CLOUD COMPUTING BEGINNER

D'Code Innovation Labs

This course will cover all the topics which are most important for technical interviews. At the end of every topic questions based on the topic will be shared and solved.

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1 PYTHON

- Big Picture
- Pycharm
- Package Manager (PIP/Anaconda)
- Scaler Types, Operators and Control Flow
- Introducing Strings, Collections and Iteration
- Modularity in Python
- Object Oriented Programming
- Built-In Collections
- Exception Handling
- Iterations and Iterables
- Classes
- File IO and Resource Management
- Multithreading
- Packages
- Database
- Introduction to REST Api
- Introduction to Flask
- Interacting with API
- Case Study
  - A Game Of Chance
  - Movie Store (using Collections)
  - Movie Store (using Database)
  - Build a static file generator with python
  - Add Extension to a Static Site Generator
  - Build a Personal Budget Report with Python Collections and Iterables
  - Decoding Sensor Data using Python
  - Build Your Own CLI Planner App using python abstract Base classes
  - Control drone from your laptop

2 DATA STRUCTURES

- Introduction to Data Structure
- Big O Notation
- Essential Concept
  - Memory and Logarithm
- Array
- Recursion
- Linked List
- Stack
- Queue
- Hash tables
- Searching Algorithm
- Sorting Algorithm

3 AWS

- Introduction to Cloud Computing
- IAAS/PAAS/SAAS
- Introduction to AWS
- Setting Up Account
- Identity and Access Management
- Region and Availability Zone
- AWS S3
- Elastic Compute Cloud (EC2)
- AWS RDS

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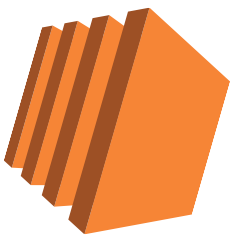
4 PROJECTS

- Static and Dynamic website hosting on AWS
- Blog website
- The Vegan Studio
- Breast Cancer Website
- Reminder Application with Notification
- Quiz Game
- Chat Bot
- Based on Raspberrypi
- Build your own weather Station
- Build a Python Web Server with Flask
- Control LED with your Voice
- Documenting your code
- Build a line following Robot
- Control speed of a fan from laptop
- Raspberry Pi Based Jarvis themed Speaking Alarm Clock
- Rock Paper Scissor
- Based on Alexa
- Control AWS Infrastructure from Alexa
- Desktop Assistant
- Based on Data Strucuture
- Make a PHONEBOOK.
- Make a Liberary



5 ASSIGNMENTS

- Bangles
  - In Bagels, a deductive logic game, you must guess a secret three-digit number based on clues. The game offers one of the following hints in response to your guess: “Pico” when your guess has a correct digit in the wrong place, “Fermi” when your guess has a correct digit in the correct place, and “Bagels” if your guess has no correct digits. You have 10 tries to guess the secret number.

- BITMAP MESSAGE
  - This program uses a multiline string as a *bitmap*, a 2D image with only two possible colors for each pixel, to determine how it should display a message from the user. In this bitmap, space characters represent an empty space, and all other characters are replaced by characters in the user’s message. The provided bitmap resembles a world map, but you can change this to any image you’d like. The binary simplicity of the space-or-message-characters system makes it good for beginners. Try experimenting with different messages to see what the results look like!

- BOUNCING DVD LOGO
  - If you are of a certain age, you’ll remember those ancient technological devices called DVD players. When not playing DVDs, they would display a diagonally traveling DVD logo that bounced off the edges of the screen. This program simulates this colorful DVD logo by making it change direction each time it hits an edge. We’ll also keep track of how many times a logo hits a corner of the screen. This creates an interesting visual animation to look at, especially for the magical moment when a logo lines up perfectly with a corner.

- CAESAR CIPHER
  - The Caesar cipher is an ancient encryption algorithm used by Julius Caesar. It encrypts letters by shifting them over by a certain number of places in the alphabet. We call the length of shift the key. For example, if the key is 3, then A becomes D, B becomes E, C becomes F, and so on. To decrypt the message, you must shift the encrypted letters in the opposite direction. This program lets the user encrypt and decrypt messages according to this algorithm.

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CONTINUE...

- CAESAR HACKER
  - This program can hack messages encrypted with the Caesar cipher from Project 6, even if you don't know the key. There are only 26 possible keys for the Caesar cipher, so a computer can easily try all possible decryptions and display the results to the user. In cryptography, we call this technique a *brute-force attack*. If you'd like to learn more about ciphers and code breaking

- CALENDAR MAKER
  - This program generates printable text files of monthly calendars for the month and year you enter. Dates and calendars are a tricky topic in programming because there are so many different rules for determining the number of days in a month, which years are leap years, and which day of the week a particular date falls on. Fortunately, Python's datetime module handles these details for you. This program focuses on generating the multiline string for the monthly calendar page.

- COLLATZ SEQUENCE
  - The Collatz sequence, also called the 3n + 1 problem, is the simplest impossible math problem. (But don't worry, the program itself is easy enough for beginners.) From a starting number, n, follow three rules to get the next number in the sequence:

    If n is even, the next number n is n / 2.
    If n is odd, the next number n is n * 3 + 1.
    If n is 1, stop. Otherwise, repeat.