

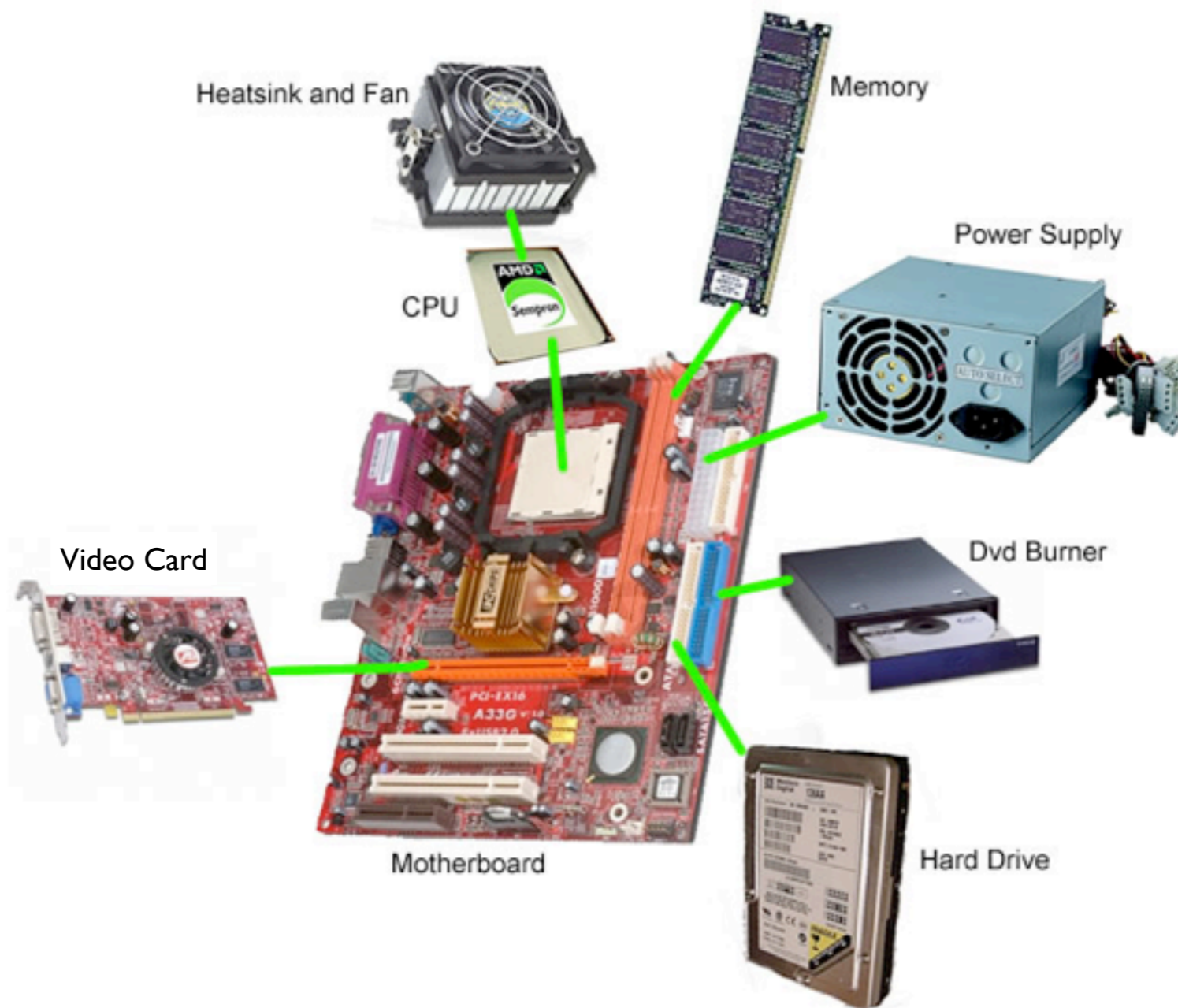
Garfield AP CS

Computers, Programming, Java

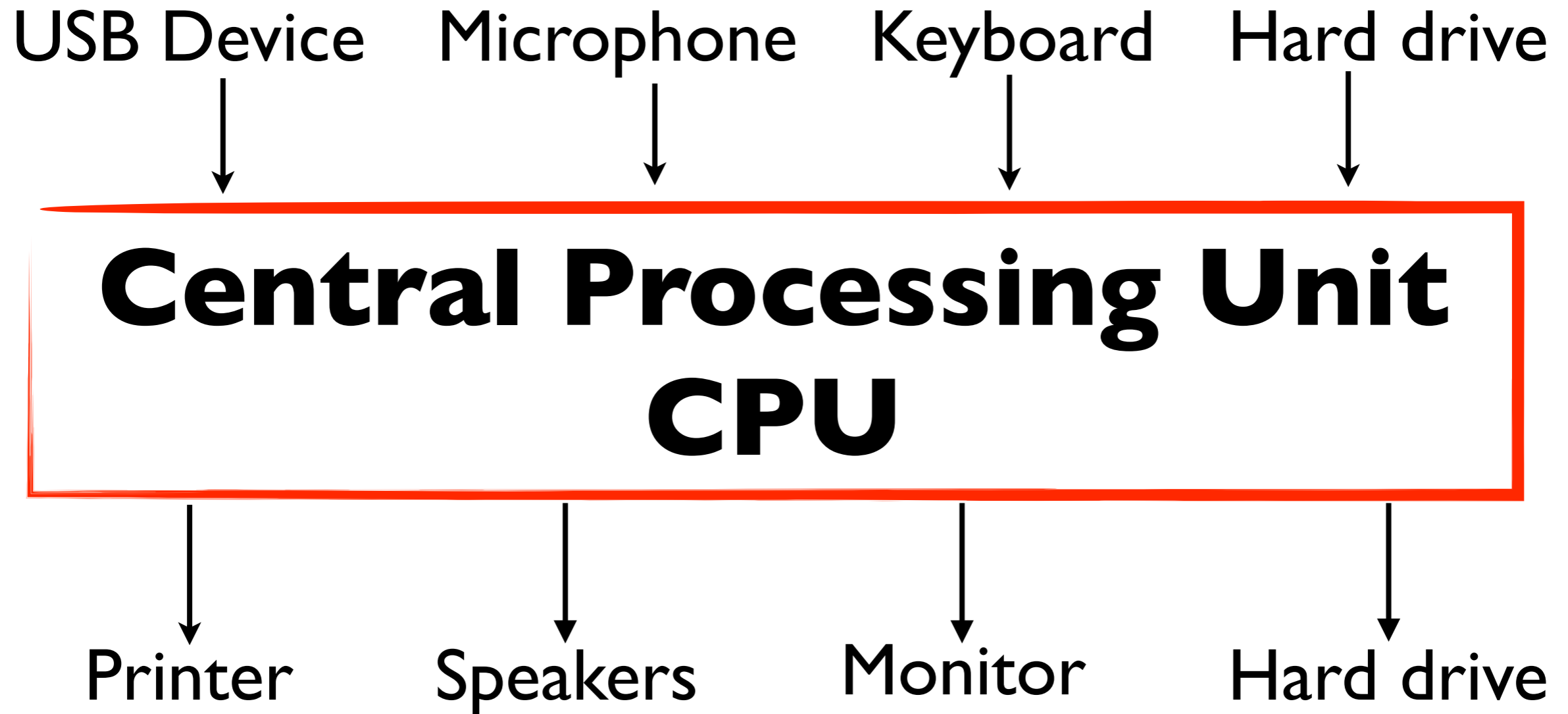
What's a computer?

- Examples of things that are
- What is special about PCs?
- What are the major components?

Major components

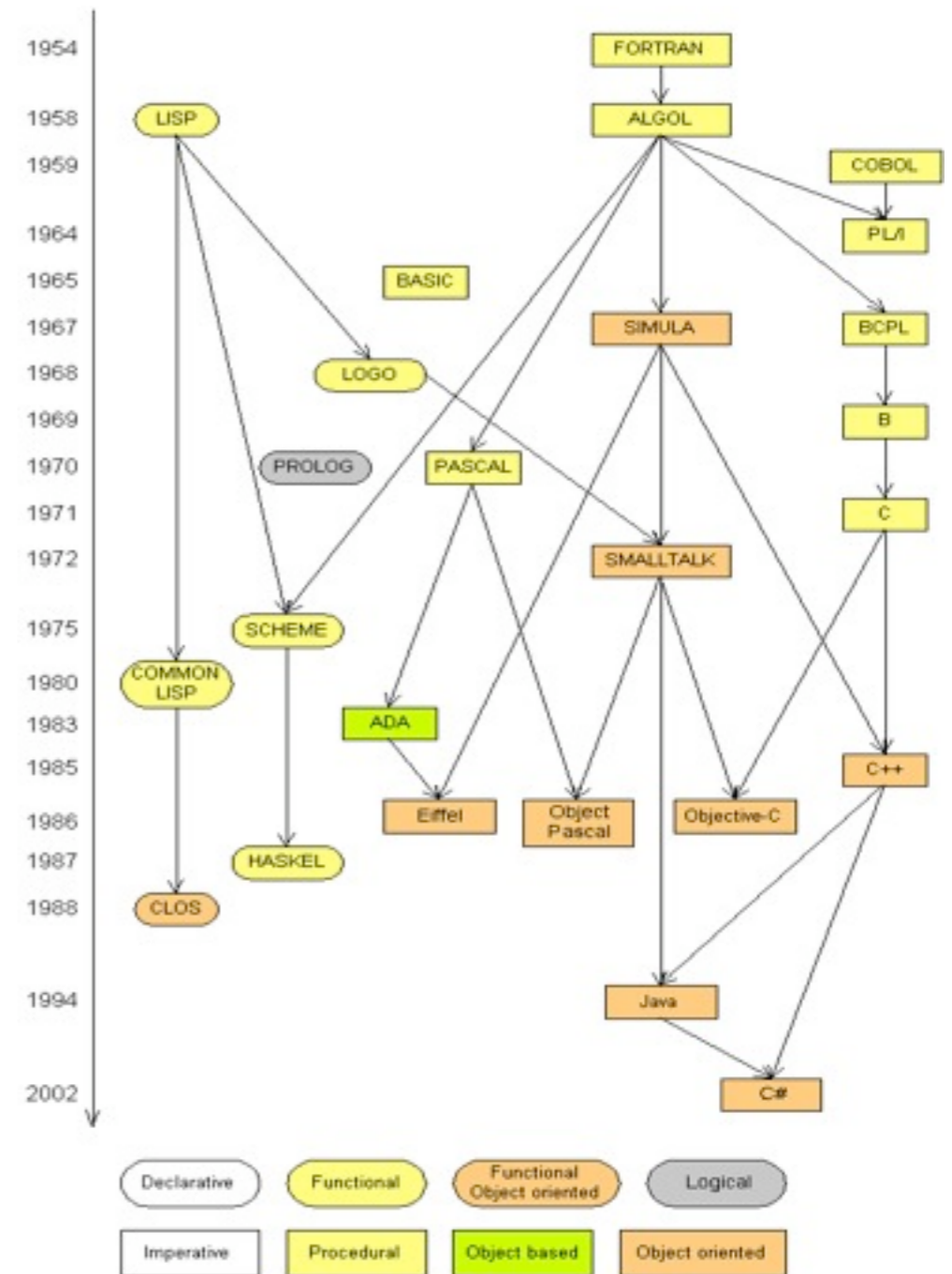


Data processing



Programming languages

- Human-readable
- Let us tell computers what to do
- Get translated to binary (more later)
- Each language has strengths, weaknesses



Java

- **Modern**
 - Started by Sun in 1995
 - Lots of libraries
 - Cross-platform
 - Object-oriented
- **Broadly used in industry**
- **Sometimes we'll have to deal with ugly stuff**

jGRASP

- Development environment
- Chosen because it's lightweight, easy debug
- Calls Java compiler from JDK
- See tutorial on website

Compiling/running a program

1. Write it.

- **code** or **source code**: The set of instructions in a program.

