**History of Programming**

- **Harvard Mark 1**
  - 1944, first automatic digital computer in US
  - Grace Hopper - first programmer for Mark 1
  - Still at Harvard

- **ENIAC – Eckert and Mauchly**
  - 1946, University of Pennsylvania
  - First useable computer

**Java**

- Developed 1995 by Sun
  - James Gosling and Patrick Naughton
- Simpler than C++
- Rich and LARGE library
- Portable – runs on different platforms

**Compiling Java**

- **Compiler**
  - Translator from high-level language (Java) to machine language (JVM – Java virtual machine)
  - **Path**
    - Use editor to create source file (.java)
    - Compiler
    - Join with class files and library files
    - Result is code for JVM (a running program!)

**What can you do with Eclipse?**

- Almost everything!
- Editor
- Automatically compiles
- Identifies syntax errors
- Runs program

- Question: What is a logic error?
What will we use Eclipse for in CompSci 6?

- Use to write complete java programs
  - Access libraries
- Use as an editor to write text files
  - README – gives info about the program
- Use to write simple methods, then test with APT

APT – Algorithmic Program Testing

- Not a complete java program
  - No main method
- Focus on and solve one small problem
- Rich set of data for testing
- Use Eclipse editor for APT, but cannot compile!
  - Why?
    - Then, again, you can set it up to compile ...

Java Types and Variables

- Every value has a type:

```java
int number = 6;
String month = "January";
FileStream infile;
Color originalColor;
```

Identifiers

- Choose meaningful names for variables, methods and classes
```
int x = 60; // what does x represent?
int numberOfDays = 6;
```
- Follow rules for identifiers
- Follow conventions for identifiers
- What is the difference?
Assignment Statement

```java
int numberOfDays;
numberOfDays = 6;
```

- `numberOfDays` is “assigned” the value 6
  - We vocalize that as “gets”
- OR 6 is stored in memory location for `numberOfDays`
- Don’t say
  - `numberOfDays equals 6!`

Lab/Classwork

- Get Eclipse Working
- Enter and run “HelloCompSciClass”
- Modify the program to write out a paragraph or pattern