Compilation Process and Types of Errors

CSIS 2101

The Compilation Process
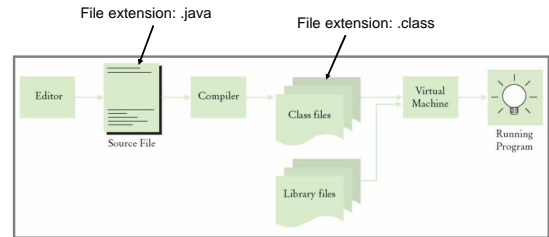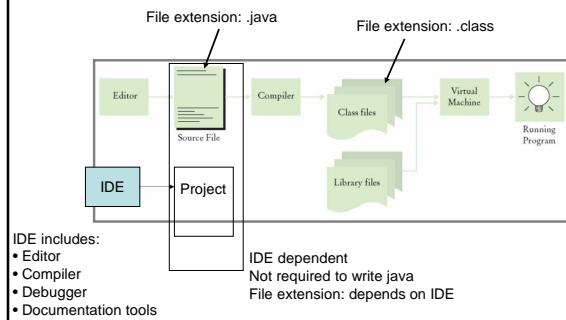

File extension: .java

File extension: .class

Editor → Compiler → Class files → Virtual Machine → Running Program

Source File

Library files

Figure 14:
From Source Code to Running Program

Modified Compilation Process

File extension: .java

File extension: .class

Editor → Compiler → Class files → Virtual Machine → Running Program

Source File

Library files

IDE — Project

IDE includes:
• Editor
• Compiler
• Debugger
• Documentation tools

IDE dependent
Not required to write java
File extension: depends on IDE

Errors

- Syntax errors

```
System.ouch.print(". . .");
System.out.print("Hello);
```

  – Detected by the compiler

- Logic errors

```
System.out.print("Hello, Word!");
```

  – Detected (hopefully) through testing
  – Sometimes referred to as "bugs"

Random Piece of Trivia

- Anyone know what the first known computer "bug" was?
  – It was literally a bug…
  – A moth caught in a relay switch of a huge electromechanical computer in 1947
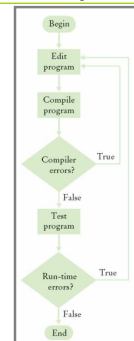

The Edit—Compile—Loop Test

Begin

Edit program

Compile program

Compiler errors? — True

False

Test program

Run-time errors? — True

False

End

Figure 15:
The Edit—Compile—Loop Test