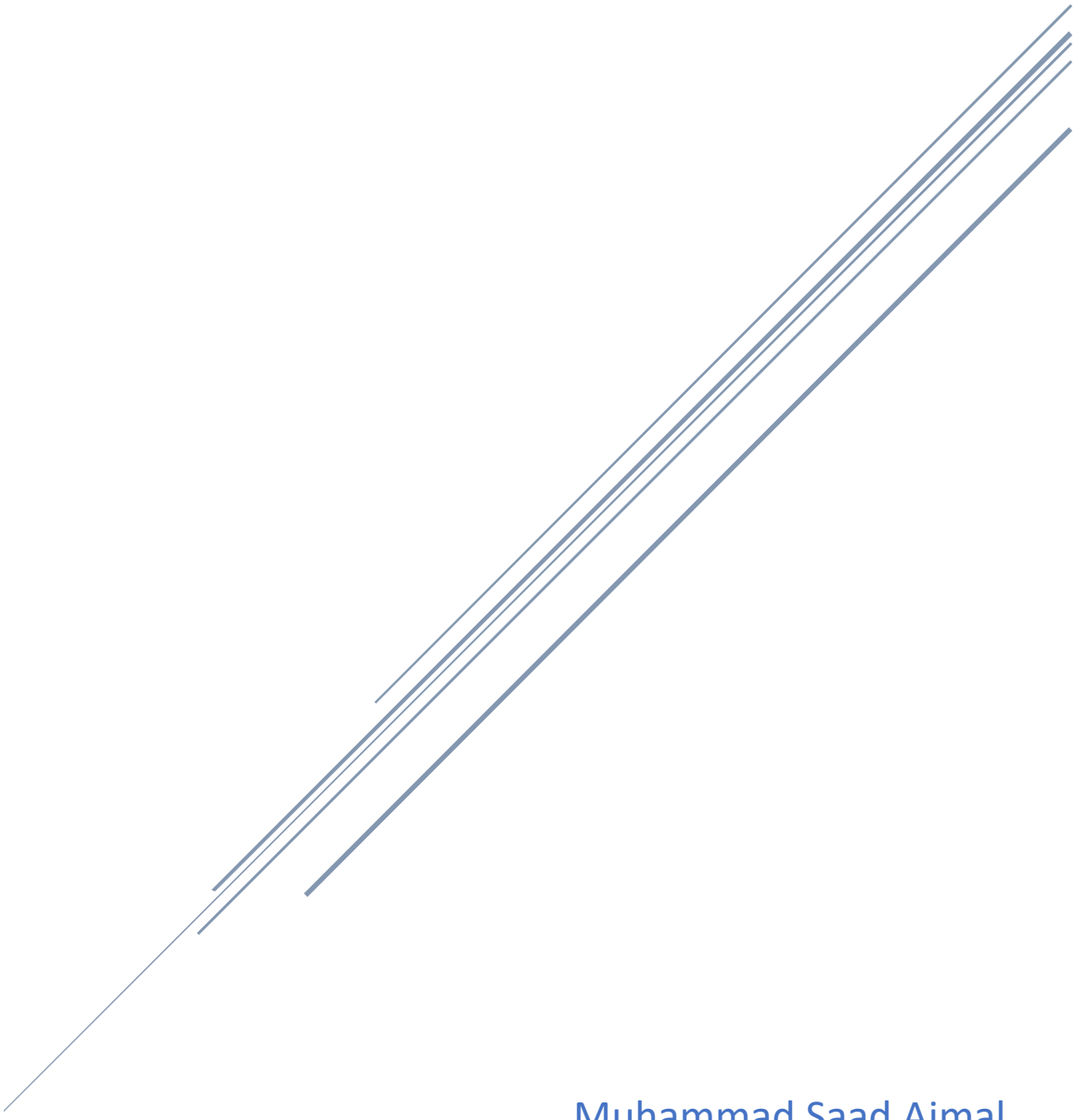
# FUNDAMENTALS OF PROGRAMMING

## Lab Manual #6 Home Tasks + Lab Tasks



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**QUESTION #1:** ***Generate the Fibonacci sequence using nested loops.***

## CODE:

```
#include <iostream>
using namespace std;
int main()
{
    int x, sum, a = 0, b = 1;
    cout << "Enter the number of digits in Fibonnaci Sequence: ";
    cin >> x;
    cout << "The Fibonnaci Sequence is: ";
    cout << a << "," << b << ",";
    for (int i = 1; i <= x; i++)
    {
        sum = a + b;
        a = b;
        b = sum;
        cout << sum << ",";
    }
    return 0;
}
```

## RESULTS:

```
            > cd "e:\Coding\" ; if ($?) { g++ Main.cpp -o Main } ; if ($?) { .\Main }
Enter the number of digits in Fibonnaci Sequence: 12
The Fibonnaci Sequence is: 0,1,1,2,3,5,8,13,21,34,55,89,144,233,
PS E:\Coding>
```

**QUESTION #2:** Create Floyd's triangle with nested loops.

## CODE:

```
#include <iostream>
using namespace std;
int main()
{
    int a, b = 1;
    cout << "Enter the number of rows: ";
    cin >> a;
    for (int i = 1; i <= a; i++)
```

```
    {
        for (int j = 1; j <= i; j++)
        {
            cout << b << " ";
            b++;
        }
        cout << endl;
    }
    return 0;
}
```

## RESULTS:

```
            > cd "e:\Coding\" ; if ($?) { g++ Main.cpp -o Main } ; if ($?) { .\Main }
Enter the number of rows: 5
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
PS E:\Coding>
```

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# HOME TASKS

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**QUESTION #1:** Write a program using break or continue statement that only adds prime numbers from 1 to 50 and display the sum on screen.

## CODE:

```
#include <iostream>
using namespace std;
int main()
{
    int a, b, sum = 0;
    for (a = 2; a <= 50; a++)
    {
        for (b = 2; b * b <= a; b++)
        {
            if (a % b == 0)
            {
                break;
```

```
            }
        }
        if (b * b > a)
        {
            sum = sum + a;
        }
    }
    cout << "The sum of prime numbers from 1 to 50 is: " << sum;
    return 0;
}
```

## RESULTS:

```
            > cd "e:\Coding\" ; if ($?) { g++ Main.cpp -o Main } ; if ($?) { .\Main }
The sum of prime numbers from 1 to 50 is: 328
PS E:\Coding>
```

**QUESTION #2:** Write a program in C++ to create the following pattern:

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

## CODE:

```
#include <iostream>
using namespace std;
int main()
{
    int x;
    cout << "Enter number of rows: ";
    cin >> x;
    for (int a = 1; a <= x; a++)
    {
        for (int b = 1; b <= a; b++)
        {
            cout << b << " ";
        }
```

```
        cout << endl;
    }
    return 0;
}
```

## RESULTS:

```
Enter number of rows: 6
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
PS E:\Coding>
```

**QUESTION #3:** Write a C++ program to print:

1

2 2

4 4 4

6 6 6 6

## CODE:

```
#include <iostream>
using namespace std;
int main()
{
    int x, y = 1;
    cout << "Enter number of rows: ";
    cin >> x;
    cout << y << endl;
    for (int a = 1; a <= x; a++)
    {
        for (int b = 1; b <= a; b++)
        {
            if (a % 2 == 0)
            {
                cout << a << " ";
            }
        }
```

```
        cout << endl;
    }
    return 0;
}
```

## RESULTS: