

HCI 1/23

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Getting started with Java

- Make sure you have Java 8 JDK, not just a JRE
- Individual homework will use Java 8, or it at least must build and run on Java 8

Developing Java Projects in Gradle

- Gradle is a build automation tool like Make, Ant, and Maven
- It uses custom scripts written in Groovy or Kotlin to compile, link, run, test, and bundle projects
- Eclipse is fine for what we've done in the past but it won't help us much for larger projects so we need something different
- It was easy integration with Eclipse using Buildship

Java Swing for UI Development

- Features
 - Object oriented
 - Strong typing with both primitive types and object classes
 - Generics
 - Threads
 - Extensive APIs
 - * Has pretty much everything you might need for anything you want to do
- I don't think I actually have to write this down for most of you but I guess I will
- Essential libraries for UI development
 - Core APIs
 - Bundled APIs
 - Graphics APIs
 - Windowing APIs
- UI Elements and Features
 - Layout
 - Components
 - Events

Java FX for UI Development

- Included in Java 8 JDK
- Languages features - exactly the same as Swing
- Essential Libraries for FX UI Development
 - Core and bundled APIs
 - Application APIs
 - Scene APIs
- Elements and Features
 - Controls
 - Layout

- Styling/skinning
- Interaction
- Animation

Applications, Stages, Scenes, and Scene “Graphs”

- I’ll upload a picture
- Build a tree of nodes in parents
 - Same as Swing components in panels, but more elegantly and has cleaner code

```
public class FXHelloWorld extends Application
{
    public static void main(String[] args)
    {
        laungs(args);
    }

    public void start(Stage stage)
    {
        Button button = new Button();
        button.setText("Hello World!");
        //I'll finish the example code later
    }
}
```

- Common UI Widgets
 - Label
 - Button
 - List
 - Checkbox
 - RadioButton
 - Slider
 - Spinner
 - TextField
 - TextArea
 - ScrollPane

- Swing Widget Table

Widget	Class	Listener/Event	Useful things
label	JLabel	None	ImageIcon
button	JButton	Action	setEnabled()
list	JList	ListSelection	setSelectionMode(), clearSelection(), setSelectedIndex()
checkbox	JCheckbox	Action	constructor
radio button	JRadioButton	Action	ButtonGroup, setSelected()
slider	JSlider	Change	setLabelTable(), setSnapToTicks(), setValue()
spinner	JSpinner	Change	setValue()
text (short)	JTextField	Action	setText()
text (long)	JTextArea	Caret	setLineWrap(), setText()
scrollable	JScrollPane	Adjustment	constructor that takes the component to wrap and V&H scroll bar policies