Meet Edison

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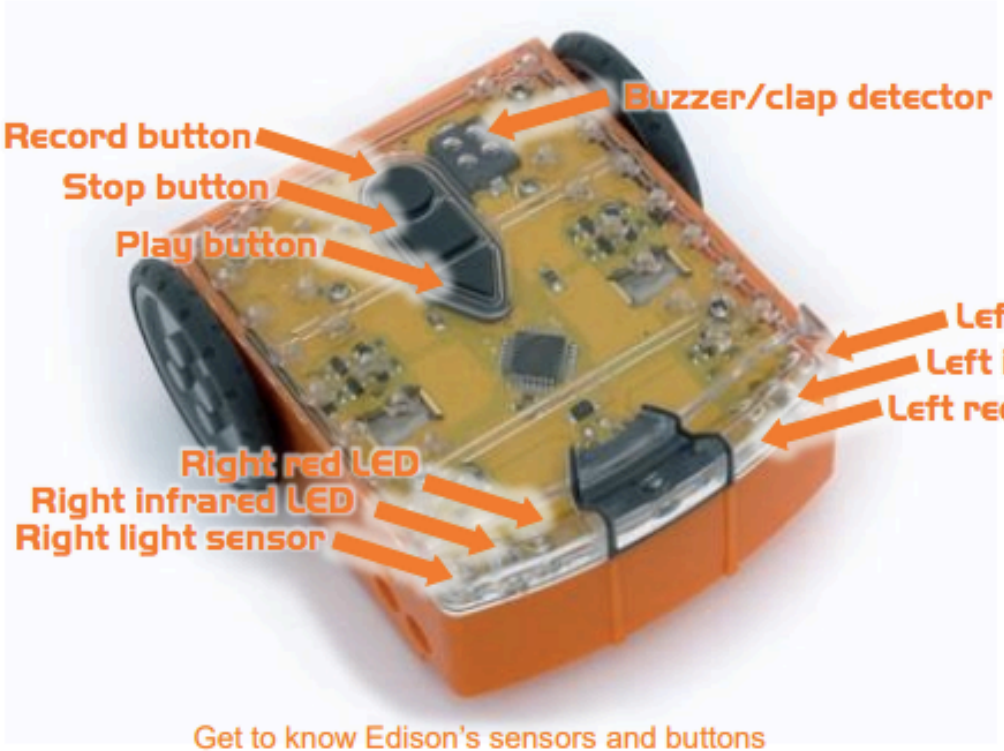
http://csed.fun

Learning Goals

- Note the nuances of programming in Python
- Explore the documentation for Edison Programming
- Set a goal for your program and then figure out how to accomplish it.

