DailySafe

Health Management & COVID-19 tracking App

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Problem Definition & Goal

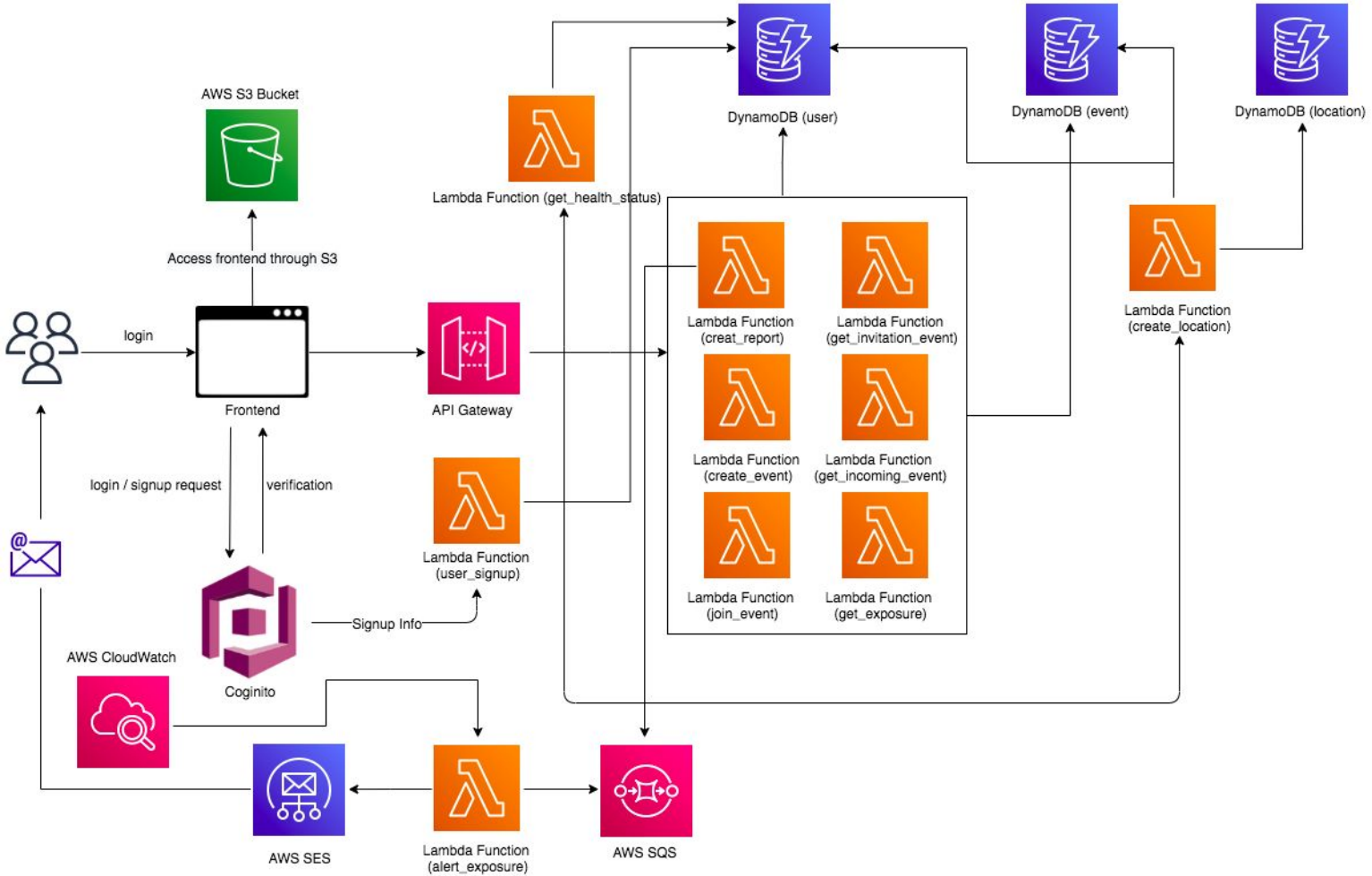
Problem:
At this specific time, we have to try every means to control the spread of COVID-19 virus. However, it is not an easy task to track the activities or location history of COVID-infected individuals and it might be late for people to realize that they may have been exposed to the virus somewhere when the symptoms have developed and become apparent.

Goal:
Our application innovatively records the interactions between users and will alert the users immediately after a possible exposure occurs, which is meaningful for controlling the spread of virus.

AWS Services we used in this APP

- ❑ API Gateway
- ❑ CloudWatch
- ❑ Cognito
- ❑ DynamoDB
- ❑ Lambda Functions
- ❑ Simple Email Service (SES)
- ❑ Simple Queue Service (SQS)
- ❑ S3 Bucket
- ❑ CI/CD

Architecture



APIs

Type	API	Lambda Function	Description
GET	/healthStatus	get_health_status	Get the health status (color) of user
GET	/exposure	get_exposure	Get the exposure events with colors of user
GET	/incoming	get_incoming_event	Get the incoming (joined) events of user
GET	/invitation	get_invitation_event	Get the invitation of events of user
POST	/joinEvent	join_event	Join an event in the invitation event list
POST	/createEvent	create_event	Create an event
POST	/location	create_location	Create a location check-in event
POST	/report	create_report	Report the daily health status of user

Implementations

Users complete a form to report their daily health status and if the result of form indicates an unhealthy status, the health-status-bar of the user will immediately become RED.

User needs to submit a "healthy" report for consecutive 7 days to make his/her health-status-bar become GREEN.

User who has reported healthy for less than consecutive days or has not reported their health for more than 48 hours will have a YELLOW health-status-bar
(if not reported >= 48 hours, lose all his/her consecutive days)

Implementations

ONLY the user with GREEN health-status-bar is able to create a personalized event and invite other users to join.

ONLY the user with GREEN health-status-bar is able to join an event from invitation list .

The user with GREEN or YELLOW health-status-bar is able to have a location check-in event (for example, a restaurant pick-up)

If there was an event that a RED user directly participated, the event will be marked RED and the other users in the same event will see the exposure.

If there was an event that an indirect user (who participated in an event with a RED user) participated, the event will be marked PINK and the other users in the same event will see the exposure.

If there was an event that a YELLOW user directly participated, the event will be marked YELLOW and the other users in the same event will see the exposure.

Result / Demo

- User

email	name
ts01@test.com	Tony Stark
sr01@test.com	Steve Rogers
bb01@test.com	Bruce Banner

Demo Assumption

❑ Event

Event Name	Event Time	Participants (who joined the event)
First Meeting	2021-04-23 15:30	Tony Stark (ts01), Steve Rogers (sr01)
Second Meeting	2021-04-24 17:00	Steve Rogers (sr01), Bruce Banner (bb01)

Tony Stark (ts01) now becomes RED health status!

What should happen to the color of these events?

Thanks!