Computer Programming

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Session: Dumbo's computations

Recap

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- We got introduced to Mr Buddhuram Dumbo,
  - has tools to perform input, output and assignment
- We also defined how to write a program for Mr. Dumbo
- Instructions for Input, Output, Assignment
- A declaration, to announce names used in a program

Overview of This Lecture

- We will see how Dumbo executes a program
- Possible problems in handling input/output
  - And a solution
- Moving over to C++

A Computational problem

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- Given the number of boys and girls in a class, find the total number of students in the class

Program Design

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- We need to read two input values
  - Let us use names NBOYS and NGIRLS for these values
- We need to calculate one result
  - Let us use the name NSTUDENTS to represent the result
- We figure that the value to be assigned to NSTUDENTS is the sum of the two numbers NBOYS and NGIRLS

- The program can now easily be written

A Program for Mr. Dumbo


```
Input NBOYS;
Input NGIRLS;
NSTUDENTS = NBOYS + NGIRLS;
Output NSTUDENTS;
```

The Correct Program for Mr. Dumbo

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```
Use locations NBOYS, NGIRLS, NSTUDENTS;
Input NBOYS;
Input NGIRLS;
NSTUDENTS = NBOYS + NGIRLS;
Output NSTUDENTS;
```

Dumbo in action

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- Watch Mr. Dumbo execute our program

Summary

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- Using Mr. Dumbo, we have understood basic operations that a computer can carry out
- Possible major components of a computer
  - Memory, I/O, Registers for computations
- We have seen how Dumbo executes a program