Introduction

CPSC 1150

Introduction to Program Design

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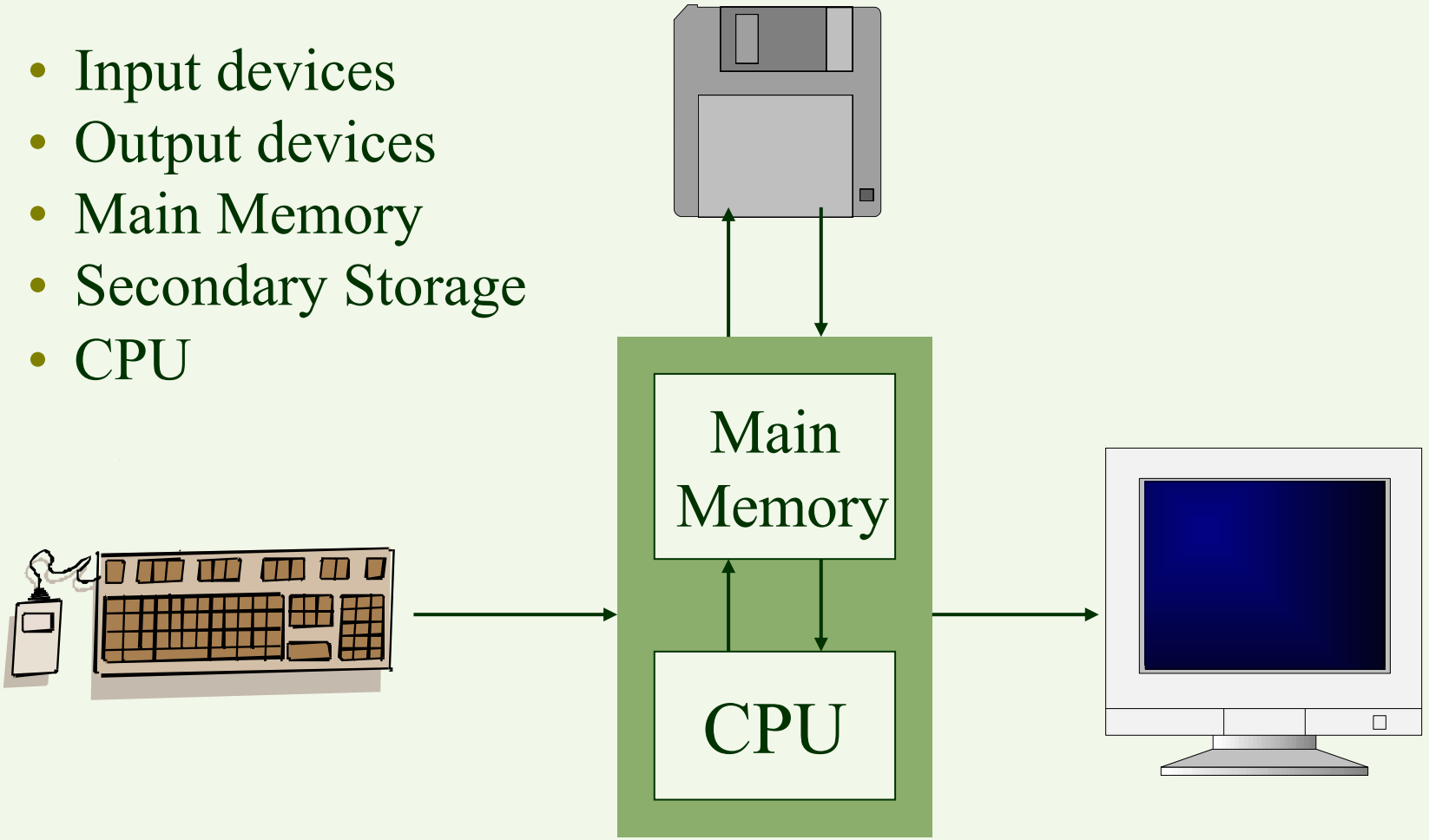
Learning Outcomes