Getting started with Edison



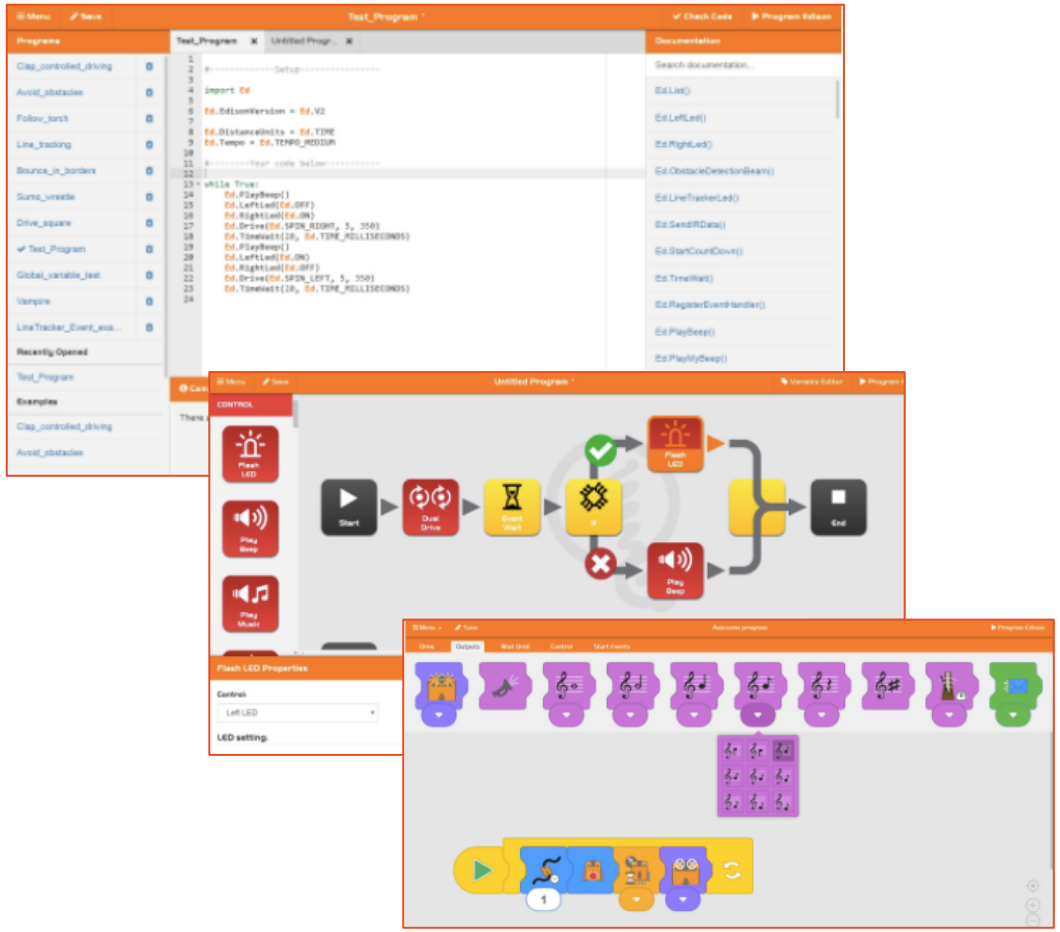
Get to know Edison's sensors and buttons

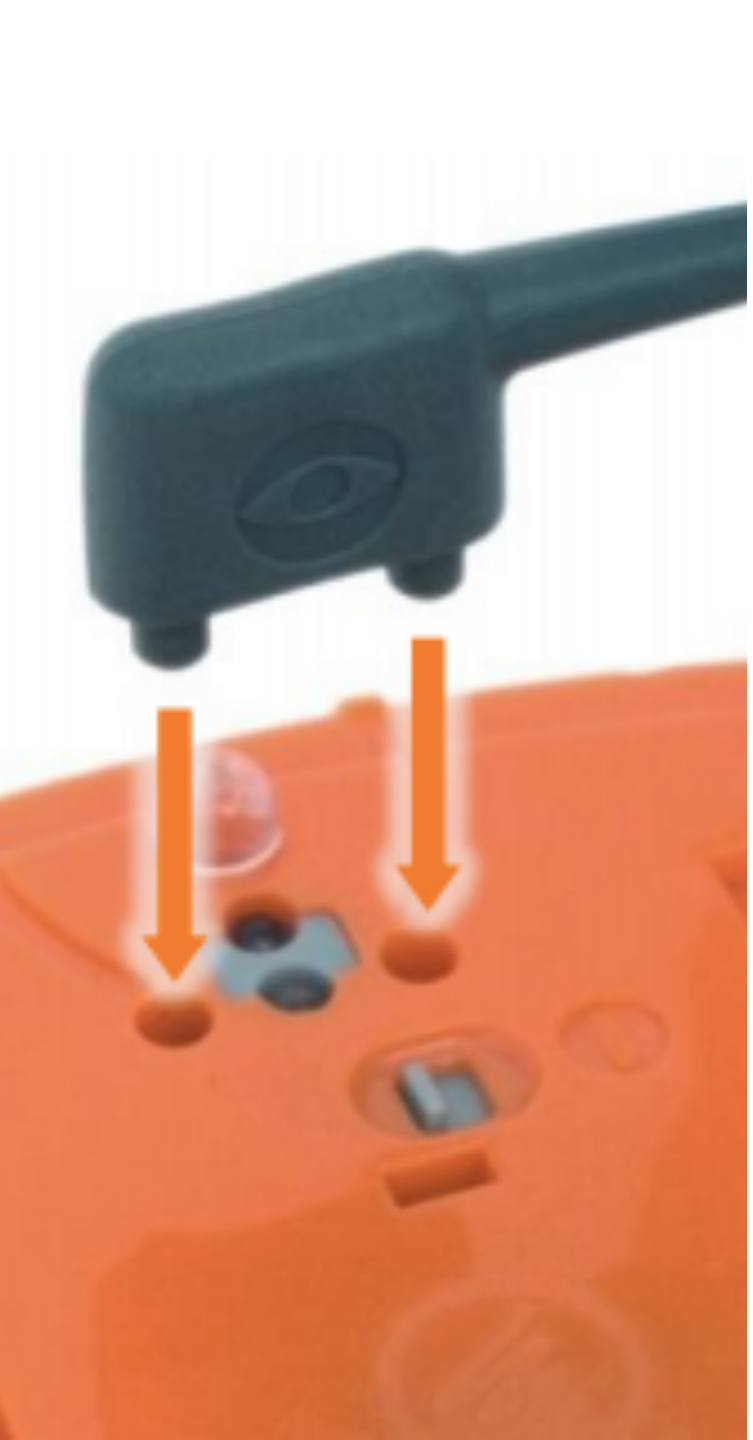
- Edison is a robot that you can program with block programming or the programming language Python
- It comes equipped with sensors, outputs, and motors
- We download programs onto Edison using sound, kind of like an old school modem ☺

