Java: Day 1

with
Project Include

Meet your instructors

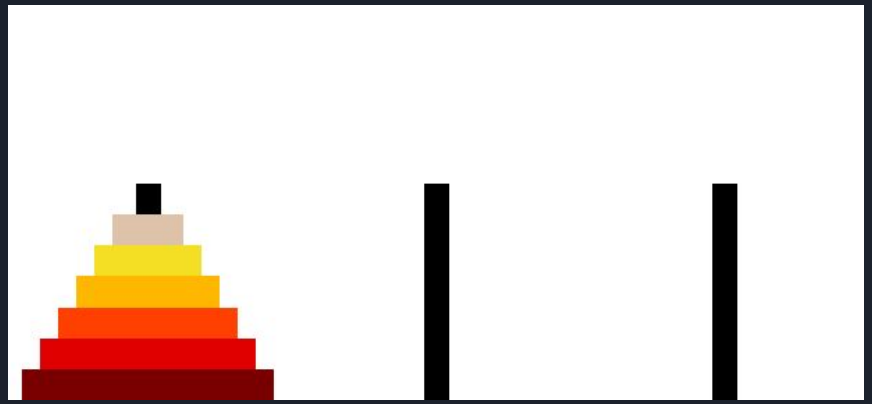
- **Luna**

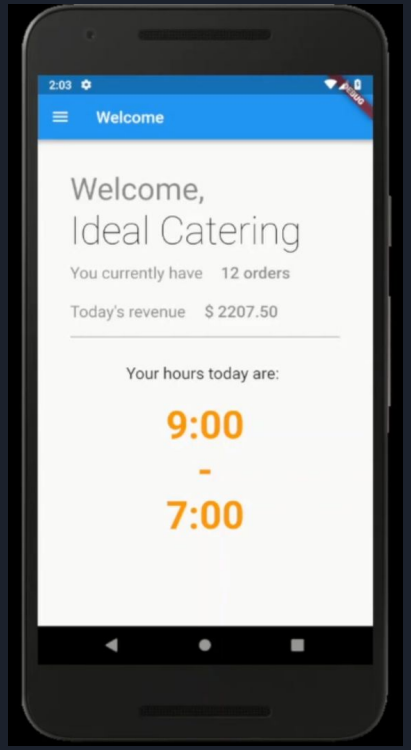
Second-year Civil Engineering

- **Finnbarr**

Fourth-year Computer Science, Focus in Video Game Design