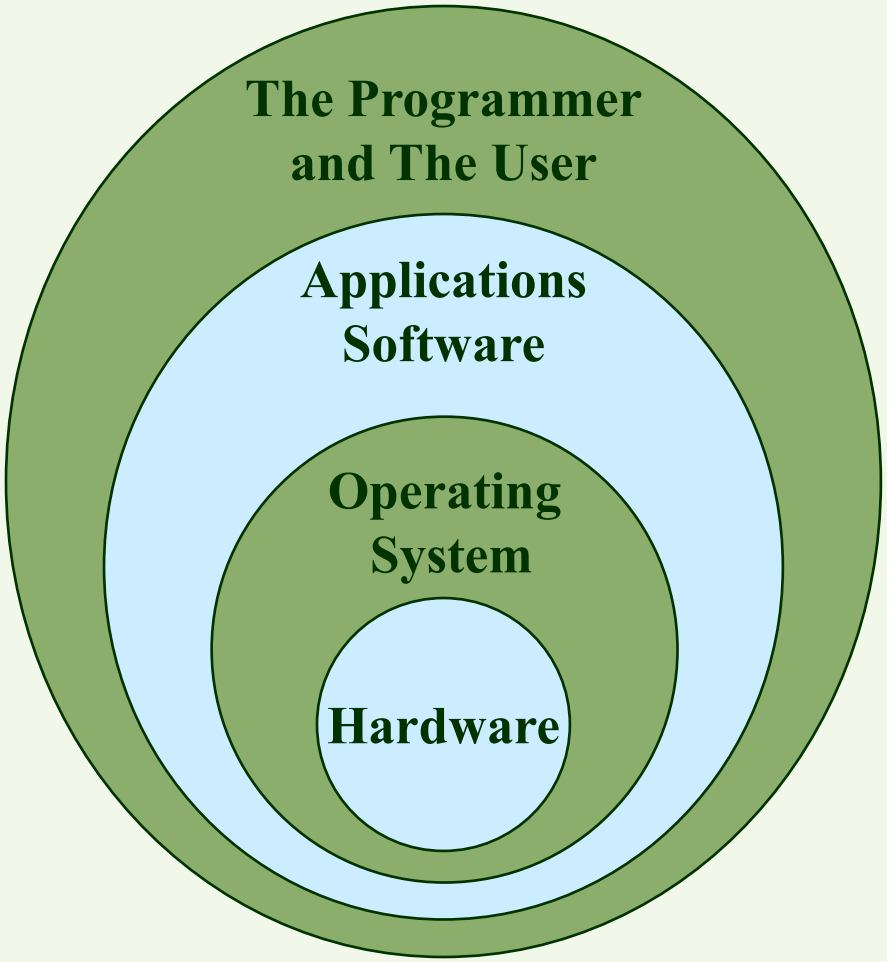
- Identify and classify a computer's basic components.
- Describe the two typical types of software in a computer system and how people would interact with them.
- List and describe the steps required to write and compile a working program.
- Describe the difference between syntax, runtime and logic errors.
- Describe the software development lifecycle and where this course typically fits into it.

