Nutrition Assistant

Documentation on Project illustrating the Nutrition Assistant Application

● INTRODUCTION

1.1 OVERVIEW

Nutrition assistant to support our nutritionist in providing patients with healthy meals. In this role, your duties will include obtaining dietary information from patients, determining nutritional needs, and observing patients for signs of diet-related complications.

To ensure success, nutrition assistants should possess experience in a similar role and the ability to obtain accurate dietary information. A top-notch nutrition assistant will be someone who can proactively help nutritionists to improve patients' well-being through excellent dietary support.

1.2 PURPOSE

- Providing dieticians with the facility's meal and menu planning.
- Obtaining dietary information and assessing the nutritional habits of patients.
- Recording individual risk factors or dietary restrictions that might impact meal planning.
- Coordinating meal plans with nutritionists and healthcare professionals.
- Performing ongoing nutrition assessments, including the measurement of caloric intake and activity levels.
- Facilitating immediate interventions for signs of malnutrition, allergic reactions, or refusal to eat.
- Assisting in meal distribution, ensuring correctly delivered, and timely served meals.
- Maintaining proper sterilization protocols in the clearing away and cleaning of plates and utensils.
- Safely discarding leftover portions to prevent the spread of disease.

● SYSTEM ANALYSIS

2.1 PRODUCT PERSPECTIVE

Nutrition assistants work with dieticians and nutritionists, typically in healthcare facilities, to support patient health and well-being through meal planning and proper nutrition. In this role, the nutrition assistant also tends to work directly with patients to determine their dietary and nutritional needs, along with any risk factors or dietary restrictions the patient may have. Nutrition assistants also provide support for menu development activities and observe patients for signs of malnutrition, allergic reactions, or refusal to eat.

2.2 PRODUCT FUNCTIONS

The major function of this is nutrition assistants need at least an associate's degree in a related field, such as nutrition or health and wellness. Students who are interested in becoming nutrition assistants can also improve their employment prospects through an internship, which provides hands-on training in the duties associated with this role and can lead directly to employment. Depending on the state and the nutrition assistant's level of responsibility, certification or licensure may be required. There are many opportunities for on-the-job training in this role as nutrition assistants gain expertise and familiarize themselves with the procedures of their facility.

2.3 USER CHARACTERISTICS

One of the primary duties of a nutrition assistant is working directly with patients to gather information about their general health and nutritional habits. This can include working with nurses and physicians to obtain vital data such as blood pressure and activity levels, which can inform the patient's caloric needs and identify potential issues that may impact healthcare and outcomes.

2.4 OPERATING ENVIRONMENT

Operating environment for this web application is as listed below.