Some things we've made with code





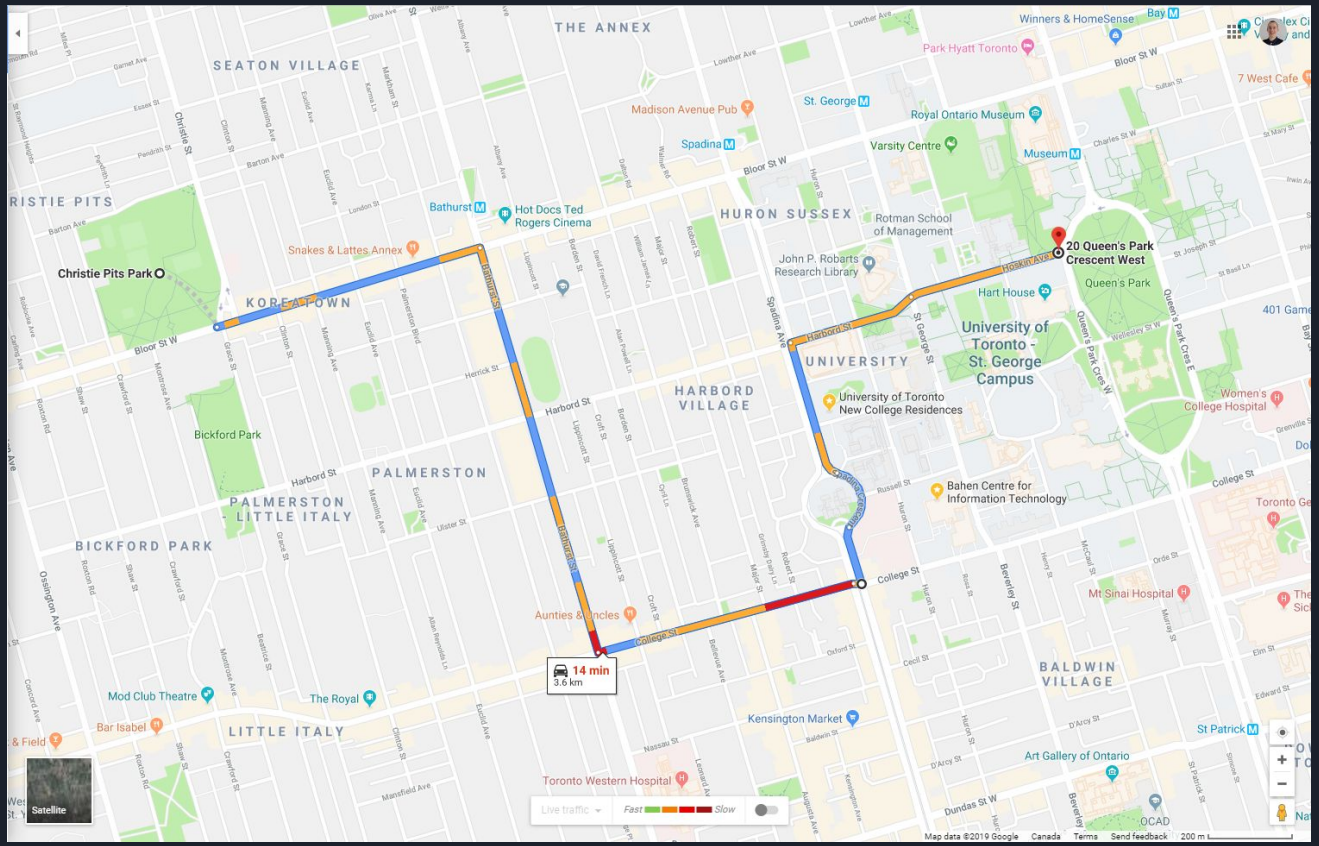
Introduce yourselves

- Name
- Year
- Most impressive thing you know of made with code?

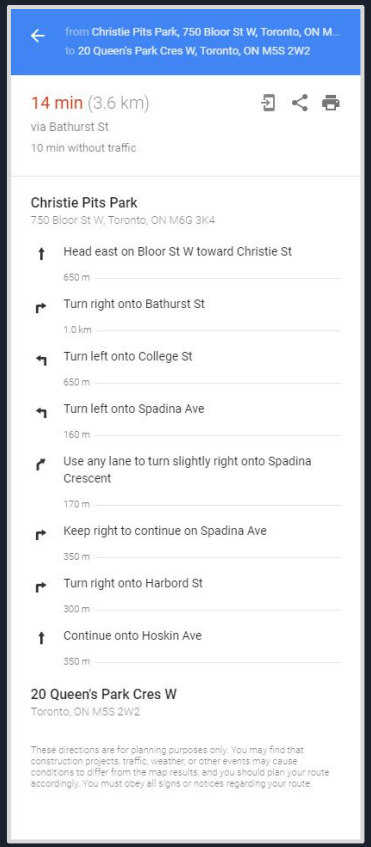
Survey

tiny.cc/PI-survey

How do you give computers instructions?