Computer Components

- Input devices
- Output devices
- Main Memory
- Secondary Storage
- CPU

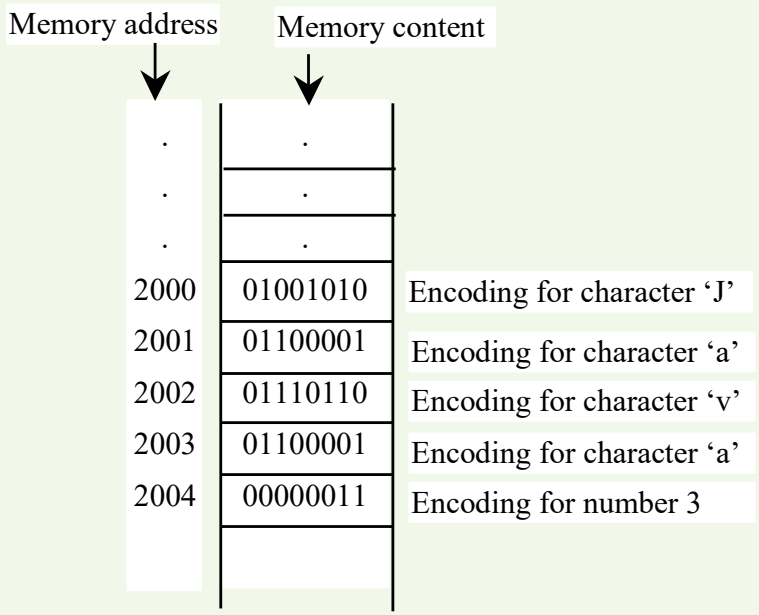


Hardware and Software

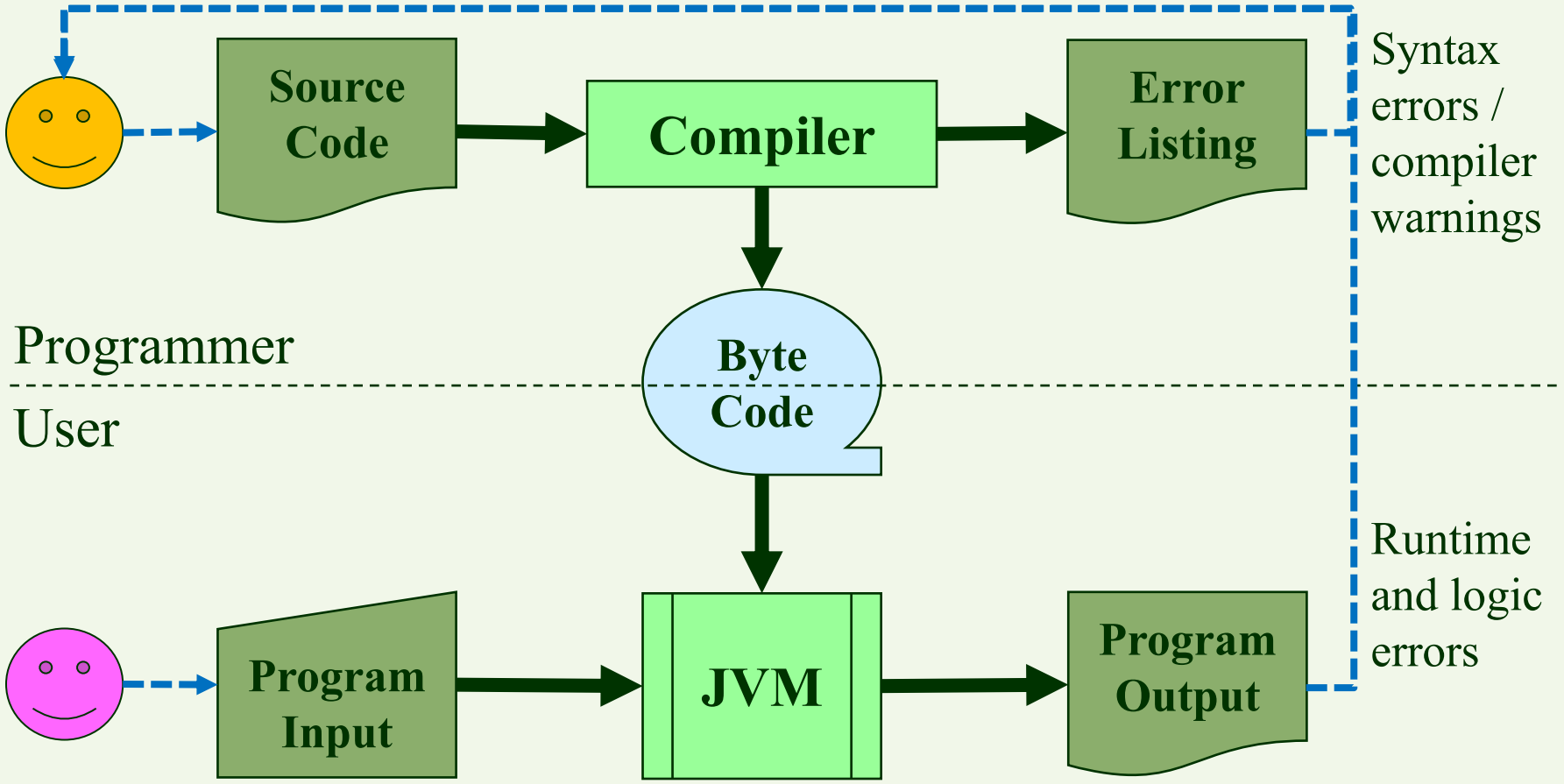


Computer Languages

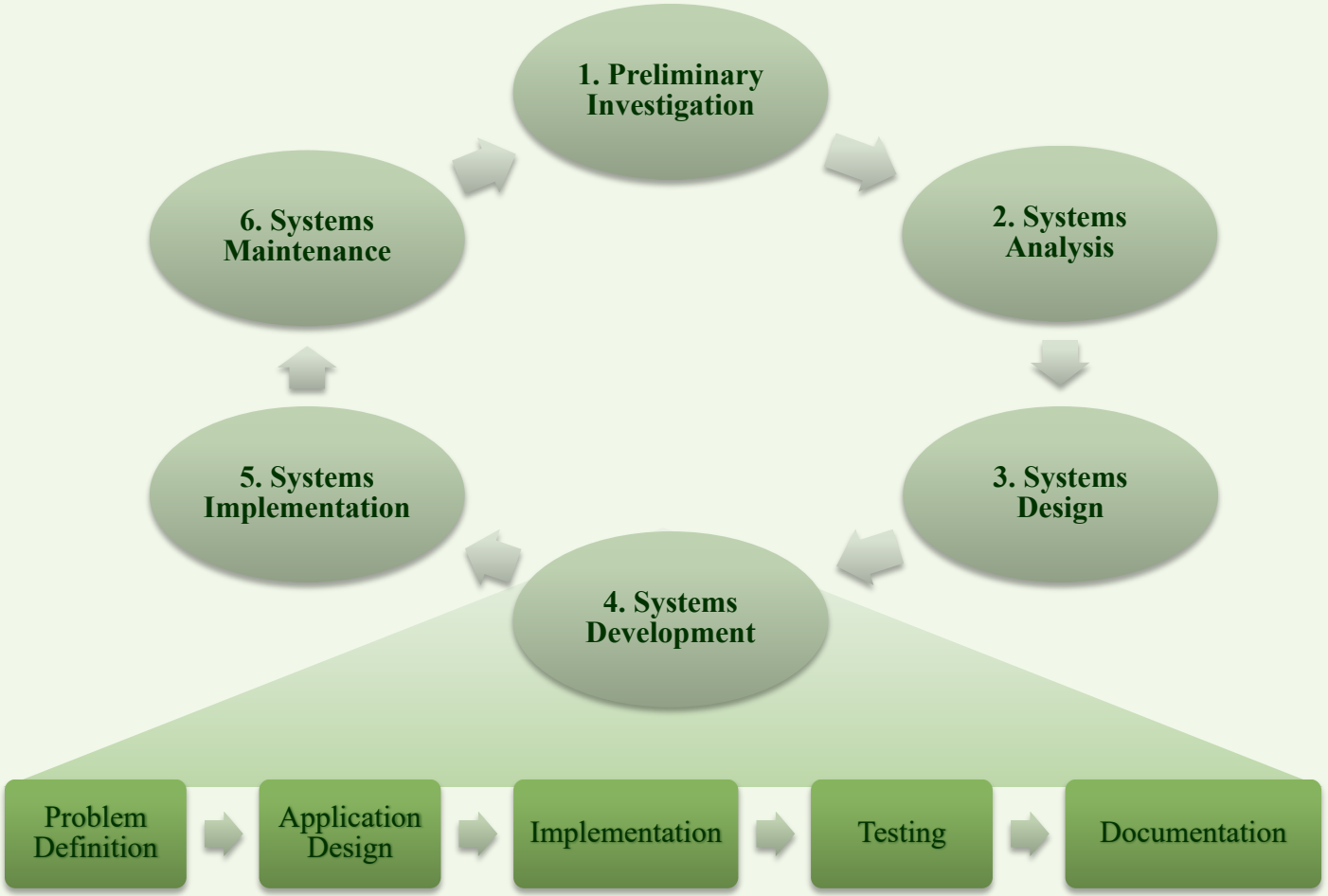
- Binary
  - 0010 0000 0000 0100
  - 0100 0000 0000 0101
  - 0011 0000 0000 0110
- Assembly
  - Load AX, 0100
  - Add AX, 0101
  - Stor AX, 0110
- High Level
  - cost = price + tax;
- Natural
  - The cost of the item is the price of the item plus the tax.



