

15-112: Animations Guide Sheet



Controller: Controls program flow and modifies App/Model

- **onAppStart(app)**

- *Called when the program starts*
- Initialize configurable variables stored in the app
 - Example: `app.stepsPerSecond`
- Initialize here all the variables that will change later based on events or just as time passes
 - E.g. shape parameters, timer, score, `gameOverFlag`

- **Event-Based Functions:**

- **onKeyPress(app, key)**
 - *Called everytime one key is pressed*
 - Example of something to do inside this function: calling `reset()` function when key (`r`) is pressed
- **onMousePress(app, x, y)**

- *Called every time a mouse button is pressed*
 - Example of something to do inside this function: updating shape coordinates (e.g. circle radius) based on the mouse press coordinates.
- **Others:** onMouseRelease, onMouseMove, onMouseDrag, onKeyRelease, onKeyHold
- **onStep()**
 - *Called “often” defined by app.stepsPerSecond variable*
 - app.stepsPerSecond=30 by default
 - Put here anything you need to check over time or change over time.
 - Example: Adjusting the coordinates of items on the screen in order to move them

App/Model: Stores Program State

- **Built-in program variables**
 - Examples: app.width, app.height, app.stepsPerSecond
- **Custom variables to be captured**
 - Graphics parameters that might change as time passes or as events happen
 - Examples: shape parameters, score

View: Draws the Model

- **redrawAll(app)**
 - Draw all shapes/labels
 - Called automatically after most/all of the other callbacks. (Including onStep, onKeyPress, etc)
 - App view could change based on conditions
 - Example: if gameOver display score, else display game shapes

MVC Error happens if you try to draw in control functions (e.g. onKeyPress, onMousePress) or modify the model in the View function (redrawAll)