CALM MIND MEDITATION APP DOCUMENTATION

CS441: MOBILE WEB PROGRAMMING

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CHAPTER 1: INTRODUCTION

AIM

The project seeks to explore the use of hybrid mobile application development using PhoneGap to solve problems associated mental stress and depression within Ghana. The aim of the project is to build an application that will provide meditation lessons to users to enable them stay present and cut out the stress in their lives. It also allows them to post their feelings, and learn more about meditations to better their plights.

BACKGROUND AND PROBLEM STATEMENT

Mental Health has been a topic of growing concern in the past few years. Individuals report having immense stress and high anxiety levels which affects their ability to go about their day to day activities. Individuals turn to drugs, bad eating habits and in worst cases, suicide to escape the pain of the mental duress they are under. There are many techniques and practices that help prevent and ameliorate the effects of poor mental health but these are not widely known or practiced. Individuals find it difficult to seek help for the fear of being judged and ridiculed by others. It appears finding a trusted helper who will not judge an individual is a potential solution to many mental health problems.

PROPOSED PROJECT

This project thus seeks to build an app that allows individuals to consume video and audio meditations as well as journal their thoughts. These practices are key in keeping the mind from wandering astray and falling into cycles of depression. By having different topics and pain points addressed through meditation, users can enjoy better mental health and a happier life.

CONTRIBUTIONS

The contributions of the project are as follows:

1. A means for consuming video meditations

2. A platform for journalling thoughts day to day

3. A platform for learning more about meditation and what it can do for the mind

REQUIREMENTS

REQUIREMENTS GATHERING

The primary users of the application are the individuals with an interest in improving their mental health and individuals who are in the field of counselling and hospitality In determining the needs and requirements of the app, research was conducted online about mental health and the practices that are best for it as well as informal interviews with professional guidance counselors This produced the specifications produced are listed below.

FUNCTIONAL REQUIREMENTS

This section explores the fundamental functions of the Calm Mind App

App. It is divided into two: User Requirements, System Requirements and Admin

Requirements.

User Requirements

1. The user must be able to listen to audio meditations

2. The user must be able to watch video meditations

3. The user must be able to learn about meditations through FAQs

4. The user must be able to know when they are no longer online

5. The user must be able to post their thoughts through journaling

6. The user must be able to take and upload pictures

System Requirements

1. The system must be able to display audio meditations

2. The system must be able to display video meditations

3. The system must be able to display past journal entries

4. The system must be to display meditation FAQs

5. The system must tell the user if they are working offline or not

6. The system must notify the user if they are losing battery power as a result of spending a lot of time on the app

Admin Requirements

1. The Admin must be able to upload video resources for users

2. The Admin must be able to upload audio resources for users

3. The Admin must be able to upload written resources for users

2.3

NON-FUNCTIONAL REQUIREMENTS

1. Availability - The system should be available and work always.

2. Integrity - The system must ensure that always, the information provided by users is accurate. The resources provided should also be credible and well researched.

4. Maintainability - The system shall be easy to maintain. The system shall

facilitate changes and updates without affecting the normal running of the system.

