Basement Dwellers

KAPP Application
Software Architecture Document

Version <1.0>

Revision History

Date	Version	Description	Author
<23/10/2022>	<1.0>	<Major Revisions> We completely changed our design and the template we used to fit more in-line with other projects.	<Troy, Tanner, Adam, Chris, Thomas>
<10/25/2022>	<1.1>	<Continuing Revisions> Began transferring out project to Github, which we decided would allow us to collaborate easier. We are also continuing to make improvements to our design documents.	<Troy, Tanner, Adam, Chris, Thomas>

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Software Architecture Document

1. Introduction

1.1 Purpose

This document provides an architectural view of the system. An array of different architectural viewpoints are provided to display all the different aspects of the system. It is primarily used to describe the major architectural decisions on our system.

1.2 Scope

This Software Architecture Document provides an architectural overview of the KAPP Application. The KAPP Application provides information about campus events, classes, and grades to KU students. It will also provide students with an interactive campus map to help students find their way around campus.

1.3 Definitions, Acronyms, and Abbreviations

KAPP - KU App

JavaScript - Programming language

React - Front-end JavaScript library for building User Interface

1.4 References

1.5 Overview

The rest of this document gives a general overview of KAPP, its software system, and the application's specifications.

2. Architectural Representation

This document presents the architecture as Visual Paradigm models and uses the Unified Modeling Language (UML).

3. Architectural Goals and Constraints

KAPP is developed to work alone and provide students with easy access to maps, notes, assignments, and grades. KAPP is broken into these major components: —--------. These components will run collectively to create a seamless user experience.

4. Use-Case View

See Use Case Realization Specification Document

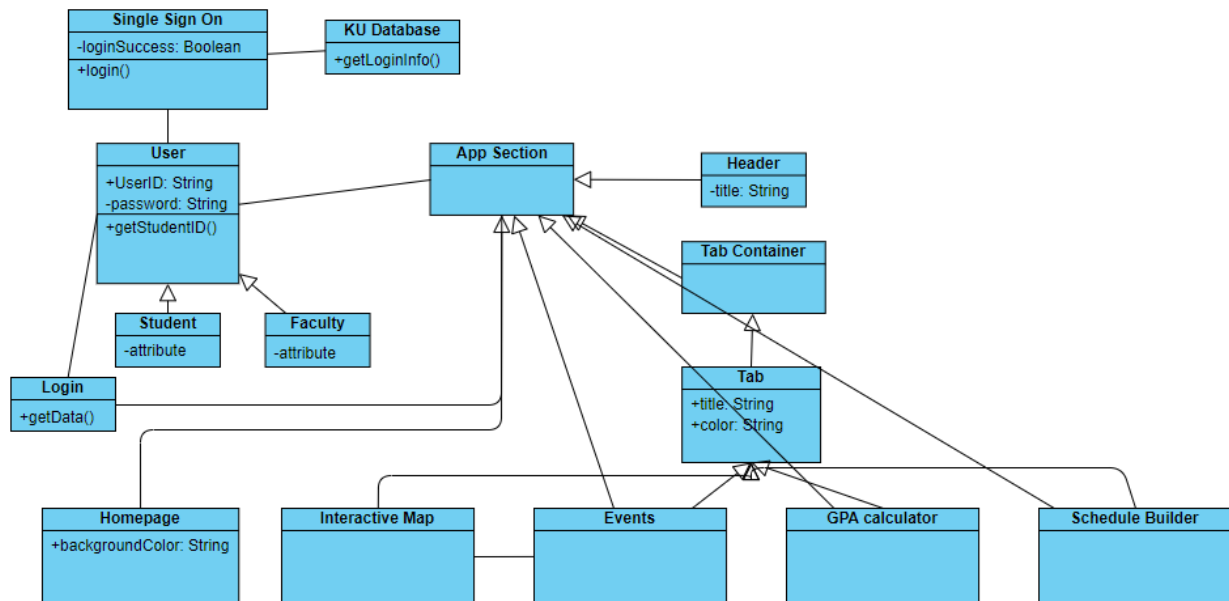## 5. Logical View

5.1 Overview

KAPP is made in two major components: The user interface and the backend application. The user interface is broken down by container. The app container holds the user and user information. It also holds the tab container, which allows the user to choose which tab is selected. The backend stores user information and handles authorization.

