Healthcare Management using Amazon Web Services

Maria-Luiza Dulgheru; Iuliana Marin

Introduction

- **Healthcare and life sciences**
- **Reinvention of patient care methods and solutions**

Objectives

Architecture Diagram
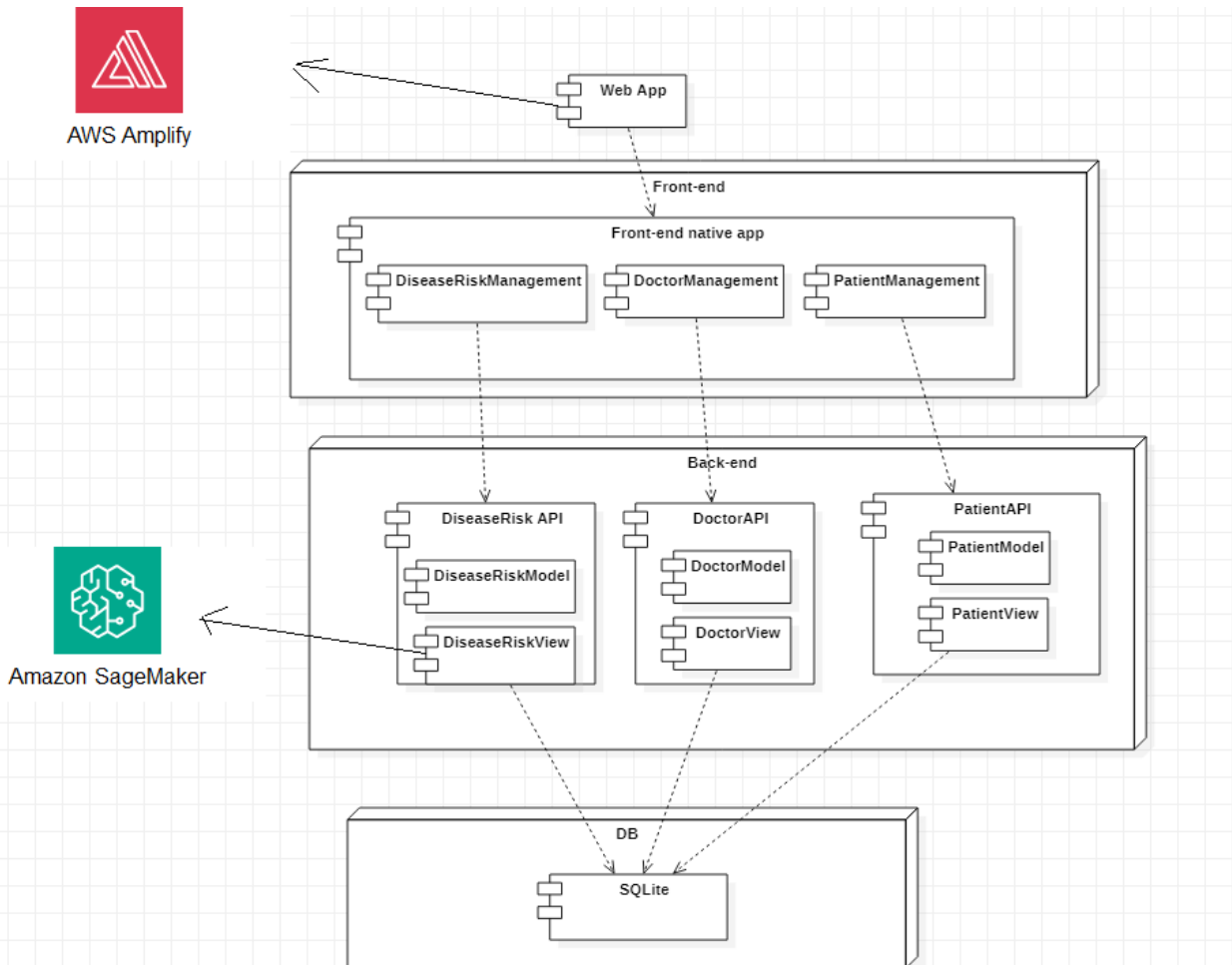
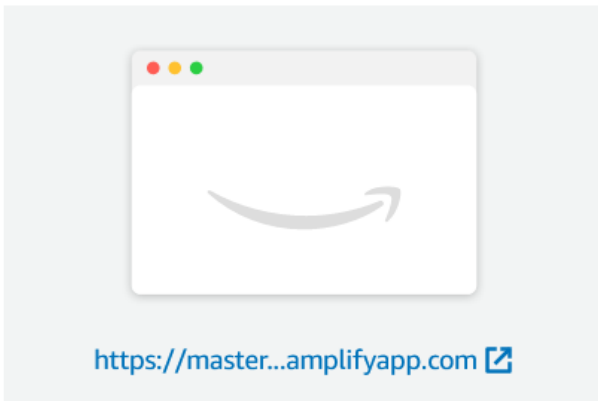# Hosting with AWS Amplify

Use Cases

Patient

- Register

- Sign in/Log out

- Book Appointment

- View/Edit profile

- View Appointments

Doctor

- Register

- Sign in/Log out

- View Appointment(s)

- View/Edit profile/Patients

- Get Diagnose risk

Register

Sign up

First name
Joe

Last name
Smith

Email
joe.smith@yahoo.com

Phone Number
+40770592302

Department
Neurology

Birthdate
06 / 23 / 1980

Create password
●●●●●●●●●●●●●●●

Repeat password
●●●●●●●●●●●●●●●

[Register]

Have an account? Log In

Registration successful! ✕

Sign up

First name
Enter First Name

Last name
Enter Last Name

Email
Enter Email Address

Phone Number
Enter Phone Number

Department

Birthdate
mm / dd / yyyy

Create password
Enter Password

Repeat password
Confirm Password
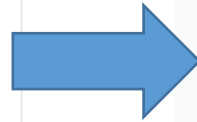
[Register]

Have an account? Log In

Sign In

Sign in

anna.smith@yahoo.com

●●●●●●●●●●●●●●●●●

Forgot password?