6. Usability - The system and its basic operations shall be simple to understand at first glance

8. Security - The system must have security features in place to ensure there

is no breach of integrity. Users should have the opportunity to remain anonymous

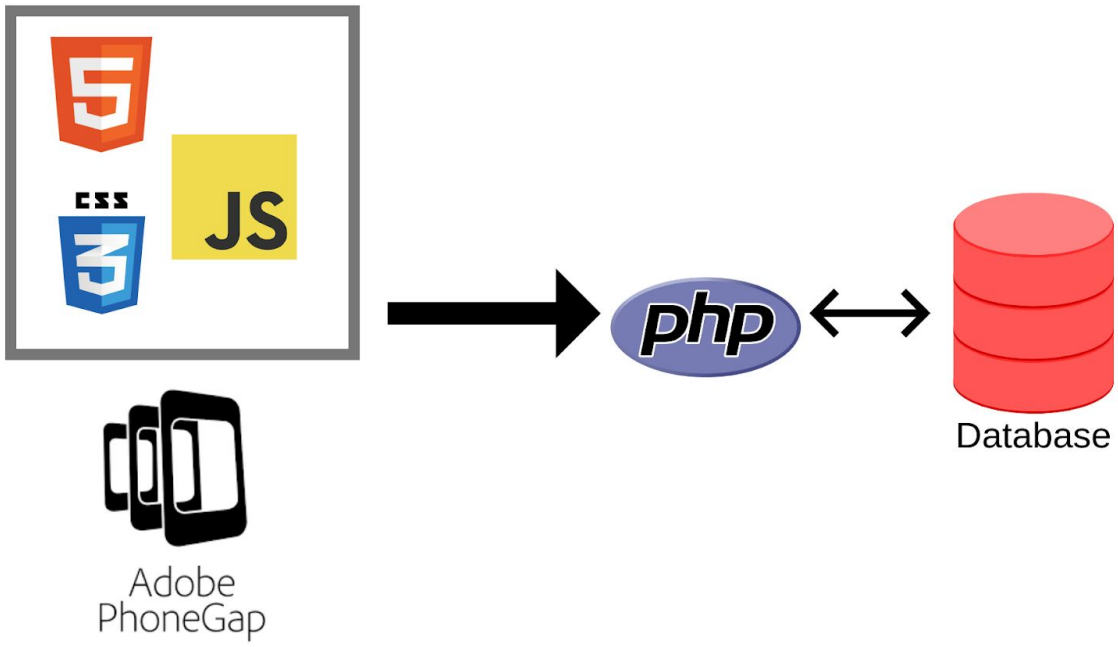
ARCHITECTURE & DESIGN

SYSTEM OVERVIEW

The system is structured regular users can access resources without having to have an account. On the launch of the application, the user is met with audio meditations hosted on Soundcloud and Youtube. They can play and listen to the meditations as they wish. There are also video meditations that feature more visual components for the user to enjoy. The user can also journal his/her thoughts on a given day to be recorded on the app. These thoughts are shared in a central repository hence other users trying to improve their mental health can also see posts. This serves to form as some sort of community for people using the app. Users can also view FAQs about meditation on the settings page. This opens an InApp Browser to a web page by a professional in mental health to give users more information. Information is stored online but when a user loses internet connection the app makes the user know and makes use of local storage during the down time. Acknowledging the fact that many users may spend hours on the app, the app has a built in functionality to let them know when their battery has reached a critical level and is in need of a charge. There is also functionality for the user to determine where they are using their geographic coordinates. Many people like to meditate while walking hence this is a useful extra functionality.

HIGH-LEVEL ARCHITECTURE

Figure 1 System Components Interactions



3.3.1 Case Scenarios

The following represents varying scenarios in using the Ashesi Premier League

Application:

1. Scenario 1

Akua Opens the Application during her break to listen to meditations about confidence

2. Scenario 2

As part of his morning, Isaac opens the open to watch some video meditations about self acceptance before he heads off to work

3. Scenario 3

David has listened to a number of meditations and seeks to share some of his thoughts on what he has realized and what he is thinking

