

Python Project Documentation

1. Software Requirements Specifications

This section outlines the prerequisites for the software project. The developed software should possess the capability to execute the subsequent functional requisites, referred to as 'FR':

❖ FR 1: Customer Management

- FR 1.1: The user is able to add a new customer to the list.
- FR 1.2: The user is able to edit an existing customer in the list.
- FR 1.3: The user is able to remove an existing customer from the list.

❖ FR 2: Customer Listing and Search

- FR 2.1: The user is able to view all customers in the list.
 - FR 2.1.1: If there are no customers in the list, there should be a message stating 'No customers in list'.
- FR 2.2: The user is able to search for a customer
 - FR 2.2.1: The user is able to search for a customer by their name.
 - FR 2.2.2: The user is able to search for a customer by their email.
 - FR 2.2.3: The user is able to search for a customer by their mobile number.
 - FR 2.2.4: If the customer searched is not found, there should be a message stating 'No customers in list'.

❖ FR 3: Saving and Loading of Customers

- FR 3.1: The user is able to save the customer data to a file.
- FR 3.2: The user is able to load all customer data from a file.

2. Software Design

2.1. UI/UX design

This section outlines the initial UI/UX design of the suggested software application. It's important to emphasize that these are merely preliminary representations and could/will undergo modifications throughout the implementation process.

2.1.1. Main Menu Mock-up:

Welcome to GDS Data Manager

Main Menu

1. Add Customer
 2. Edit Customer
 3. Remove Customer
 4. List Customers
 5. Search Customer
 6. Save Customers
 7. Load Customers
 8. Exit
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2.1.2. Add New Customer Mock-up:

Add a New Customer

Enter name: Test Name A

Enter email: test@email.com

Enter number: 12345678

Added Successfully

2.1.3. List of Customers Mock-up:

List of Customers

- 1 . {'name': 'Test Name A', 'email': 'testnamea@email.com', 'mobile': '12345678'}
 - 2 . {'name': 'Test Name B', 'email': 'testnameb@email.com', 'mobile': '98765432'}
 - 3 . {'name': 'Test Name C', 'email': 'testnamec@email.com', 'mobile': '91827364'}
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2.2. Security Considerations

This section outlines potential security measures that the program might consider implementing, either immediately or as future enhancements.

2.2.1. User Authentication

Before displaying the main menu, the program can ask the user to input their User ID and Password to authenticate their login.

2.2.2. User Type

The User ID can also determine the user type

- the 'admin' user type can access all the options in the program,
- whereas a 'standard' user type can only view but can't edit the data.

3. Testing - Unit Tests

According to the specified requirements, the following test cases are suggested:

3.1. Unit Test 1: Searching Customers

Outcome 1

Function Tested: search_customer

Name of Test: searching by name of existing customer

Input: Enter '5' on 'Main Menu', then enter 'Jon Snow'

Expected Output: When the tester searches, the program will show the details of 'Jon Snow'

Outcome 2

Function Tested: search_customer

Name of Test: searching by name but the customer doesn't exist in list

Input: Enter '5' on 'Main Menu', then enter 'Joker Snows'

Expected Output: When the tester searches, the program will show 'No matching data'

3.2. Unit Test 2: List of Customers

Outcome 1

Function Tested: list_customer

Name of Test: Displaying the list of customers

Input: Enter '4' on the 'Main Menu'

Expected Output: When the tester enters the "List all customers" option on the "Main Menu", the program will show a list of all customers.

Outcome 2

Function Tested: list_customer

Name of Test: Displaying the list when it is empty

Input: Enter '4' on the 'Main Menu'

Expected Output: When the tester enters the "List all customers" option on the "Main Menu", the program will show "No customers in list"

4. Future Enhancements

In this section, some possible future enhancements are suggested, referred to as 'FE'.

1. FE1: Currently when editing a customer in the list, you have to edit all parameters, i.e., name, email and mobile, of a customer every time all at once.

In a future version, you can select to edit a customer's individual parameter, i.e., only the name or only the email, at once.

2. FE2: Currently when removing a customer from the list, you enter the index number of the list item.

In a future version, you can remove a customer by inputting one of the parameters, i.e., name, as well.