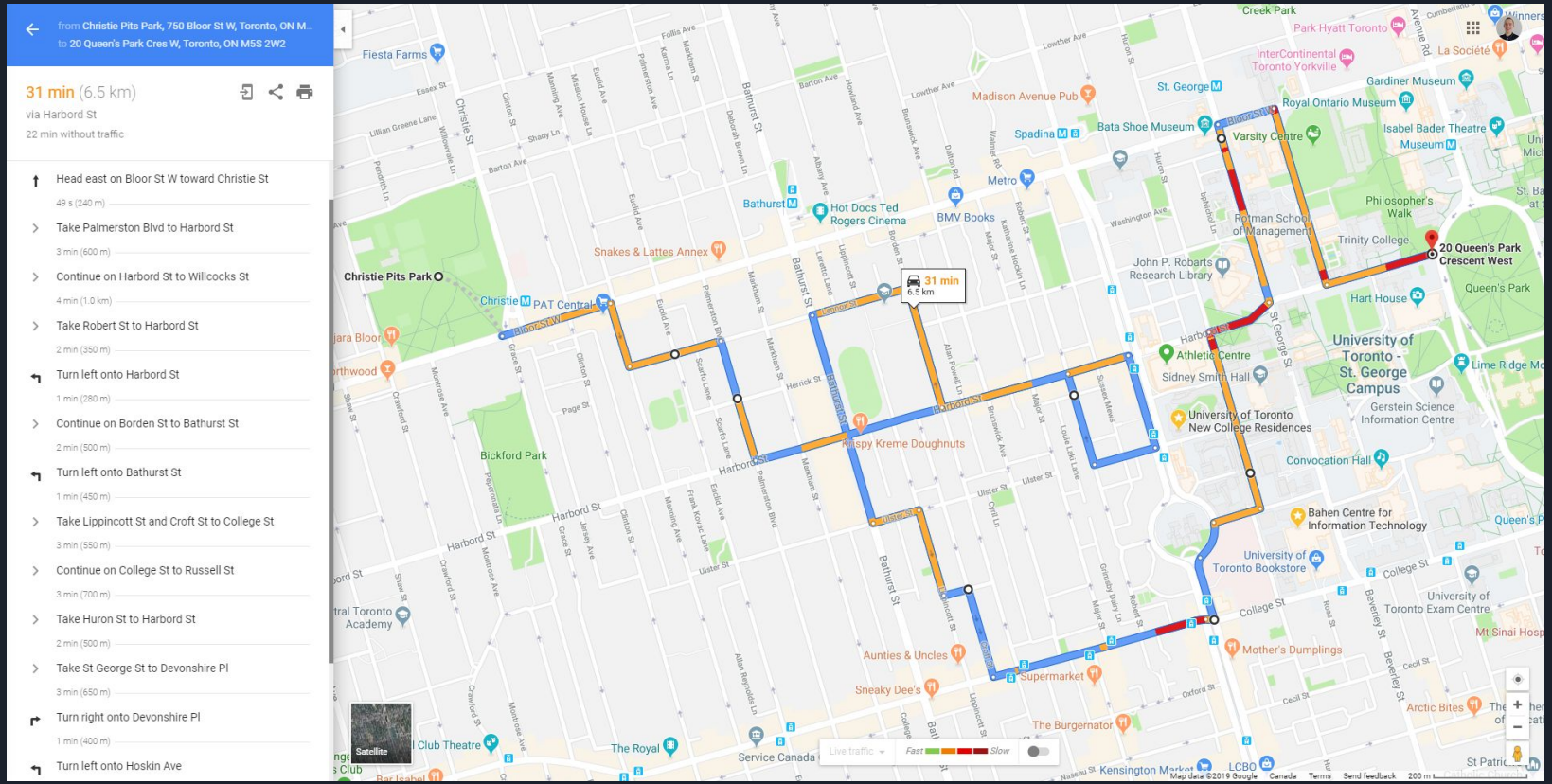


You need a list of *simple*, *specific* commands




```
input.onButtonPressed(Button.A, () => {
    basic.pause(500)
    DriveForward(100)
    basic.pause(500)
    TurnLeft(90)
    basic.pause(500)
    DriveForward(100)
    basic.pause(500)
    TurnLeft(90)
    basic.pause(500)
    DriveForward(100)
    basic.pause(500)
    TurnLeft(90)
    basic.pause(500)
    DriveForward(100)
    basic.pause(500)
    TurnLeft(90)
})
```

Complex code is just like complex instructions!



Your Code

tiny.cc/join-class

or plain code: tiny.cc/java-day1

repl.it/languages/java

repl.it Dashboard my repls student notifications talk learn/teach teststudent40...

