FULL-STACK DEVELOPER BOOTCAMP 2020

PRESENTED BY FARHANA AKTER

IN CONSULTADD, INC. BOOTCAMP, I LEARNED HOW TO THINK, BUILD, AND PROBLEM-SOLVE AS A DEVELOPER. EACH MODULE OF OUR IMMERSIVE, INDUSTRY-DRIVEN CURRICULUM IS DESIGNED TO EQUIP ME WITH A STRONG FOUNDATION OF SKILLS TO HELP ME SUCCEED AND GROW AS A FULL-STACK DEVELOPER.

FIRST WEEK - TOPICS
MAY 18 - 22, 2020
TRAINER: RIYAZ UL HAQUE

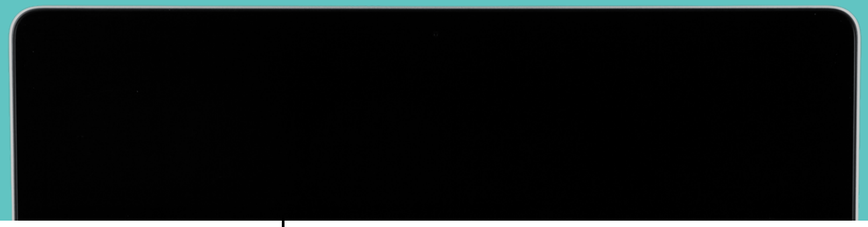
DAY	TOPIC	THEORETICAL HOUR (1-hour)	PRACTICAL HOUR (1-hour)	IMPLEMENTATION HOUR (ASSIGNMENT)	KEY TAKEAWAYS
DAY-1	**Introduction to Computer**	- History - What is an OS? - What is Hardware & Software? - What is RAM & ROM? - Types of Software? - CPU - Types of Memory - File Management	- Application Software - System Software - Activity Monitor - Operating System Interaction - File Management operation	Relatable concepts with the developed application **TASK 01**: Prepare a doc on the following topics: - What is Cache Memory? https://www.webopedia.com/TERM/C/cache.html - What is Disk Management? - Cache vs RAM?	What is Computer and its Components?

DAY-1	**Command Line Interface**	- What is CLI? - Different Types of CLI? - What can we do with CLI? - Basic Linux Commands - Command Line Editor Tools	- File commands - Search commands - Network commands - System commands - Process Management commands - File Permission commands - Vi and Nano Editor	Implementation of all different types of commands on their respective OS. **https://linuxize.com/post/basic-linux-commands/** **TASK 1:** Typical command line operation on **File** like Create, Copy, Delete, Move, Rename, etc. **TASK 2:** File Permission commands - rwx (Work on all 400,600,777 etc) **TASK 3:** Work with a command-line editor(Vi and Nano). **TASK 4:** Environment Variables **https://linuxize.com/post/how-to-set-and-list-environment-variables-in-linux/**	How to efficiently work with the command-line interface.

DAY-2	**How does the Internet work?**	- What is the Internet? - What is a Web? - What is WWW? - What is a LAN? - What is a Host & Server? - What is the protocol? - Different Types of Protocol? - What is an IP? - What is an URL? - What is a Domain?	- Working with Domain Name System(DNS) - How to find the HOST and PORT? - HTTP vs https - Introduction to SSH(Detailed will be in AWS Section to make more sense)	Implementation: **TASK 1:** Find a port number of all TCP & UDP connections. **TASK 2:** Find the port number of a specific IP **TASK 3:** Calculate the total number of IP available for some given CIDR range **TASK 4:** Application Server of one dummy project.

DAY-3	**Introduction to Version Control System**	- What is a Version Control System? - Different Types t of Version Control System - Git vs GitHub - What is README.md	- Install Git on Mac, Linux and on Windows - Install GitBash - Create First Repository - Initialize the local directory as a Git Repository. - Clone Repository on Local. - Commonly used Git Commands	Implementation: **TASK 1:** Create Repo on Git with README file **TASK 2:** Push the code of previous activity to the same Repo **TASK 3:** Push it from the dev branch to master **TASK 4:** Make changes into the code file on the server and pull the latest changes on local.	How does the Version Control System Works? Practically where and how we can use it.

DAY-3	**Introduction Web Development using HTML and CSS**	- What is Web Development - What is HTML? - HTML Tags - Essentials of HTML? • Attributes + Hyperlinking • Headings + Lists • Inline vs. Block Elements + Divs • id + class Attributes • The img Element - HTML Tables - HTML Forms - What is CSS? - Introduction to the Cascade - Basic CSS Selectors Color - Font Styling + Web Fonts - Text Alignment + Sizing	- Create your first Web Page using HTML - Create a Sample Form page with fields of Name, Contact and Address. - Create a Button of type: • Drop Down • Redirect to link • Click Button • Submit Button - Image on Button Click - Add CSS to the same form page.	- Create your first Login page - Add following fields: • First Name • Last Name • Email Address • Password • Submit Button - Add CSS Background - Add logo of consultadd on top of login page. - Make sure to put the logo on the top left corner. **TASK 1:** Upload the code file on GitHub with a new repository.	What is Web Development - HTML & CSS basic Implementation.



