



Lab 2. Parallax and Actuator

23th Sep. 2014

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Announcement

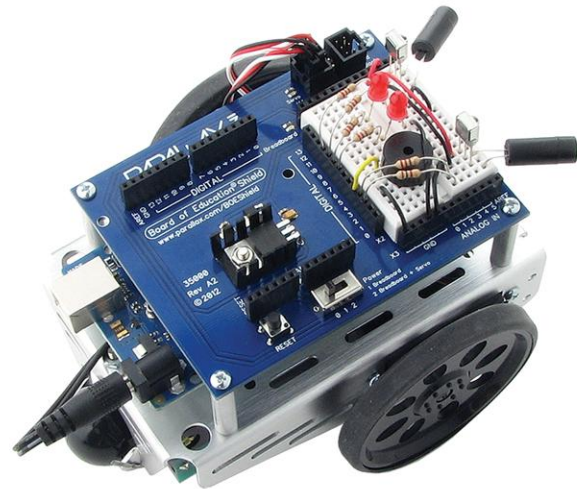
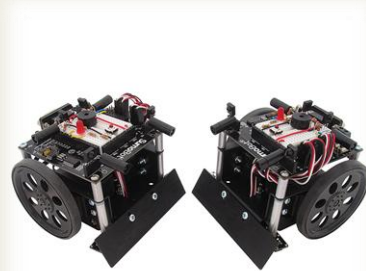
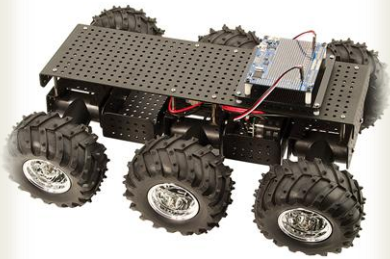
- ❑ No preliminary report for today's lab.
- ❑ Lab 2 final report due is next Tuesday midnight (23:59).



Parallax

- ❑ Electronics including microcontrollers, robotics, sensors, and so on.

Robotics Shield Kit (for Arduino)