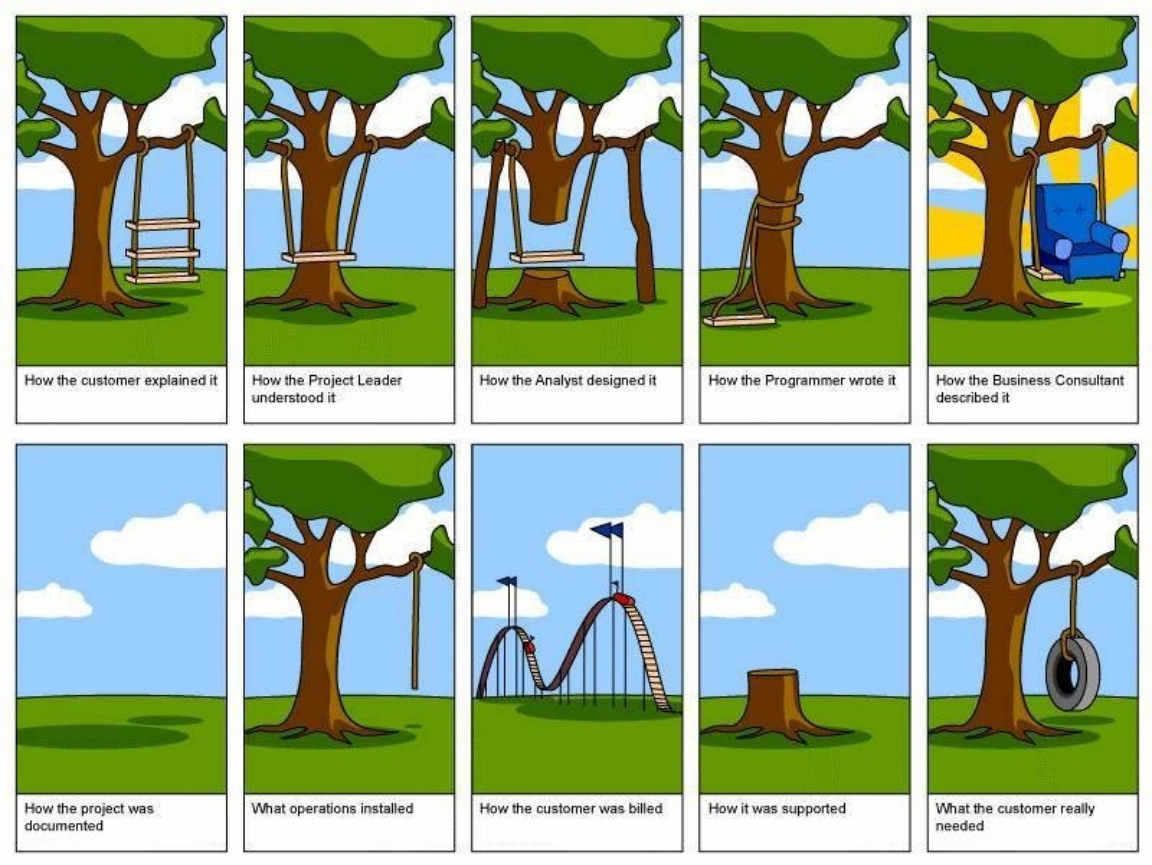
Compiling and Running a Program



Software Development Life Cycle



Software Development Life Cycle



Problem Solving Techniques

- Ask Questions
- Familiarity
- Analogy
- Means-End Analysis
- Divide and Conquer
- Building Block
- Merging
- Simplification
- Examples
- All of the above