2. Compile it.

- **compile**: Translate a program from one language to another.
- **byte code**: The Java compiler converts your code into a format named *byte code* that runs on many computer types.

3. Run (execute) it.

- **output**: The messages printed to the user by a program.

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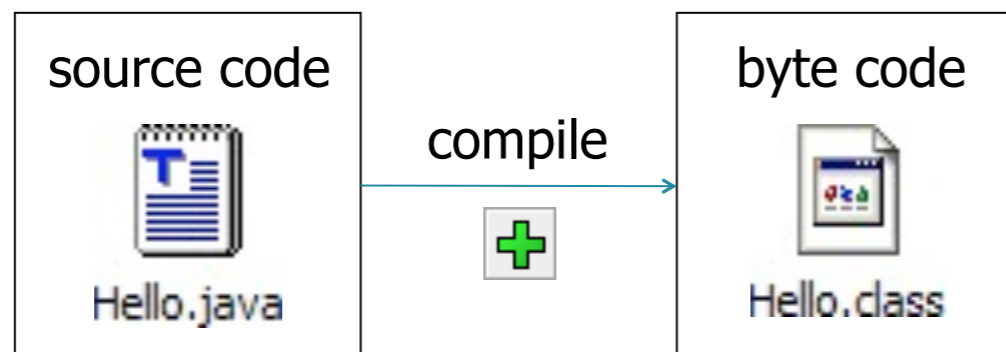
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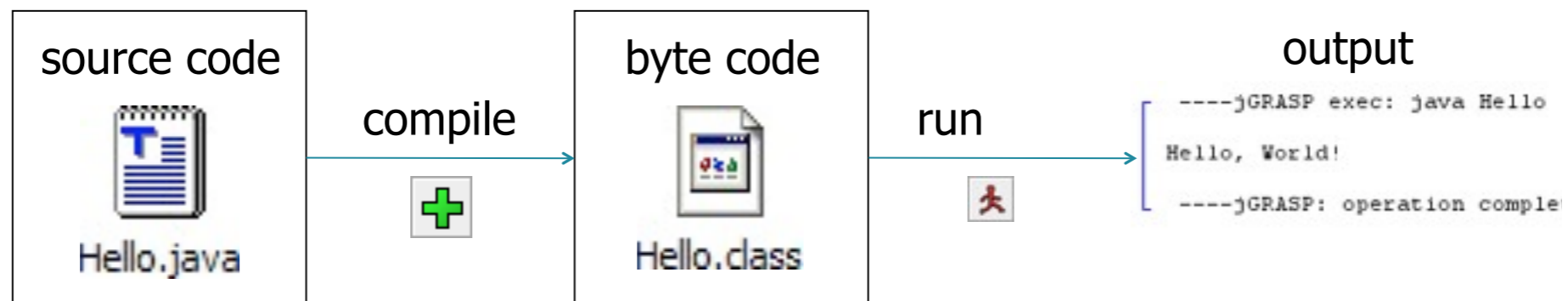
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Structure of a Java Program

```
public class name {  
    public static void main(String[] args) {  
        statement;  
        statement;  
        ...  
        statement;  
    }  
}
```

- Every executable Java program consists of a **class**,
 - that contains a **method** named `main`,
 - that contains the **statements** (commands) to be executed.

Syntax

- Set of legal structures and commands that can be used in a language
 - semicolons
 - curly braces
 - identifiers
- Compiler checks syntax, gives errors

Strings

- Sequence of characters
- Enclosed in quotes
- Some characters must be escaped using ‘\’