

2016 GIRLS' CODING CAMP

Beginner Section

DAY 3 - FINCHES!!!

FINCHES!

Today we get to play with robots

FINCHES

- We will be constructing a Finch object, just like a `DrawingTool` object.
- The code will be translated from our computers to the robot when we plug it in and run the program



○ **FINCH METHODS**

- `setWheelVelocities(int left, int right, int timeToHold)`
- `sleep(int timeToHold);`
- `quit();`
- `setLED(int red, int green, int blue);`

LET'S TRY IT!

TASK 1

- Figure out how to make the finch turn by changing the wheel velocities
- **Try to make the finch go in a square on the floor**

TASK 2

- Figure out how to manipulate the movements by using a loop
- **Try to make the finch go in a spiral on the floor, either coming in to make a spiral or out**



DAY 4: CONSOLE IO

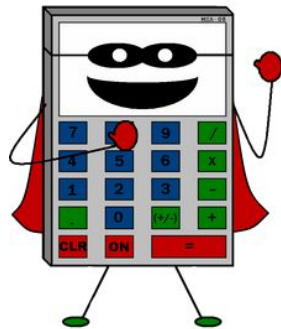
- I/O stands for input/output
- To use `ConsoleIO`, you must create a `ConsoleIO` object
(`ConsoleIO console = new ConsoleIO();`)

Methods:

- `int n = console.readInt();`
- `double d = console.readDouble();`
- `String token = console.readToken();`
- `String line = console.readLine();`

* REMEMBER: `'import apcslib.*;'` at top of program

CHANGE CALCULATOR



- Prompt user for Total Cost
- Prompt user for Amount Paid
- Calculate and output change as # of dollar bills, # of quarters, # of dimes, # of nickels, and # of pennies
 - Hint: consider using / and %
 - Challenge: Ask user if they want to run again and repeat as long as input is “yes”

* Typecasting from double to int - fix round-off error:

Int value = (int)(double value + 0.00001)

CHOOSE YOUR PROJECT

- Magic 8 Ball
- Piglulator
- Your Own Choice (Check with teachers)

MAGIC 8 BALL INSTRUCTIONS

- `Math.random()` - generates a random number x such that $0 \leq x < 1$
- Have a predefined set of responses
- Prompt the user for a question
- Use `Math.random()` to randomly choose one of your preset responses and display to the user
- Allow user to ask again without rerunning program



PIGLATINATOR INSTRUCTIONS

- Prompt user for a word
- Apply Piglatin rules and display output



PigLatin Rules:

- Words starting with vowel, add “yay” to the end
- Otherwise, take all consonants up to first vowel/”y” and move it to end of word. Then add “ay”