1

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Branch: Computer Science **Section/Group : 607B**
Semester: 5th **Date of Performance: 21/08/2022**
Subject Name: DAA Lab **Subject Code: 20CSP-312**

1. **Aim/Overview of the practical:**

   Code and analyse to compute the greatest common divisor (GCD) of two numbers.

2. **Task to be done/ Which logistics used:**

   Finding GCD of two numbers using GDB Compiler.

3. **Flowchart/Algorithm :**

   Step 1: Let a, b be the two numbers

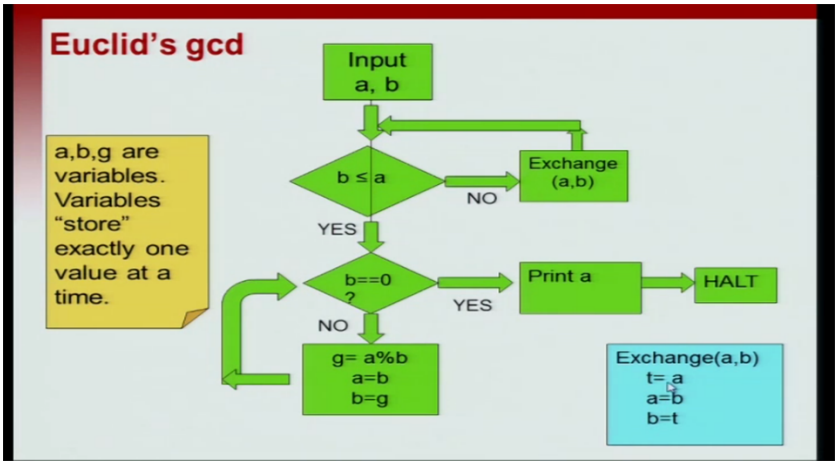
   Step 2: a mod b = R

   Step 3: Let a = b and b = R

   Step 4: Repeat Steps 2 and 3 until a mod b is greater than 0

   Step 5: GCD = b

   Step 6: Finish



4. Steps for Experiment/Code:

```
#include <iostream>
using namespace std;
int gcd(int n1, int n2)
{
if (n1 == 0)
return n2;
if (n2 == 0)
return n1;
if (n1== n2)
return n1;
if (n1 > n2)
return gcd(n1-n2, n2);
return gcd(n1, n2-n1);
}
int main()
```

```
{
int a = 30, b = 45;
cout<<"GCD of "<<a<<" and "<<b<<" is "<<gcd(a, b)<<endl;
cout<<"Upasna Bijlani"<<endl;
cout<<"21BCS8896"<<endl;
return 0;
}
```

5. **Observations/Discussions/ Complexity Analysis:**

   a) Observed and learned Euclidian theorem.

   b) Learned how to find GCD of two number.

   C) Learned more about data structures and algorithms.

6. **Output:**

```cpp
#include <iostream>
using namespace std;
int gcd(int n1, int n2)
{
if (n1 == 0)
return n2;
if (n2 == 0)
return n1;
if (n1== n2)
return n1;
if (n1 > n2)
return gcd(n1-n2, n2);
return gcd(n1, n2-n1);
}
int main()
{
int a = 30, b = 45;
cout<<"GCD of "<<a<<" and "<<b<<" is "<<gcd(a, b)<<endl;
cout<<"Upasna Bijlani"<<endl;
cout<<"21BCS8896"<<endl;
return 0;
}
```

```
GCD of 30 and 45 is 15
Upasna Bijlani
21BCS8896


...Program finished with exit code 0
Press ENTER to exit console.
```

7. Learning outcomes (What I have learnt):

1. Learned about the GCD.
2. Learned about the Euclidean theorem.
3. More about data structures and algorithms.

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			