Introduction to Computing

Lecture 6

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C++ While-Loops

C++ Loops

Loops can execute a block of code as long as a specified condition is reached.

Loops are handy because they save time, reduce errors, and they make code more readable.

C++ while Loop

The **while** loop loops through a block of code as long as a specified condition is true.

Syntax:

```
while (condition)
{
// code block to be executed
}
```

The `while` loop – Example

```
#include <iostream>
using namespace std;

int main()
{
    int i = 0;
    while (i < 5)
    {
        cout << i << "\n";
        i++;
    }
    return 0;
}
```

C++ do-while Loop

- The **do-while** loop is a variant of the **while** loop
- This loop will execute the code block once, before checking if the condition is true, then it will repeat the loop as long as the condition is true.

Syntax:

```
do
{
// code block to be executed
}
while (condition);
```

The `do-while` Loop – Example

```
#include <iostream>
using namespace std;

int main()
{
   int i = 10;
   do
   {
      cout << i << "\n";
      i++;
   }
   while (i < 5);

   return 0;
}
```

C++ Exercises

Question 1: Write a method with a while loop to prints 1 through n in square brackets. For example, if n = 6 print

Please enter number: <6>
[1] [2] [3] [4] [5] [6]

Question 2: Write a method with a while loop that computes the sum of first n positive integers:

sum = 1 + 2 + 3 + … + n

Please enter character: <5>
Sum= 15

Solution 1:

```
#include <iostream>
using namespace std;

int main()
{
    int i = 1;
    int n;

    cout << "Please enter number :";
    cin >> n;
    while (i <= n)
    {
        cout << "[" << i << "] ";
        i++;
    }

    return 0;
}
```

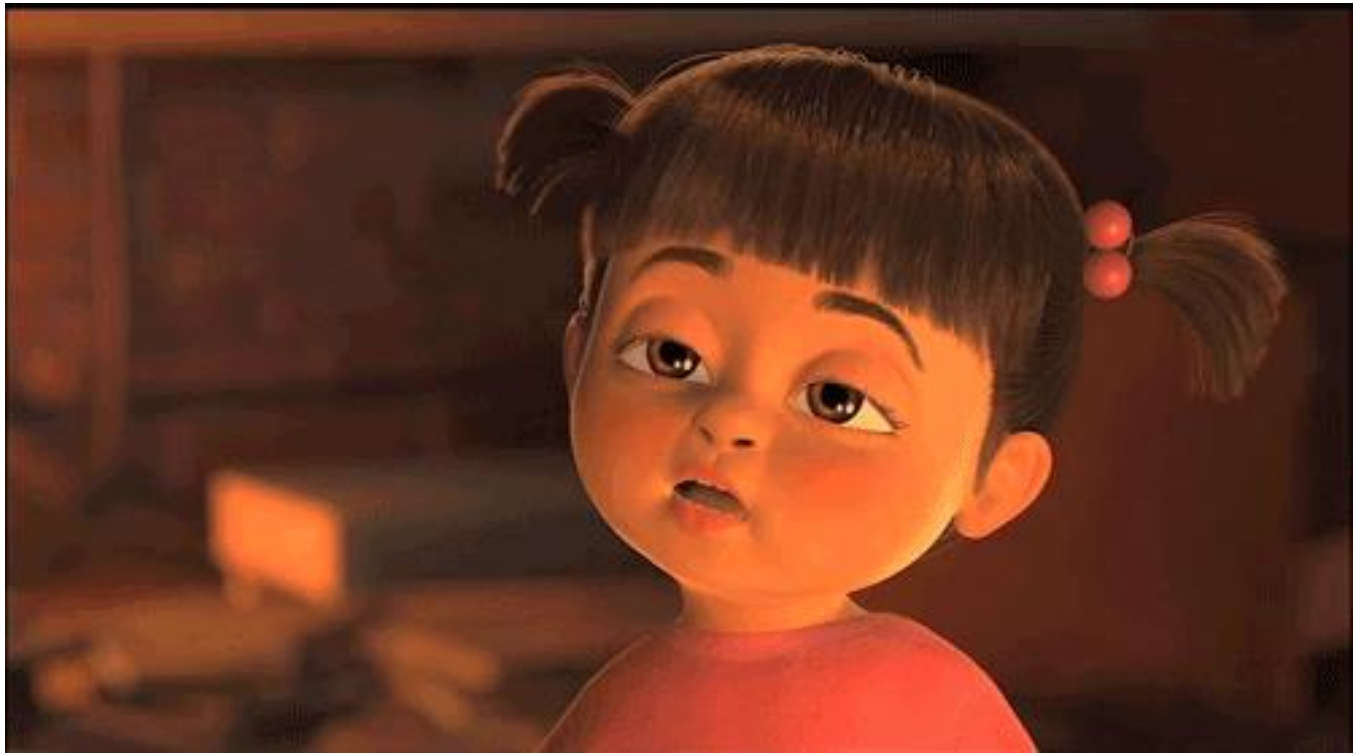
Solution 2:

```
#include <iostream>
using namespace std;

int main()
{
    int i = 0;
    int n;
    int sum=0;

    cout << "Please enter number :";
    cin >> n;
    while (i <= n)
    {
        sum += i;
        i++;
    }
    cout << "Sum is : "<< sum << endl;
    return 0;
}
```

Thanks a lot



If you are taking a Nap, **wake up**.....Lecture Over