

Cancer Outcome and Recurrence Prediction Tool

Students: Alexis Diaz, Joshua Andres Fernandez, Sebastian Galloway, Michelle Pacheco, Raul Pena

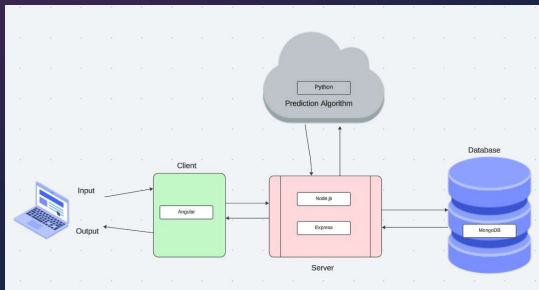
Mentor: Chris Poellabauer, Ph.D.

Instructor/Faculty: Dr. Masoud Sadjadi, Florida International University

PROBLEM

Our group has been tasked with creating the front-end application for a machine learning algorithm that recommends cancer treatment options based on previous patient data. The application seeks to make inputting, interpreting, and manipulating data easier for the physicians that interact with the patients.

SYSTEM DESIGN



DATA FLOW AND COMPONENTS

1. User Registration:

- User submits registration details (name, email, password) via the frontend (Angular).
- The backend (Node.js with Express) processes the registration request, encrypts the password, and stores the user details in the MongoDB database.

2. User Login:

- User submits login credentials (email, password) via the frontend (Angular).
- The backend (Node.js with Express) authenticates the user by verifying the credentials against the stored data in MongoDB.
- Upon successful authentication, a session token is generated and sent to the user.

3.Data Entry:

- Logged-in user inputs patient data through the frontend (Angular for creating user interfaces)
- The backend processes the patient data and stores it in the MongoDB database.

4.Data Processing:

- The backend (Node.js with Express) retrieves patient data and prepares it for prediction.
- The processed data is sent to the machine learning model for prediction (using Python with scikit-learn models).

5. Prediction:

- The machine learning model processes the data and generates prediction results.

6.Output:

- Prediction results are displayed on the frontend, showing clear numbers, graphs, and charts to the user.

IMPLEMENTATION

Patient List

ID	Action
TCGA-2E-A9G8	View Treatment
TCGA-4E-A9ZE	View Treatment
TCGA-5B-A90C	View Treatment
TCGA-59-A9Q8	View Treatment
TCGA-A5-A0G1	View Treatment
TCGA-A5-A0Q2	View Treatment
TCGA-A5-A0G3	View Treatment
TCGA-A5-A0G5	View Treatment
TCGA-A5-A0G9	View Treatment
TCGA-A5-A0GA	View Treatment
TCGA-A5-A0GB	View Treatment

[Add a New Patient](#)[Return to Home](#)[Prediction Tool](#)

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TECHNOLOGIES USED



Summary

Our Cancer Outcome and Recurrence Prediction Tool prioritizes secure access for physicians through a reliable registration and login module. Using the MEAN stack, we securely store user data, including encrypted passwords, in MongoDB. The system ensures all registration inputs are validated and passwords are encrypted before securely managing user sessions. Once logged in, physicians can input patient data via a user-friendly Angular interface, with validations to ensure the data is accurate before it's stored. Our backend processes this patient data, getting it ready for prediction by our machine learning model. The prediction tool is designed to be flexible, offering various input fields, auto-filling from the database, and integrating smoothly with different ML models. Predictions are displayed clearly with numbers, graphs, and charts, including a history of past predictions for each patient. This secure, easy-to-use module makes the web app effective and reliable, helping physicians make better-informed decisions in cancer treatment planning.

REFERENCES