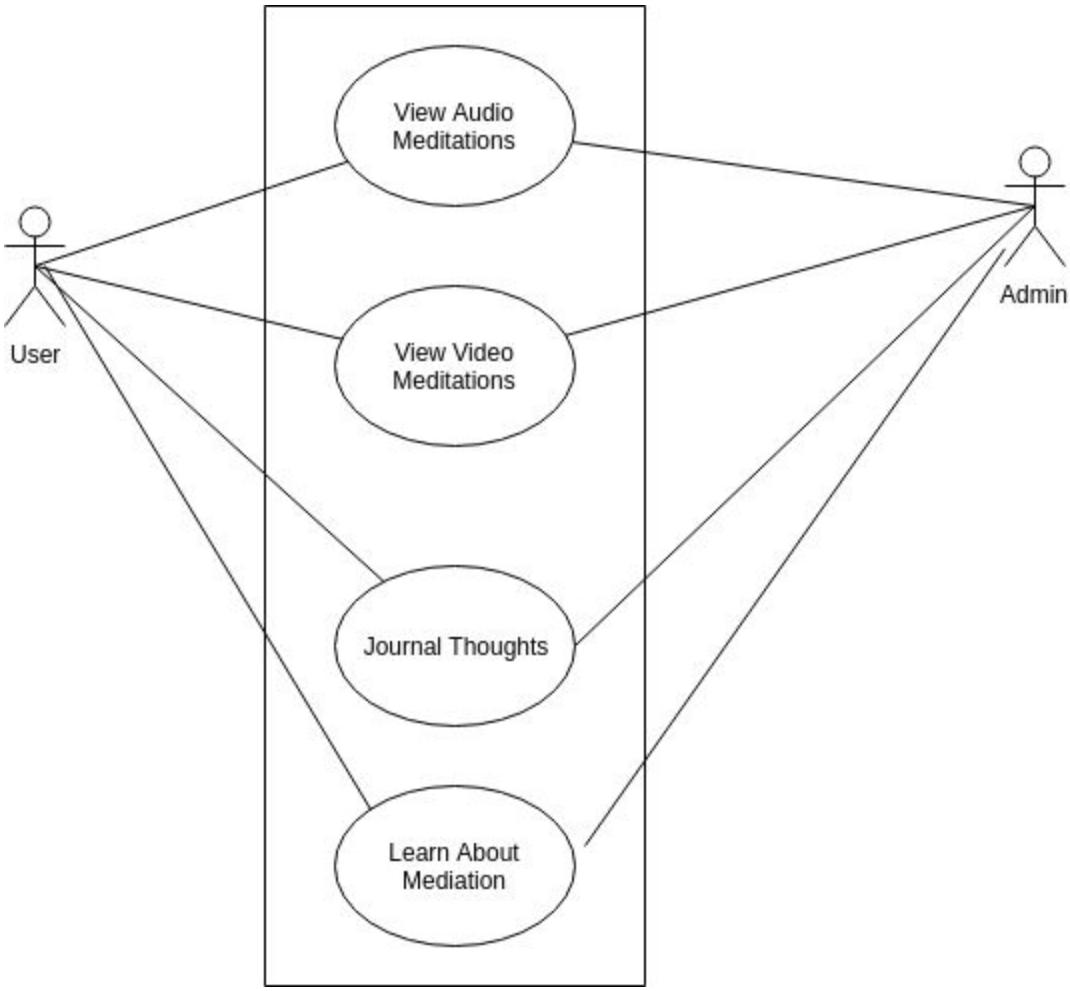
5. Scenario 4

Sampah has spent four hours meditating and the app notifies him that he should take a break and get a charge

Scenario 5

Patrick has just got the app, is not sure about meditation and seeks to learn more about how it can benefit him

Use Case Diagram



Database Architecture

POSTS TABLE

FIELD NAME	FIELD ATTRIBUTES
POST_ID	INT(11), AUTO INCREMENT, PRIMARY KEY
POST_AUTHOR	VARCHAR(255)
POST_CONTENT	VARCHAR(255)

POST_IMAGE	TEXT

AUDIO TABLE

FIELD NAME	FIELD ATTRIBUTES
AUDIO_ID	INT(11), AUTO INCREMENT, PRIMARY KEY
AUDIO_LINK	VARCHAR(255)
AUDIO_TITLE	VARCHAR(255)