Login

Don't have account? **Sign up**

HealthCloud
Empowering healthcare

Home   Services   About Us   Contact Us

| My Profile |
| Appointments |
| My Patients |
| Lab Reports |
| Radiography |
| To Do's |
| Symptom Tracker |
| Health Goals |
| Health Education |
| Statistics |

Hello, Anna

Enjoy your day and don't forget to take care of your health!

My Profile

Here is your user profile information:

Name: Anna Smith

Username: anna.smith

Email: anna.smith@yahoo.com

Phone: +40770592031

Birthdate: 1995-05-17

Department: Allergy / Immunology

Edit Profile

Log Out

My Profile
My Appointments
My Diagnoses
Lab Reports
Radiography
Symptom Tracker
Health Goals
Health Education
Statistics
Settings

Log out

Hello, John

Enjoy your day and don't forget to take care of your health!

My Profile

Here is your user profile information:

Name: John Smith

Username: john.smith

Email: john.smith@gmail.com

Phone: +40773682391

Edit Profile

Sign in

You are logged out. ✕

Email Address

Password

Forgot password?

Login

Book Appointment

Welcome to our clinic!

You can schedule an appointment with us either by creating an account.

Or, if you already have an account, please log in to schedule your appointment.

We look forward to assisting you with your healthcare needs.

First Name

John

Last Name

Smith

Username

john.smith

Department

Allergy / Immunology

Day

07 / 06 / 2023

Time

3 PM

Book Appointment

You can schedule an appointment with us either by creating an account.

Or, if you already have an account, please log in to schedule your appointment.

We look forward to assisting you with your healthcare needs.

First Name

Enter Your First Name

Last Name

Enter Your Last Name

Username

Enter Your Username

Department

Allergy / Immunology

Day

mm / dd / yyyy

Time

3 PM

Book Appointment

Thank you for completing this form! We will come back with a reply as soon as possible.

View/Edit profile

Hello, John

Enjoy your day and don't forget to take care of your health!

My Profile

Here is your user profile information:

Name: John Smith

Username: john.smith

Email: john.smith@gmail.com
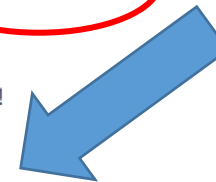
Phone: +40773682391

Edit Profile

My Profile

First Name:

Last Name:

Username:

Contact:

Save Changes

Hello, John

Enjoy your day and don't forget to take care of your health!

My Profile

Here is your user profile information:

Name: John Smithh

Username: john.smithh

Email: john.smith@gmail.com

Phone: +40770597405

Edit Profile

View Appointments

View Appointments

Hello, Anna. Here are all your appointments:

Day	Time	Patient	Contact	Actions
2023-06-14	4 PM	Doe	+40744677080	View Reports
2023-05-16	3:30 PM	d	d	View Reports
2023-06-13	3 PM	poco	65432	View Reports

View Patients

My Patients

First Name	Last Name	Username	Email	Phone Number	Actions
Jane	Doe	janee.doe1	jane.doe2@yahoo.com	+40744677080	Get disease risk
d	d	docc	docc@yahoo.scom	d	Get disease risk
poco	poco	poco	poco@yahoo.com	65432	Get disease risk

Get Disease Risk

Score:

Good news! The patient is not at risk for cardiovascular disease.

ML Results:

- Precision = 0.7264619164619164
- Recall = 0.725743751818539
- Accuracy = 0.726

Results and discussions

- Cloud-based opportunities

- utilize machine learning's potential

- forecast the risk based on patient's medical history

- update and train further on new data

Conclusions and recommendations

- **cost-effectiveness**
- **efficient solutions**
- **flexibility**
- **human error ↓**

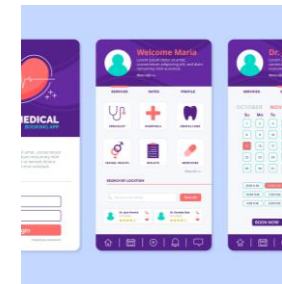# Future Work

Amazon Rekognition

CloudBot

Symptom Tracker

References

1. Fusaro, VINCENT A. (2011). Biomedical Cloud Computing With Amazon Web Services
2. Mu-Hsing KUO, Andre KUSHNIRUK, Elizabeth BORYCKI (2013). Cloud Computing for Health Information Management
3. Elizabeth ROURKE, M.D. (2021). In Clinical Care, What Will Amazon Deliver?
4. SINGH, Saurabh (2022). How Digital Transformation is Driving Innovation in the Healthcare Industry?
5. SINGH, Abhishek (2022). Healthcare Data Security: A Brief Overview of Challenges and Safety Measures

Thank you for your attention!

Maria-Luiza DULGHERU, Iuliana MARIN

Mobil: +40770592301

E-mail: maria.dulgheru@stud.fils.upb.ro, marin.iulliana25@gmail.com