As you arrive:

1. Start up your computer and plug it in.
2. ***Log into Angel*** and go to CSSE 120.
   Do the ***Attendance Widget*** –
   the PIN is on the board.
3. Go to the ***Course Schedule*** web page.
   Open the ***Slides*** for today if you wish.
4. Checkout today's project:

```
No project today
```

Session 19

Exam 2 information, project time

Exam 2 information

Project time

What's ahead

- **Today**:
  - Exam 2 info
  - Project time
- **Thursday**:
  - ***OPTIONAL*** review and project time
  - Each team: determine whether or not you will meet for your project
- **Friday**:
  - Will introduce C
  - Project time
- **Next Monday:**
  - **Exam 2: 7 to 9 p.m.**
  - **Details on next slides**
- Rest of ***next*** week:
  - Begin working in C
  - Sprint 3 of Python project

Exam 2 – same rules as for Exam 1

- **Monday, January 31, 7 p.m. to 9 p.m.**
  - **Olin 267 (Fisher) and Olin 269 (Mutchler)**
- **Format: 2 hours, same as previous exam.**
  - Paper part (roughly 30%). Resources:
    - Zelle book, zellegraphics handout, create handout
    - 1 double-sided sheet of notes that you prepare
  - On-the-computer part (roughly 70%). Resources:
    - Zelle book
    - Any written notes that you bring
    - Your computer and the files on it
    - Your own Subversion resources
    - **Any resources you can reach from the course web site by clicking only!**

Major topics for Exam 2:

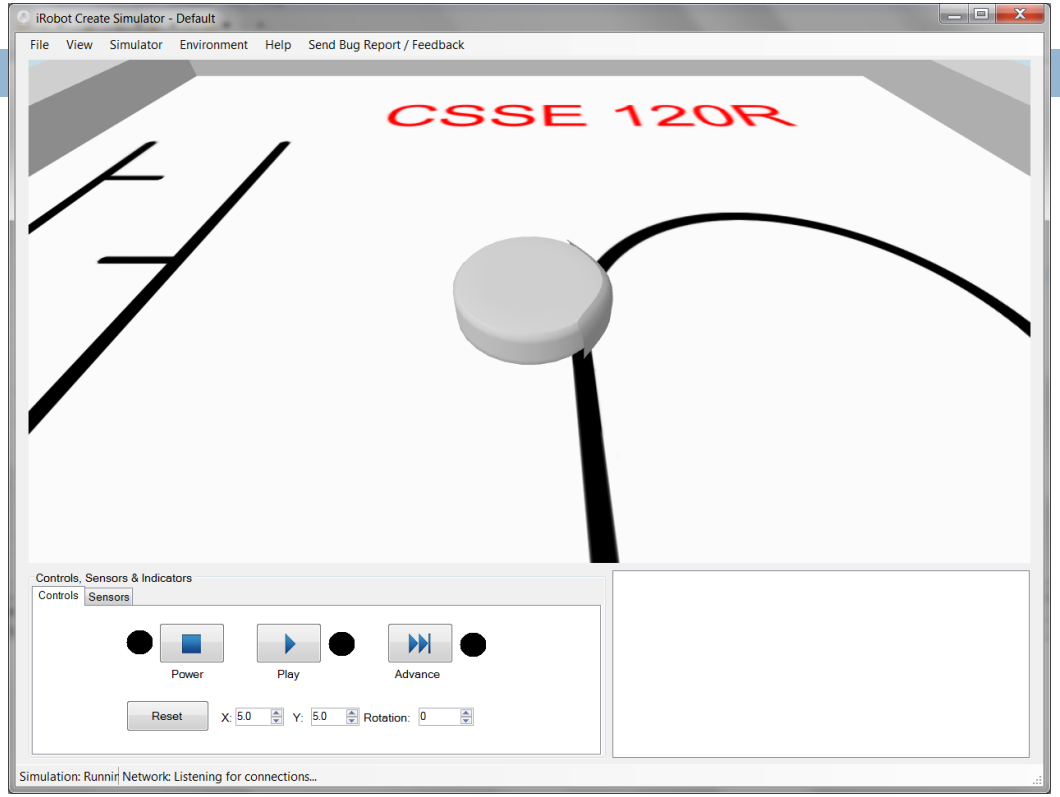
- **Writing and calling *functions* with *parameters* that *return* values**
  - Variables are ***local*** to the function in which they are defined
  - ***Parameters*** are values that come "into" the function from the caller
  - Send information back to the caller either by a ***return*** or by ***mutating*** a parameter
  - Functions that call functions that call functions… ***Procedural decomposition***
- ***Loop patterns*, especially:**
  - ***Nested loops*** & nested structures (e.g. lists inside lists)
  - The ***max/min pattern***
  - Getting input from the user using a ***sentinel***
  - The ***wait-for-event pattern***
- **Variables are *references* to values**
  - Hence, lists and most objects can be ***mutated*** by a function
  - Hence, functions can ***share data*** that both reference
  - ***Box-and-pointer diagrams*** for understanding this topic
  - Difference between ***mutating*** a parameter and ***returning*** a value
- ***Using* objects: *constructors*, *methods* and *instance variables***
- **The basics of *event-driven programming*, as in *tkinter* – *callback functions* and how they are called, share data, etc. Also the basics of *robot control*.**

To prepare:

- Understand ***everything*** from Exam 1
- Do/study **Session 13** exercises on ***sentinels*** and the ***max/min*** pattern
- Do/study **Session 14** exercises on ***nested loops***
- Work on your project
- **Write code, write code, write code!**
- **Practice debugging!**

The iRobot Create *Simulator*

- Lets you run your Python program with the Create actions simulated
- Kudo's to a CSSE 120 student for reviving it
- Installation instructions are at:



www.rose-hulman.edu/class/csse/resources

Then Robotics ~ Installing the Create Simulator

Just do the bottom part (***Install and Configure the Simulator***)

Rest of Session

- Meet with your project team
  - Consider having a standup meeting
  - Continue working on this Sprint
  - ***Decide on time/venue for next meeting***
- **Sources of help after class:**
  - **Assistants in the CSSE lab**

```
CSSE lab: Moench F-217
7 to 9 p.m.
Sundays thru Thursdays
```

  - **Email** `csse120-staff@rose-hulman.edu`
    - You get faster response from the above than from just your instructor

Important:

- The final version of the **Grading Rubric** is posted in the Project materials:
  Course web site,
  then ***Project Instructions***,
  then ***MusicDeliveryService***.
  Select ***Grading*** button,
  then the ***Music Delivery Grading Rubric*** link.
- **Note that you must complete all the highlighted items before getting points for the additional items**