VIDEOS TABLE

FIELD NAME	FIELD ATTRIBUTES
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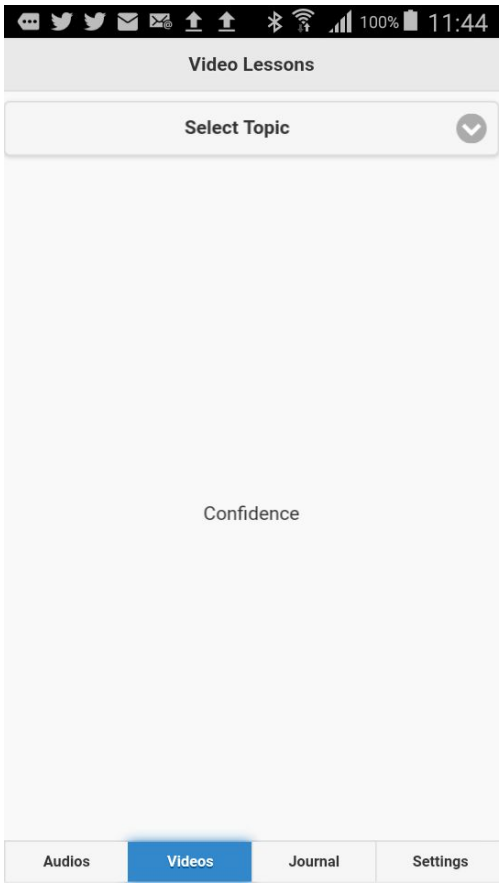
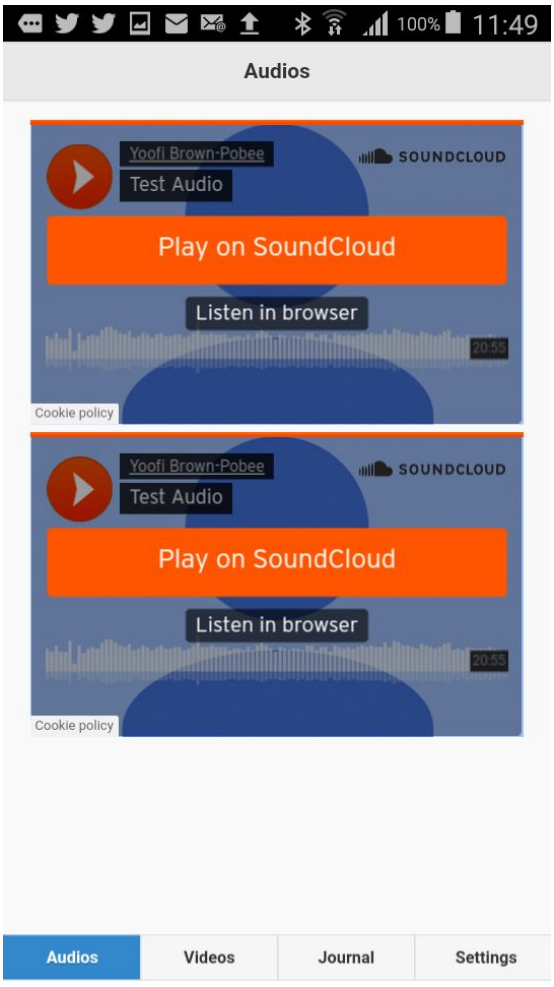
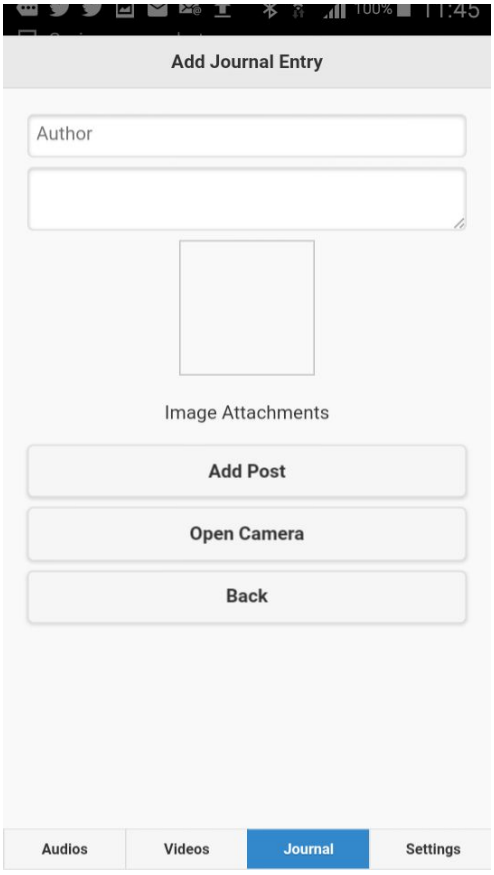
VIDEO_LINK	VARCHAR(255)
VIDEO_TITLE	VARCHAR(255)

