**Lesson 21**

(5 min)

Announcements:

* Final Project Survey – will help decide partner groups
* Everybody please take it at the end of class

(10 min)

Student Demo

* Python scraper for Alexa Skills Store
* How might we use this for our final projects?
* @Jack — how could you share this with us so we can all use it?

(15 min)

Generics in Java

* Show code in Generics Demo
* Talk about need for generics
* Talk about for each loop
* Talk about printf syntax for “format string”
  + [Interesting other use cases](https://alvinalexander.com/programming/printf-format-cheat-sheet)

(5 min)

TidePooler Bug Fix

* The base URL needs to be “https” not “http” because the API requires a secure connection
  + It worked in the browser b/c it knew to correct the URL to “https”
  + Lambda doesn’t automatically do this
* After you fix this, you will run into a Timeout Error
  + Adjust to 1 min
* Whenever making API calls to another service, it takes several seconds, so you have to increase the timeout
* Also — the slowness in the first call, do you know why that is?
  + Because it’s spinning up a new server for our function, and that takes a few seconds
  + This allows them to let Lambda servers go dormant when not in use, which helps make AWS so inexpensive

(15 min)

TidePooler — Breakout Groups — Zoom

* Focus on 2 things:
  + Task 1: Create a diagram or some kind of visual (or write out the flow chart) of all the methods invoked (in order) when this sample utterance is said:
    - “when is high tide?”
    - Use log statements if needed
  + Task 2: Conceptual Challenge
    - What is the purpose of the CityDateValues<L, R> class?
    - How might you achieve the same purpose without generics?

(10 min)

Wrap Up

* Take Final Project Group survey
  + Final project groups will be announced later today
* Please plan to meet once before Thanksgiving to brainstorm final project ideas
  + I will let you all find a convenient time and coordinate
  + You should send out meeting invites as well
  + Send me a progress update (by email) after you have met