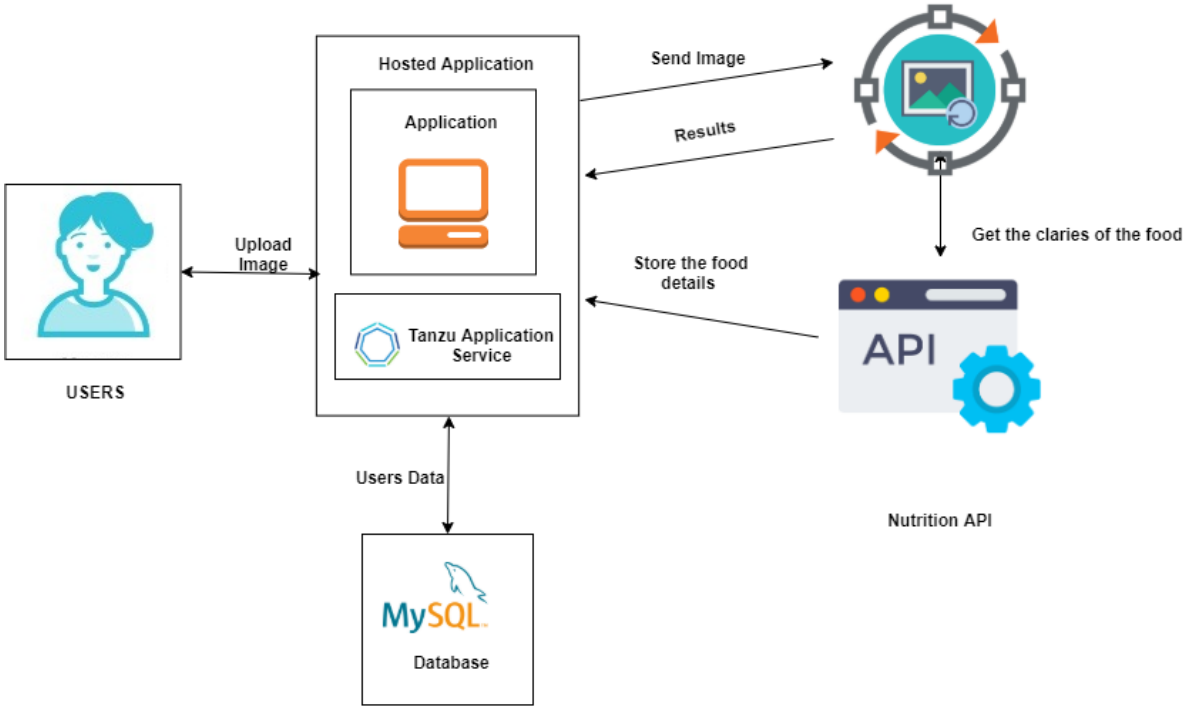
- This web application is containerized with docker, all the requirements are packed in this container. Docker is needed to run the image of this container.

- Remotemysql is used as the database for this web application which is hosted remotely.
- Platform : Python and jinja2.

2.5 DESIGN AND IMPLEMENTATION CONSTRAINTS

- User registers for an account and login.
- It saves the user's data into the Database.
- User uploads the image to this web application which is hosted on VMware Tanzu Application Service

2.6 PROPOSED ARCHITECTURE



● SOFTWARE AND HARDWARE REQUIREMENTS

3.1 SOFTWARE REQUIREMENTS :

- Operating system : Windows / linux with Docker installed.
- Database : RemoteMySQL database
- Hosting: Tanzu Application Service
- A browser through which the web application could be accessed.
- Interactive Support : Python Flask , jinja2 and JavaScript are used for interactive support.
- Cloud Foundry

3.2 HARDWARE REQUIREMENT :

- Operating system : Windows/linux
- Processor : 1.4 GHz x64 processor
- 4 GB RAM
- 250 GB SSD

● FUNCTIONAL REQUIREMENTS

4.1 FOOD ITEM RECOGNITION

- Users are able to upload pictures of food items without any difficulties and get results faster.
- The web application should efficiently recognize the food item using the Visual recognition api.

● NON-FUNCTIONAL REQUIREMENTS

5.1 PERFORMANCE REQUIREMENTS

- RESPONSE TIME:
    - This web application loads within 1-2 seconds, when first loaded and loads within a second when refreshed.

    - Displaying the nutrient list takes 3-4 seconds when a photo is successfully uploaded as the web app uses two APIs and then sorts the list to display along with a pie chart.
    - Calculation of BMI value is done within a fraction of seconds.

- OPTIMIZATION :
    - To decrease the loading time of the web application all the images were compressed.
    - Optimization of JavaScripts was done very keenly.

5.2 SECURITY REQUIREMENTS

- Authentication :

  The user can only access the features of this web application after successful authentication through logging in.

- Encryption :

The passwords are hashed before being saved into the database with MD5 hashing methods.

● CONCLUSION

One of the primary duties of a nutrition assistant is working directly with patients to gather information about their general health and nutritional habits. This can include working with nurses and physicians to obtain vital data such as blood pressure and activity levels, which can inform the patient's caloric needs and identify potential issues that may impact healthcare and outcomes

● APPENDIX

Github link:
Source code
https://github.com/smartinternz02/SPS-11363-Nutrition-Assistant-Application

video link:
https://drive.google.com/file/d/1N-dUc5hr25w5xU53U98PJyg8yQ09_wtb/view?usp=sharing