Technical Design Document

## Basic Components/Modules:

1. Database – Sqlite3
2. API Layer – Flask API (Python)
3. Communication Protocol – HTTP
4. API logic and Code base – Python
5. ORM tool – SQLalchemy (Python)

Development process:

1. Following 2-week sprints in SCRUM team to complete the project with rough estimate of 2 sprints in complete development and testing
2. Development Items:
   1. Design POC and Design discuss
   2. Technology stack finalization
   3. Estimate Request per seconds to get acceptable API response time.
   4. Divide the module in 4 sections for parallel and independent development
      1. ORM Layer
      2. Flask API layer
      3. Database schema design
      4. WSGI server setup
3. Development to start with skeleton defined for folder structure:
   1. Project Root Dir
      1. Database: contains database connect and db files
      2. Data model: contain ORM data model
      3. Src: source code
      4. Config: environment wise configuration [dev, qa, prod]
   2. Other driver files and requirement documents under root dir.
4. Dev Testing involves sanity check of API endpoints to work without errors using Postman
5. QA Testing this involves Regression testing, performance testing using Locust and data integrity testing
6. Final Prod deployment to be followed in README.md

## API Endpoints:

|  |  |  |  |
| --- | --- | --- | --- |
| Endpoint | HTTP Method | CRUD Method | Result |
| /api/phonebook/ | GET | READ | Get all phone book entries |
| /api/phonebook/add | POST | CREATE | Create entry in phone book |
| /api/ phonebook/search/:surname | GET | READ | Get phone book by sur name |
| /api/phonebook/update/:surname,:firstname | PUT | UPDATE | Update entry in phone book |
| /api/phonebook/remove/:surname,:firstname | DELETE | DELETE | Delete entry in phone book |

## Design Diagram:

## Database Schema:

DB Name: phonebook.db

CREATE TABLE "phonebook" (

"\_id" INTEGER NOT NULL,

"sur\_name" VARCHAR(32),

"first\_name" VARCHAR(32),

"phone\_number" INTEGER,

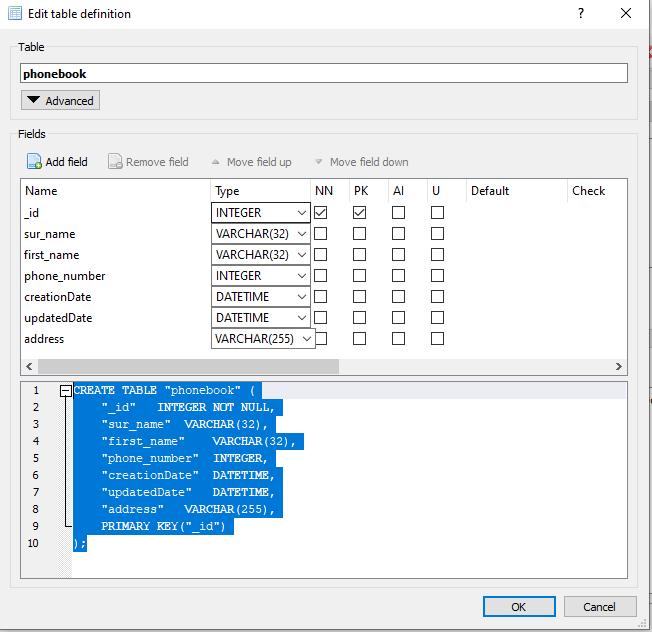
"creationDate" DATETIME,

"updatedDate" DATETIME,

"address" VARCHAR(255),

PRIMARY KEY("\_id")

);



## API Examples:

|  |  |  |
| --- | --- | --- |
| Endpoint | HTTP Method | Sample Request |
| /api/phonebook/ | GET | <http://127.0.0.1:5000/api/phonebook> |
| /api/phonebook/add | POST | http://127.0.0.1:5000/api/phonebook/add?sur\_name="Suman"&first\_name="H"&phone\_number=4444444444 |
| /api/ phonebook/search/:surname | GET | <http://127.0.0.1:5000/api/phonebook/search/Patel> |
| /api/phonebook/update/:surname,:firstname | PUT | http://127.0.0.1:5000/api/phonebook/update/abc/xyz/sur\_name=Suman&first\_name=H&phone\_number=4444444444 |
| /api/phonebook/remove/:surname,:firstname | DELETE | http://127.0.0.1:5000/api/phonebook/remove/abc/xyz/ |