2019 Python Camp

Code Ninjas | The Woodlands | Jackson Hagood

This revised version of the Python Camp focuses more on straight Python knowledge. This camp is intended for older ninjas, as there is just one text game at the end. The camp is designed for a 3 day setup. The c files are secondary to the lesson files if time is stressed. Note: The provided finished files are there for the sensei to follow, but they should still write the code along with the students. If there is not enough content, go through the [extra projects](https://drive.google.com/open?id=1LkNhZK9UicO4fHiA4NUXs9bcJmtP4G8z).

Camp Bell Schedule

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 8:55 - 9:20 | 9:20 - 9:40 | 9:45 - 11:00 | 11:00 - 11:35 | 11:35 - 12:10 | 12:10 - 1:25 | 1:25 - 2:00 |
| I. Warm-up | II. Icebreaker | III. Block 1 | IV. STEM 1 | V. Break | VI. Block 2 | VII. STEM 2 |

Before Camp

1. Install [Python 3.7](https://www.python.org/downloads/)
2. Install [PyCharm](https://www.jetbrains.com/pycharm/download/#section=windows)
   1. Setup the Interpreter.
3. Bookmark [typing.com](https://www.typing.com/)
4. Discuss rules
   1. Normal [dojo rules](https://docs.google.com/document/d/1XgdeysA3TL5ikJIZ-VHryBGMX0a0HuFFT7tPAve8zpE/edit).

Day 1 | Starting with Variables, Conditionals, and Flow Control

1. Warm-up
   1. [typing.com](https://www.typing.com/)
2. Ice Breaker
   1. First day Icebreakers are usually introducing yourself to students, getting student’s names, and assigning seats.
   2. Inform students of major dojo rules and consequences.
3. Block 1
   1. Introduce students to Python
      1. Python is a widely used programming language.
      2. Python is high level, and makes extensive use of whitespace.
   2. Have students get setup
      1. Create a folder in documents called their name.
      2. Have students open PyCharm.
      3. Have students create a new project from their folder.
   3. Introduce students to PyCharm
      1. How to add a new file and run code.
   4. Go through [1.1](https://drive.google.com/open?id=1p03r6Ag1I2cgzDI862_Si3r5reMheDF8) with the students.
   5. Go through [1.2](https://drive.google.com/open?id=1Dxkqk6kcX8MB6-CWnfa48sH9farhHRSq) with the students.
   6. Go through [1.3](https://drive.google.com/open?id=1iZhM9sRU0mIf69Qu5d_UvLiL-psayEyf) with the students.
4. STEM 1
   1. Assign students into groups.
   2. Introduce STEM challenge of Sensei’s choosing to students.
   3. Allow the remaining time for the students to compete in a practice round.
5. Break
   1. Students may eat any snacks they have outside of the dojo.
   2. They can also play with the Snapino kit, the blocks, or Scratch.
6. Block 2
   1. Recap the previous block.
   2. Go through [1.4](https://drive.google.com/open?id=1SQX4qlxtrkMxXh7czsjxoGhYXWJ3sCfs) with the students.
   3. Go through [1.5](https://drive.google.com/open?id=1X_dNfptaiQ89VS98lFJgV6J-smRM33Wn) with the students.
   4. Go through [1.6](https://drive.google.com/open?id=1mCYk9Tujpb5rm8OY7nqzxaj2pcLSoGqU) with the students.
   5. Go through [1.7](https://drive.google.com/open?id=1Q12jjILi9Rx0NAarE2rWqsFOZr327HCF) with the students.
   6. Recap the day.
7. STEM 2
   1. Gather students in their same groups from earlier.
   2. Students will now compete in the same STEM, this time for prizes chosen by Senseis.

