

Esc101

Fundamentals of Computing

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Lecture 05
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<http://www.iitk.ac.in/esc101/>

Summary from Previous Lecture

- Local variables, scope of a variable
- Type conversions and casting
- The Java String class

The Java String Class

- String is also a pre-defined type
 - But not a **primitive** type
 - Just like a programmer-defined class
- Example methods:
 - **endsWith, equals, indexOf, substring**
 - Notion of method name **overload**
 - Each method has a **prototype**
- **Static** methods:
 - Examples: **valueOf(int x), valueOf(float y)**
- **Static** variables are also possible
 - Example: say, **maxSize** for the **Circle** class

More on Strings

- Static methods called using “ClassName.method”
 - Example: `String.valueOf(7)`
- Anything enclosed in “ ” is a string
 - Example: “abc”, “123”, “Esc 101”
- Can use “+” for concatenation
- The null string is “”
 - Note: different from `null`
- Some examples... (StrEx.java)

The Java Math Class

- Very useful
- Full of static variables and methods
- Examples:
 - `Math.PI`, `Math.E`
 - `Math.abs`, `Math.cos`, `Math.asin`, `Math.log`,
`Math.exp`, `Math.pow`, `Math.sqrt`
 - See Java Documentation for complete list
 - <http://java.sun.com/j2se/1.4.2/docs/api/overview-summary.html>
 - Look under `java.lang`
- Notion of **library**

Using Java without BlueJ

- Use another editor, like “kedit”
 - No colours anymore :-)
 - Can use “vim” or “emacs”, but few hours to learn
 - File name must be “ClassName.java”
- Compile using “javac”
- Run using “java”
 - Notion of **main** method
 - It is a public, static method, with one argument
 - Ignore the argument for now

The Java System.out Object

- **System** is a Java class, of which **out** is a static variable (what type?)
- Used for “output”
 - What about input? (later)
- Two relevant methods: **print**, **println**
- Examples:
 - **System.out.println(6);**
 - **System.out.print(“abc”); System.out.println();**

Summary and Next Class...

- Today:
 - The Java String, Math classes
 - Using Java without BlueJ
 - The System.out object
- Next class:
 - Expressions, operators
 - Conditionals, loops