**Intern Guide (12 weeks)**

***Note: Make interns to do research and provide resources***

**Basic Concepts**

***Week 01***

1. Data types
2. Git/Github/Gitlab - version control
3. Dynamic typing and static typing
4. Test types, type cast
5. Function, parameters, return type
6. Taking user input (Terminal)
7. Operators in python
8. Variable Scoping
9. Conditional
10. If
11. Elif
12. else
13. Different types of comments in python
14. modules and packages (differentiate module and package)
    1. Study about built in packages and modules
    2. Create custom module
    3. Install external modules
    4. Importing modules and packages
15. Exception handling

***Week 02***

1. Task Description based on learnt in week 01

The user will see all the pizza available in the shop. The user will select the pizza that he/she wants to buy and if he wants to add toppings then the user can update on it and toppings also cost some price, mention that price in the terminal to the user.

The user will select the toppings and can buy pizza with toppings, the user will get subtotal of the pizza and toppings. Users can buy pizza until and unless he/she selects the “NO” option. After he/she selects “no” then he/she will be able to see the total of all the subtotal.

1. Files Handling
   1. Open file
   2. r
   3. w
   4. a
   5. a+
   6. r+
   7. w+
   8. With Open

**Week 03**

***Class and Objects***

1. OOP Concepts
2. Create a class in python
3. \_\_init\_\_ function in python
4. Create a object of the class
5. Learn about method and variable in class
   1. Class method
   2. Instance method
   3. Static method
   4. Class variable
   5. Instance variable
6. Learn about Inheritance in python/overall (OOPs)
7. Learn about encapsulation “”
   1. Public
   2. Private = \_\_
   3. Protected = \_
   4. Property decorator
8. Learn about abstraction “”
9. Learn about Polymorphism “”
   1. Method Overloading
   2. Method Overriding

**Week 04**

***Question 01:***

Duration: 3 days.

Description:

Create a parent class CSV\_Saver.

Create a child class inheriting the parent class (CSV\_Saver).

Create a CSV file with headings as class attributes.

Create a CRUD Operation to perform in the CSV file.

The CRUD function should be available in the parent class(CSV\_Saver) and the child class

must implement it.

Use class method and static method for the CRUD operation.

**Notes: The Parent class should be generic**

**Question 02**

CRUD operation using python and SQL

**Week 05**

***Other concepts***

1. Methods
   1. Args and kwargs
   2. Lambda
   3. Closure
   4. Recursive function
2. List
   1. List slicing
   2. List comprehensions
3. String in detail
4. Dictionary advanced
5. Tuple advanced
6. Decorators

**Week 06/07/Week 08/Week 09/Week 10**

**Django Course Details(Project side by side)**

1. Setup project and run as default (Basic flow)
2. Virtual Environment (Basic flow)
3. Database setup(Postgres)
4. Command in python (Makemigrations, migrate) (Basic flow)
5. Middleware, secret key, debug, .env, Static and media files, app, admin page) (Basic flow)
6. Architecture MVT concept includes flow between model, view and templates
7. Research about Model, View, Templates, URL Patterns, Uploading image and files
8. Relationship between tables
9. Django and basic views,
10. Templating languages(Jinja)
11. Django Forms
    1. Model form
    2. Form
12. Start doing basic CRUD

**Project(Learning side by side)**

1. **Basic command in Linux/Unix**
2. **Prepare SRS for the project**
3. **More things to cover**
4. Setup Cookiecutter, pre-commit
5. More about Views

Class based

* + 1. VIEW
    2. Generic view

Function based

1. Authentication in django (Login, register, reset password)
2. AJAX and JQUERY
3. Permissions in Django
4. Signals in Django
5. Celery and celery beat

**Week 11/Week 12**

**REST API**

1. Project Setup using cookiecutter
2. Swagger setup
3. Learn about postman
4. Serializer, models, views (flow of the request and response)
5. Serialization and deserialization
6. Views
   1. APIView
   2. Generic View
7. Basic CRUD
8. Authentication (Basic Authentication and JWT authentication)
9. Login, register, reset password
10. Different level of Permissions(Default and Custom)