DAY-4	**Little Advance of HTMl and CSS & Introduction to Bootstrap**	- What are HTML methods? • GET • POST • PUT • DELETE - What are HTML methods? - CSS Advanced Concepts - Introduction to Bootstrap	- Implementation of HTML methods on sample form page - Typical Website Layout using CSS - CSS Templates - Introduction to Bootstrap classes - BS Jumbotron - BS Dropdowns - BS Collapse	**TASK 1:** Upgrade the same login page with the following addition: • HTML methods • Add CSS more into it • Add BS Classes • Use BS Collapse to show information about login page at the bottom • Add CSS Templates **TASK 2:** Upload the code file on GitHub with a new repository.	Little Advance into HTML, CSS and Intro to BS.
			WEEK 1 MENTOR SESSION		

			Custom Data.		
DAY-4	**Introduction to Linux Basics**	- Little more of SSH - Super User vs Root User - Revision of Basic Linux bases commands - Basic commands using EC2 Ubuntu Machine - Search Commands - Little Advance	- How to establish a connection to a remote machine using SSH. - How to give permission to super users. - Working with sudo. - Ubuntu essentials commands. - Grep, pipe, head and Tail. - Quick revision of cp, mv, rm, pwd, who, cat, mkdir, touch etc.	- Create and EC2 Machine for Ubuntu AMI. - Connect with the machine using SSH. - Create another user on top of the same. - Differentiate between Root User vs SuperUser vs Custom User - Switch between users. - Practice all commands.	Walk through of Linux Commands.
DAY-5	**Concepts of Backend/Front-end/Server)**	- Dynamic vs Static Web Application. - Which and How code runs on the server? - How code runs on the Client side? - Server (Web, Application and Database)			

DAY-5	**Local & Development Environment**	- Concepts of Virtual Environment - Local and Dev Environment - IDEs - Introduction to Pip and Virtualenv	- How to work with Virtual Environment. - Learn to set up a Local Dev Environment. - How to switch between Multiple environments. - Packages and Libraries terminology basics. - Installation of basis prerequisites using requirements.txt or package.json	Implementation: **TASK 1:** Setup the Virtual Environment using virtualenv. **TASK 2:** Try using Anaconda also(Just for Command practice) **TASK 3:** Setup the Local dev with the provided requirements.txt and package.json. **TASK 4:** In the newly created environment install nginx. **TASK 5:** Pull the code(from previous task) from Git and run on Local Environment.	Local & Dev Environment Setup
			WEEK 2 MENTOR SESSION		
DAY-5	**Introduction to Databases**	- What is Database? - Relational vs Non-Relational Database - ACID property - Common Terminologies: • Records • Schema • Attributes - Database Design			

THIRD WEEK - TOPICS JUNE 2, 2020

Trainer: Riyaz Ul Haque/Yashika Khatri

DAY	TOPIC	THEORETICAL HOUR (1-hour)	PRACTICAL HOUR (1-hour)	IMPLEMENTATION HOUR (ASSIGNMENT)	KEY TAKEAWAYS
DAY-1	**Introduction to API**	- What is an API? - How API Works? - Typical Examples of Real Time API? - APi end to end Communication? - API connection from Frontend to Backend. - API Endpoints - API Parameters - Basic API Testing on POSTMAN(get & post)		-	

DAY-1	**JSON**	- Data formats, - Data storage basics, - CSV, ,XML - JSON - Parsing JSON	- Different types of Data format. - Different Types of Data Storage for an application. - CSV vs XML vs JSON - In-depth understanding of writing JSON. - How to parse JSON. - Common operation on JSON.	Implementation: **TASK 1:** Hit an API on POSTMAN and so analysis on JSON Data returned. **TASK 2:** **TASK 3:**	Playing around the JSON
DAY-2	**Quick Revision of JavaScript**	- Basic Walk through - DOM Manipulation - Javascript with HTML - Parsing JSON with JavaScript	- Basic array revision - Implementation of DOM methods & elements. - DOM HTML - JSON Parsing with parse() - Stringify() vs parse()	Implementation: **TASK 1:** Add the Javascript validation to the existing HTML web page build so far. **TASK 2:** Implement DOM on top of it.	JavaScript Revision

DAY-3	**Python Core Concepts**	- What is Python Programming Language? - Where can you use Python? - Python2 vs Python3 - Basics Concepts: • Numbers & Variables • Operators • Decision Making • Looping • Data Structures	- Installation of Python - Implementation of: • Numbers • Variables • Operators • Decision Making • Loop ◦ For ◦ While ◦ Break ◦ Continue • Data Structure ◦ List ◦ Tuple ◦ Dict	Implementation: **TASK 1:** Programs on Python Fundamentals: Five to Six coding based questions on all concepts covered.	Core Concepts of Python Programming language.
DAY-4	**Introduction to Backend Concepts**	- Introduction to writing backend code. - Django Framework Setup - Django Project and Application workflow - Django Concepts: • View • URL Mapping • HttpResponse vs Render • Template • Models • Admin - MVC vs MTV - REST API with Django	- How to setup Django Project and Application - Running Server on different port - Passing HTML file to existing project using Templating - How to configure views and URLs? - How to write Database tables using dbsqlite3 and MySQL setup in Django. - How to migrate	Implementation: **TASK 1:** Create an application that would have multiple views to return from multiple template files. **TASK 2:** Configure your project to keep the database table into MYSQL. **TASK 3:** Integrate your HTML & CSS code with Django backend and run it through django server. **TASK 4:** Write a simple API to add & remove a user from your application database.	Django Framework.

DAY-3	**REST API with Databases**	- What is Databases Endpoint - CRUD Operation on Database			
DAY-4	**HTML with API**				
DAY-5	**Advanced Programming Concepts**	- Advance Looping - Functions and Recursion - Introduction to Complex Data Structure. - Basic Algorithm approach to write program	- Implementation of nested loops. - Best practice to iterate over sequences of data. - Data Structures like Stack, Queue and LinkedList. - Binary Search - How to sort?	Implementation: **TASK 1:** Advance programming based question.	
			MINOR PROJECT		