IMPLEMENTATION



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Author
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Add Post
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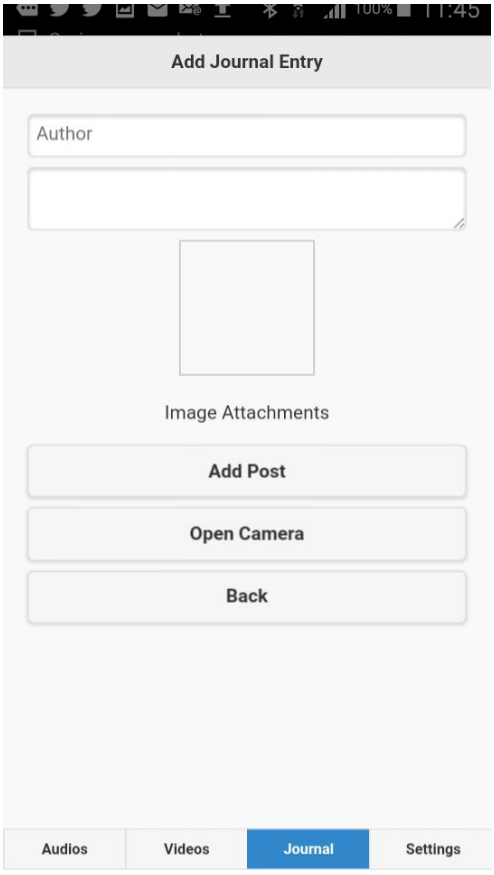
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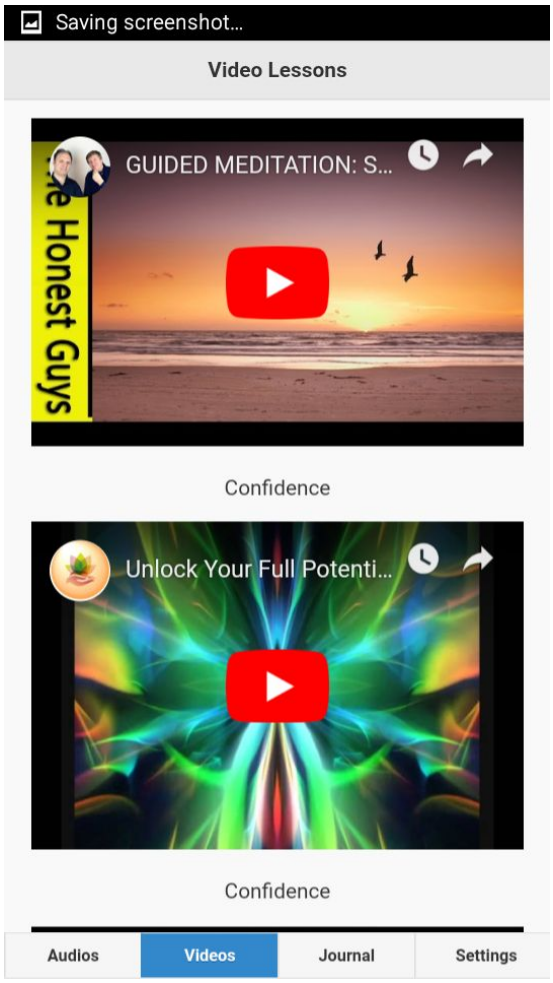

LOCAL RESOURCES USED

Camera: Users are able to take pictures and attach them to posts on when they are posting journal entries

GeoLocation: Users can identify their location on the settings page at the touch of a button. Touching the button gives Geographic details of the user at the given point

Phone Motion (Vibration): When the phone battery goes low or the user goes offline, the application vibrates and gives an alert.

Local Storage: When the user goes offline, journal posts are stored in local storage

Microphone for playing Audio: Audio and video elements are played through the Microphone

Offline Use: The user is notified when they go offline to let them know their posts will be stored locally

IMPLEMENTATION TECHNOLOGIES

Different technologies were used to build the entire Calm Mind Mediation App.

These technologies include Ajax, PHP,, jQuery Mobile, HTML, CSS, PhoneGap and Javascript.

4.3.1 Ajax and PHP

In this project, Ajax is used to interact with the server to serve video and audio links as well as post and store user thoughts. Ajax communicates with PHP to make this happen by executing SQL queries and returning the results to the page

4.3.3 HTML/CSS/JavaScript/JQuery Mobile

These were used to create the front end designs and structure that users interact with. These are given information by PHP to add an extra level of interactivity.

4.3.6 Ashesi Live Server

The Ashesi Live Server was used for managing the data for the Calm Mind app. The video, audio and journal data is stored here.