Play button – Start program
Stop button – Press to stop a program
Record button – 1 press = download program, 3 presses = read barcode

Programming Options

1. Program Edison using Python with the EdPy web-based IDE
   - www.edpyapp.com/
2. Program Edison using a visual block programming language
   - www.edblocksapp.com
3. Program Edison using a hybrid graphical and text-based program
   - www.edwareapp.com





Downloading a Test Program

- Go to www.edpyapp.com
- Open the Example called Test_Program
- Plug in the EdComm cable to the headphone socket
- Make sure your computer sound is all the way on and up

1. Click on the button to ✓Check Code
2. Make sure Edison is on, and push the ● on Edison to Record a new program
3. Click on the button to ▸ Program Edison
4. You should hear some sounds followed, which will then stop
5. Disconnect the EdComm cable, and push the ▲ on Edison to start the program
6. Push the ■ on Edison to stop the program

Programming Edison

- Edison sure seems confused in Test_Program!
- Explore how the program works by looking at the documentation for each method used
  - `Ed.PlayBeep()`
  - `Ed.LeftLed()`
  - `Ed.RightLed()`
  - `Ed.Drive()`
  - `Ed.TimeWait()`

Test_Program

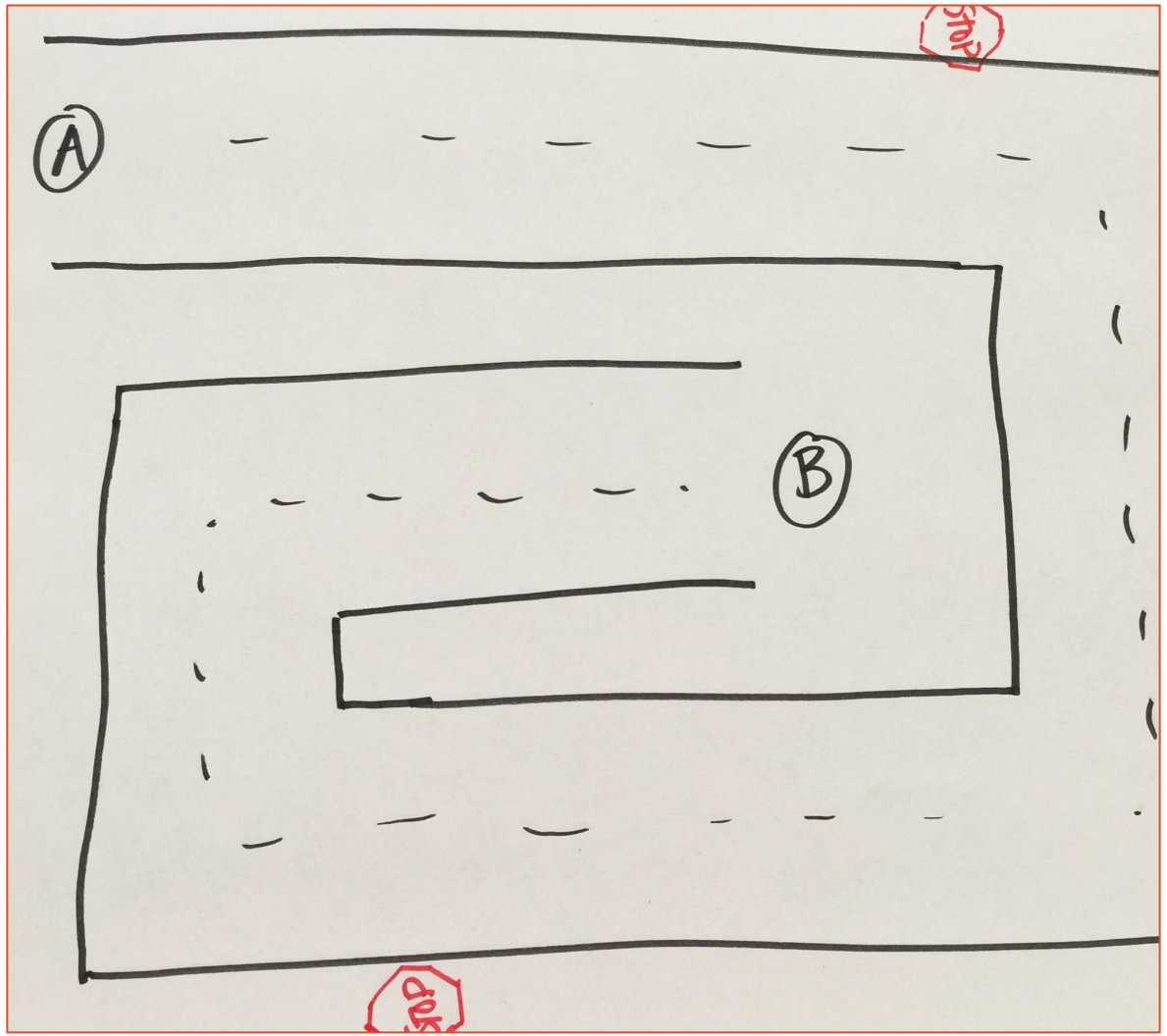
```
1
2  #------------Setup---------------
3
4  import Ed
5
6  Ed.EdisonVersion = Ed.V2
7
8  Ed.DistanceUnits = Ed.TIME
9  Ed.Tempo = Ed.TEMPO_MEDIUM
10
11 #--------Your code below-----------
12
13
14
15 while True:
16     Ed.PlayBeep()
17     Ed.LeftLed(Ed.OFF)
18     Ed.RightLed(Ed.ON)
19     Ed.Drive(Ed.SPIN_RIGHT, 5, 350)
20     Ed.TimeWait(20, Ed.TIME_MILLISECONDS)
21     Ed.PlayBeep()
22     Ed.LeftLed(Ed.ON)
23     Ed.RightLed(Ed.OFF)
24     Ed.Drive(Ed.SPIN_LEFT, 5, 350)
25     Ed.TimeWait(20, Ed.TIME_MILLISECONDS)
26
```

How does Python look similar to Arduino (C++) and p5.js (JavaScript) languages?

How does it look different?

Explore Edison Programming

1. Make Edison drive in a square shape.
2. Make Edison beep every time he turns in the NW corner of the square.
3. Make Edison flash his lights every time he turns in the NE corner of the square.



Activity: Stay on Course

1. Using a large sheet of paper, draw a course for Edison to follow.
   - Only use straightaways and 90 degree turns for this course!
   - Have a starting point (A) and an ending point (B).
   - You may draw stop signs on the course to indicate that Edison must stop there for at least 1 second!
2. Program your Edison to complete your course.
   - First go (A) to (B)
   - Then go backwards (B) to (A)
3. Trade courses with another team and program that course.