



EECS1022
MOBILE COMPUTING



BUILDING AN ANDROID APP WITH


MVC

(SLIDES ADAPTED FROM PROF.H. ROUMANI)

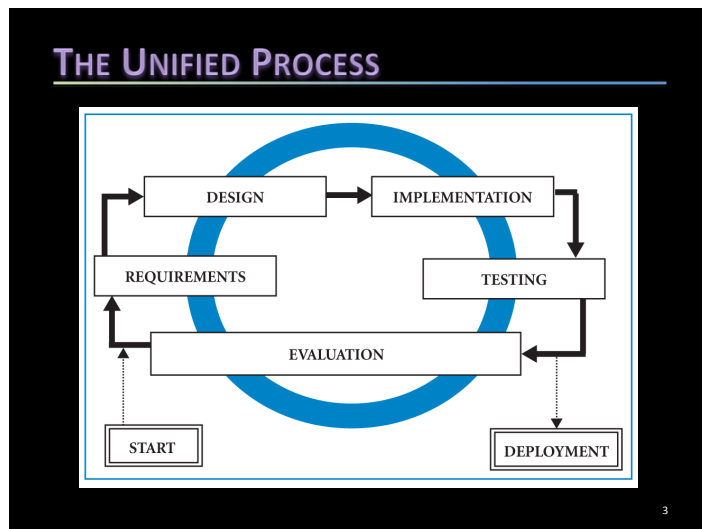
PROF. Y. LESPÉRANCE
Dept. of Electrical Engineering & Computer Science

THE SOFTWARE DEVELOPMENT PHASES

- Requirement Analysis
- Design
- Implementation
- Testing
- Deployment



2



THE MVC DESIGN PATTERN

Used to structure an app with a GUI, has 3 components:

- *Model*: represents the data and supports its manipulation
- *View*: specifies the how the data is displayed
- *Controller*: interfaces btw model and view, orchestrates response to user actions

4

BUILDING THE MODEL

- Attributes to hold the state
Keep them private and don't initialize (unless final)
- Constructor(s) to instantiate
Initialize the attributes per parameters or defaults
- Accessors and Mutators
One per attribute if needed
- Methods
Compute directly or delegate to APIs then return

5

BUILDING THE MODEL

- Attributes to hold the state
Keep them private and don't initialize (unless final)
- Constructor(s) to instantiate
Initialize the attributes per parameters or defaults
- Accessors and Mutators
One per attribute if needed
- Methods
Compute directly or delegate to APIs then return

6

TESTING THE MODEL

- PSVM
- Scanner object for input
- System.out for output
- Test cases with coverage
- Oracle
- Process:
 - *Instantiate with new*
 - *Invoke methods*
 - *Check return*

7

BUILDING THE VIEW

- One or more pages
- XML Generation
- The View hierarchy
- Layouts (Relative, Linear, ...)
- EditText vs TextView
- Properties (id, ...)

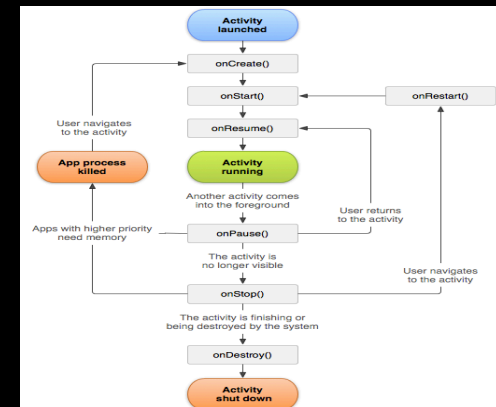
8

BUILDING THE CONTROLLER

- Structure:
 - A subclass of the platform
 - *onCreate* renders the xml
 - Follows a lifecycle
- C --> M: new and invoke
- M --> C: method return
- C --> V: findViewById
- V --> C: on events

9

THE ACTIVITY'S LIFECYCLE



10

DEPLOY THE APP

1. Turn device on
2. Plug in USB cable
3. Grab device in VBox
4. Run (green arrow)
5. Allow in device

Note: Above assumes device has developer's mode on; USB debugging OK; Vbox can grab device; ADB accepts device's vendor in /etc/udev/rules.99/.

11