Day 2 | Further with Loops, Functions, and Lists

1. Warm-up
   1. [typing.com](https://www.typing.com/)
2. Ice Breaker
   1. Pick an Icebreaker to run through with the students, perhaps hangman.
3. Block 1
   1. Recap the previous day
   2. Go through [2.1](https://drive.google.com/open?id=19XJ6rPGWhoyASRtNW6baf37z28eOeTxT) with the students.
   3. Go through [2.2](https://drive.google.com/open?id=19bACq6-oimfgGSWUUutuRmgAPYpuL7q_) with the students.
   4. Go through [2.3](https://drive.google.com/open?id=1Gi9-y-lx7p6WQe-mXpII6DYRp1ndbHej) with the students.
4. STEM 1
   1. Assign students into groups.
   2. Introduce STEM challenge of Sensei’s choosing to students.
   3. Allow the remaining time for the students to compete in a practice round.
5. Break
   1. Students may eat any snacks they have outside of the dojo.
   2. They can also play with the Snapino kit, the blocks, or Scratch.
6. Block 2
   1. Recap the previous block.
   2. Go through [2.4](https://drive.google.com/open?id=1AxGbECAD8kw1-BniWBYVWbVEKR9SPUFA) with the students.
   3. Go through [2.5](https://drive.google.com/open?id=1aASqJf6Me3eKgEO-IEKfWqbulTz9atEU) with the students.
   4. Go through [2.6](https://drive.google.com/open?id=1dcEJSW84JQtvKnaQqM-s3bN2zS58E3Ub) with the students.
   5. Have the students attempt [c.1](https://drive.google.com/open?id=1mXRxAcSbW1sXwrqOI10gS5ZQ24K0wbsR)
   6. Go over the solution for [c.1](https://drive.google.com/open?id=1mXRxAcSbW1sXwrqOI10gS5ZQ24K0wbsR)
   7. Recap the day.
7. STEM 2
   1. Gather students in their same groups from earlier.
   2. Students will now compete in the same STEM, this time for prizes chosen by Senseis.

Day 3 | Finishing with Sets, Dictionaries, and the Game

1. Warm-up
   1. [typing.com](https://www.typing.com/)
2. Ice Breaker
   1. Pick an Icebreaker to run through with the students, perhaps [madlibs](http://www.redkid.net/madlibs/).
3. Block 1
   1. Recap the previous day
   2. Go through [3.1](https://drive.google.com/open?id=1PMUcyBU-ekhoZCc3aO1sBQBEbcrQRxLz) with the students.
   3. Go through [3.2](https://drive.google.com/open?id=1NaW46KTtsiaCugcmCI1WR3xljYn0aSyr) with the students.
   4. Go through [3.3](https://drive.google.com/open?id=1LON3MhZW12tEK0GmA0z43q1vnQ3U129X) with the students.
   5. Go through [3.4](https://drive.google.com/open?id=11ZjM5uvXt0WOPxPQdjCcHPkXj0rKf5vN) with the students.
   6. Have the students attempt [c.2](https://drive.google.com/open?id=1G8_YrvAbyAVX2NNAbMDr8lbCTaED7tej)
   7. Go over the solution for [c.2](https://drive.google.com/open?id=1G8_YrvAbyAVX2NNAbMDr8lbCTaED7tej)
4. STEM 1
   1. Assign students into groups.
   2. Introduce STEM challenge of Sensei’s choosing to students.
   3. Allow the remaining time for the students to compete in a practice round.
5. Break
   1. Students may eat any snacks they have outside of the dojo.
   2. They can also play with the Snapino kit, the blocks, or Scratch.
6. Block 2
   1. Recap the previous block.
   2. Have the students attempt [c.3](https://drive.google.com/open?id=1srG22LghSFFGy8UM79oyW2Ozl2QqjlWK)
   3. Go over the solution for [c.3](https://drive.google.com/open?id=1srG22LghSFFGy8UM79oyW2Ozl2QqjlWK)
   4. Go through [g.1](https://drive.google.com/open?id=1TQa79YMfPkrsUKhpRM3EWof32bEAObs8) with the students
      1. Go section by section, and think through the game as a class.
   5. Recap the camp.
7. STEM 2
   1. Gather students in their same groups from earlier.
   2. Students will now compete in the same STEM, this time for prizes chosen by Senseis.