My Enrollments

Classrooms

Java Bootcamp

Java

0 assignments

repl.it Classroom my repls student notifications talk learn/teach

Java Bootcamp

Java

Cedarbrae Library // July 15-19, 2019 // Ages 13-17

share your program enhance your work after submitting

back to dashboard

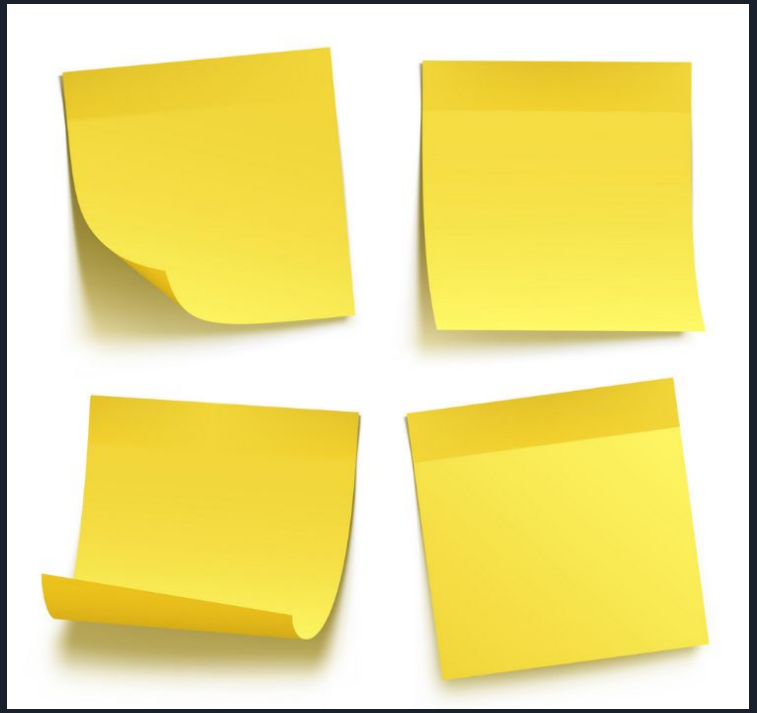
Assignments

Assignment Name	Date Due	Last Activity	All Submissions	Export

Projects

Project N	Assigned	Status
Day1	Jun.18.2019	Repl Linked

Comments



Comments = notes for you & other coders

```
// A line with two forward slashes is a "comment"; it's greyed-out and does nothing.
// We'll use them to leave you notes and instructions below!
```

- **Put “//” before a line to comment it out**

- **Highlight code with your mouse, then press “Ctrl” + “/” to comment/uncomment multiple lines**

Output

Output = showing things to us humans

```
System.out.println("Hello, World!");
```

Output = showing things to us humans

```
System.out.println("Hello... " + "World!");
```

- **We can also stick text together to print the final result**
  - **this is called CONCATENATING**

Variables


Master Bedroom
Kids' Room
Dishes
Attic
Kitchen
Bathroom
Hall Closet
Living-room
Toys

Variables = labeled boxes that hold things

- **String** Any sequence of text; a letter, a word, or a sentence.

```
String myMessage = "My favorite color is green";
```

- **int** This stands for “integer”, which is simply a whole number.

```
int myNumber = 42;
```

Variables = labeled boxes that hold things

- **We can print out variables by name to access their contents:**

```
System.out.println(myMessage);
```

- **Or concatenate regular text with our variables:**

```
System.out.println("My favorite number is " + myNumber);
```

User Input

Input = us giving the computer more information

```
System.out.println("Type your name, then press Enter:");
String myName = reader.nextLine();
```

- **Now try printing something with your name in it!**

```
System.out.println("My name is " + myName);
```

Math

Math = starts simple, but used in everything

```
System.out.println(2 + 3);
```

- **+ Addition**
- **- Subtraction**
- *** Multiplication**
- **/ Division**

Type Conversion

Type Conversion: changing the types of variables

- **What if we want to add a String to an int?**

```
String stringNumber = "10";
System.out.println(stringNumber + 7);
```

- **Does this give us 17 like we want?**

Type Conversion: changing the types of variables

- **This is concatenating to create a new String:**

```
"10" + 7 = "107"
```

- **But we want addition to create a new int!**

```
10 + 7 = 17
```

Type Conversion: changing the types of variables

- **Convert a String to an int with:**

```
int intNumber = Integer.parseInt(stringNumber);
```

- **intNumber + 7 = 17!**

Putting it all together...

A simple calculator

- **Follow these steps using what you've learned:**
  - **Ask for the first number**
  - **Input the first number**
  - **Ask for the second number**
  - **Input the second number**
  - **Calculate the sum/difference/product/quotient**
  - **Output the result (showing the operation you did!)**
    - **For example, "2 + 3 = 5"**

A simple calculator

```
System.out.println("What is the first number?");
int number1 = Integer.parseInt(reader.nextLine());
System.out.println("What is the second number?");
int number2 = Integer.parseInt(reader.nextLine());

int sum = number1 + number2;

System.out.println(number1 + " + " + number2 + " = " + sum);
```

Feedback

tiny.cc/PI_feedback