5.2 Class Diagram

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5.3 Design Classes Description

Property	Description
Name	Single Sign On
Description	Handles user sign-in process
Responsibilities	Verifies UserID and Password
Relations	Association with User class
Methods	login(): Begins Log-in Process
Attributes	loginSuccess: Boolean representing successful login
Special Requirements	None

Property	Description
Name	User
Description	User object for handling all app-user interactions
Responsibilities	Contains all user information
Relations	Parent class of Student and Faculty classes

Methods	getStudentID(): Returns student ID
Attributes	UserID: Student's User ID Password: Student's password
Special Requirements	None

Property	Description
Name	Student
Description	A type of user that is verified as a student of the University
Responsibilities	Contains information specific to a student
Relations	Generalization > User
Methods	none
Attributes	none
Special Requirements	none

Property	Description
Name	Faculty
Description	A type of user that is verified as faculty of the University
Responsibilities	Contains information specific to a faculty member
Relations	Generalization > User
Methods	none
Attributes	none
Special Requirements	none

Property	Description
Name	Login

Description	Handles Log-in Process into the app
Responsibilities	Collects necessary data from the Student
Relations	Association with the User class
Methods	getData(): gets the user's data
Attributes	none
Special Requirements	none

Property	Description
Name	KU Database
Description	Database containing student account information
Responsibilities	Provide student account information to application
Relations	Association with Single Sign-On
Methods	getLoginInfo(): returns student's login info
Attributes	none
Special Requirements	none

Property	Description
Name	App Section
Description	Main body of the App
Responsibilities	Contain information for the main body of the app
Relations	Parent class of several contained classes
Methods	None
Attributes	None
Special Requirements	None

Property	Description
Name	Header
Description	Header for the application
Responsibilities	Display a header on the top of the Application
Relations	Generalization> App Section
Methods	none
Attributes	title: String containing title for the page
Special Requirements	none

Property	Description
Name	Tab Container
Description	Container for the tabs on the app
Responsibilities	Contain the different tabs/sections of the app
Relations	Parent class of Tab
Methods	none
Attributes	none
Special Requirements	none

Property	Description
Name	Tab
Description	Abstract class representing each tab/each section of the app
Responsibilities	Contains structural information for each tab
Relations	Parent class of Interactive Map, Events, GPA calculator, and Schedule builder
Methods	none
Attributes	Title: String Color: String

Special Requirements	None

Property	Description
Name	Homepage
Description	Homepage for the app
Responsibilities	Displays Homepage for the app
Relations	Generalization> App Section
Methods	None
Attributes	backGroundColor: String
Special Requirements	none

Property	Description
Name	Interactive Map
Description	Class representing the Interactive Map functionality of the app
Responsibilities	Displays interactive map
Relations	Generalization> Tab. Also has association with Events
Methods	none
Attributes	none
Special Requirements	None

Property	Description
Name	Events
Description	Class representing the Events functionality of the app
Responsibilities	Displays events on campus
Relations	Generalization> Tab. Also has association with Interactive Map
Methods	none
Attributes	none

Special Requirements	None

Property	Description
Name	GPA Calculator
Description	Class representing the GPA Calculator functionality of the app
Responsibilities	Displays the GPA Calculator
Relations	Generalization> Tab.
Methods	none
Attributes	none
Special Requirements	None

Property	Description
Name	Schedule Builder
Description	Class representing the schedule builder functionality of the app
Responsibilities	Displays schedule builder
Relations	Generalization> Tab.
Methods	none
Attributes	none
Special Requirements	None

6.   Interface Description

The User-Interface is a tabular model consisting of individual tabs for events, grades, schedule builder, and interactive map. The functions of the interface follow the specifications already stated above.

7.   Size and Performance

The selected software architecture of KAPP supports use of the application through any typical OS or iOS device. The performance of KAPP is designed to use minimal computing power and memory.

8.   Quality

KAPP follows all software architecture requirements as well as the functional and non-functional specifications as stated in this document.