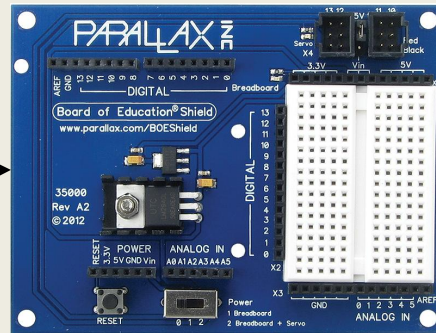
Control Flow



upload



Arduino
Controller



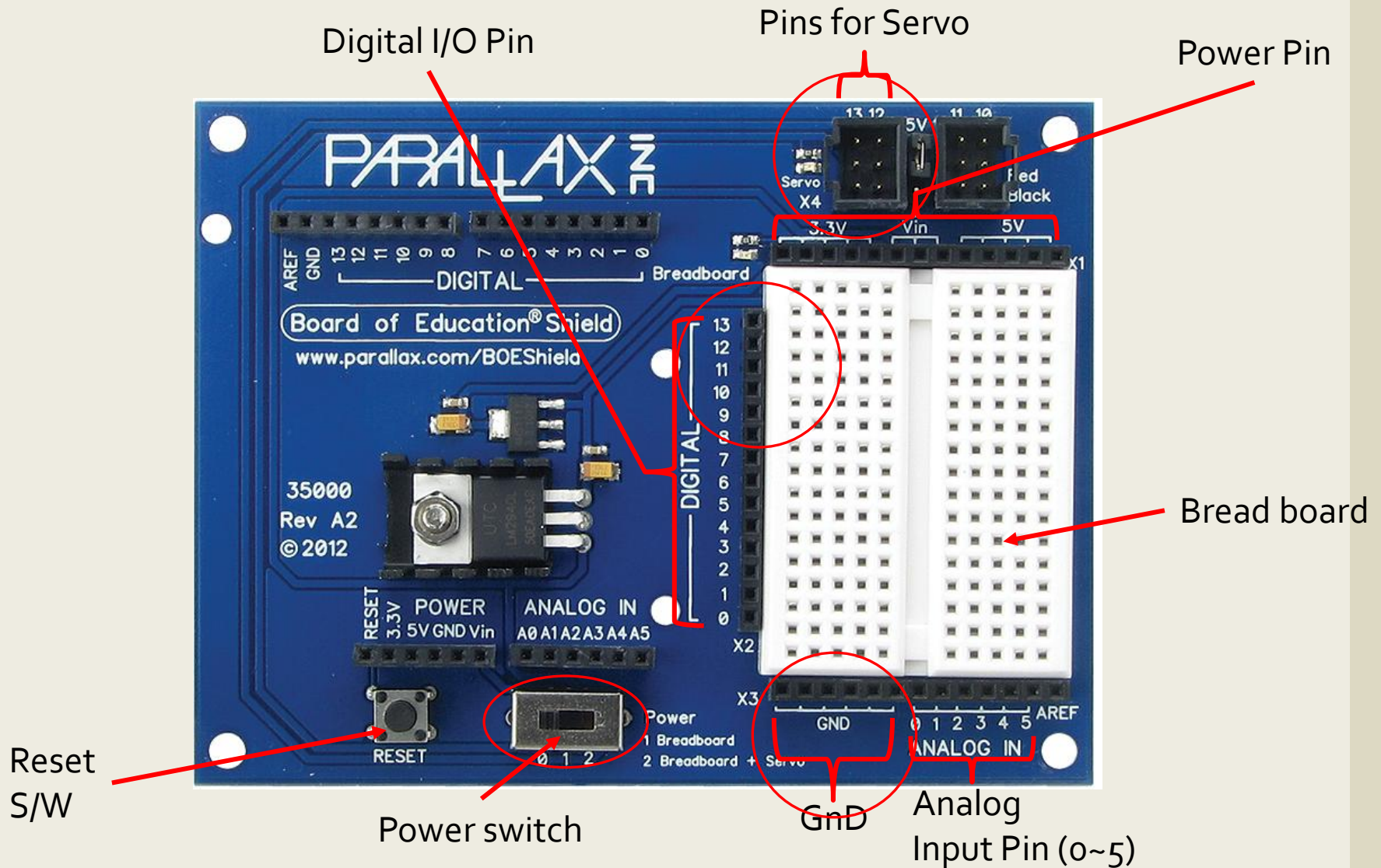
Board of Education Shield
Connector



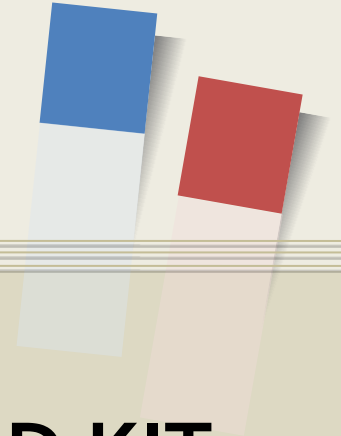
Servo
Actuator



Structure of Shield



CS310 Embedded Computer System
Computer Architecture Lab.



ASSEMBLE ROBOTICS SHIELD KIT



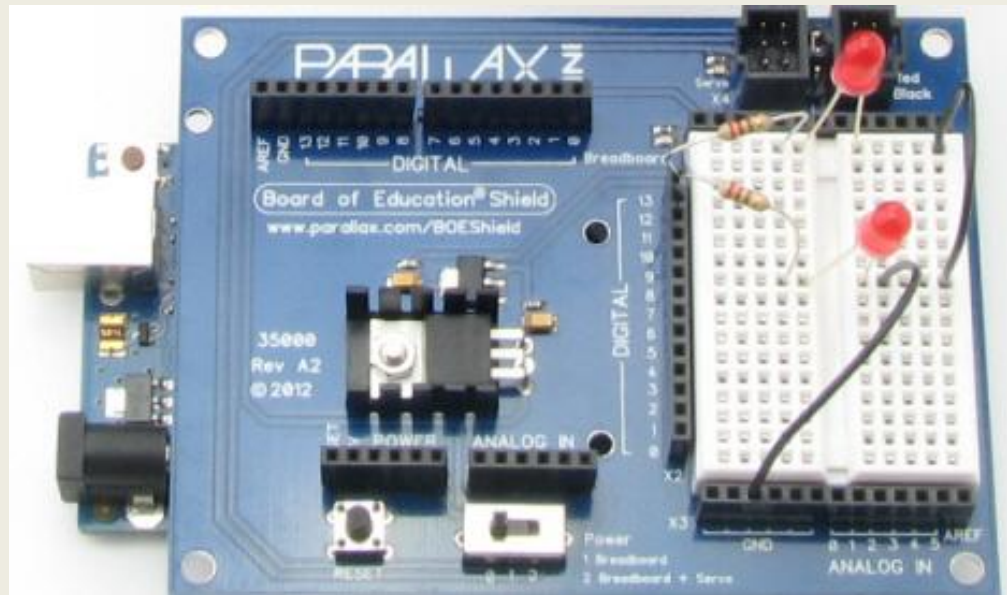
Reference

- ❑ Please refer web site:
 - ❑ <http://learn.parallax.com/ShieldRobot>
 - ❑ [Chapter 3. Assemble and Test your BOE Shield-Bot](#)



Assignment 1

- ❑ Connect two LEDs (Red and Green) on Parallax board.
- ❑ Write Arduino code to control LEDs as described in the problem specification.





Assignment 2



- ❑ Make your robot act as following direction:
 - ❑ Go straight 2 sec
 - ❑ And stop 1 sec
 - ❑ Turn right
 - ❑ And stop 1 sec
 - ❑ Go straight 2 sec
 - ❑ And stop 1 sec
 - ❑ Turn left
 - ❑ And stop 1 sec
 - ❑ Go backward 2 sec
 - ❑ And stop
- ❑ Please refer to example codes in tutorial web site.
 - ❑ Refer to [Chapter 2, Activity #5: Centering the Servos](#) to adjust your servo.
 - ❑ Refer to [Chapter2, Activity 6: Testing the Servos](#) to control servos.



Caution!

- ❑ Batteries are burned out so quickly!
 - ▣ We only give you 5 batteries. No additional battery.
 - ▣ You have to buy yourself.

CS310 Embedded Computer System
Computer Architecture Lab.



IT'S TIME TO IMPLEMENT!

