Dissection and Flowchart

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About the Project

ABOUT THE PROJECT

SECTION 1

The human body is anywhere from 55% - 60% of water. Being hydrated is a critical part of healthy living. Keeping your body supplemented with ample amounts of water promotes cardio-vascular healthy, keeps your body cool, and helps muscles and joints work better. But nearly 43% of adults drink less than half of the recommended daily amount. Liquid tracking applications aim to promote healthy living by giving the user constant reminders to drink water, as well as visual representations of the liquids they consume.

The pages below contain three dissected liquid tracking applications. Each application has been flowcharted, as well as a hypothesis of how their databases have been broken down. This has been done in an effort to effectively grasp how these applications function. This knowledge will then be used to create a better application.

Dissection Topic

DISSECTION TOPIC

SECTION 2

The purpose of this application dissection is to gain a full understanding of how these liquid tracking apps work. How do these applications take in user information? How do they take that data and store it so the a user can completely track their liquid consumption over the life span of the application? The fact that even the most basic applications on the market utilize databases, makes the skill of understanding data storage extremely valuable. It is important to see how other target market applications handle that data, so it can be made better in the future.

The applications being dissected in this paper are all similar target market applications that deal with tracking how much liquid a consumer ingest during a single day. These applications aid the user in staying hydrated by providing reminders, informing them of daily goals, and giving them visual representations of their consumption in the form of graphs. With the ability to continuously track this data, each application serves this particular function. However, functionality does not always relate to efficiency.

The applications in question are “My Water Balance”, “My Water”, and “Water Reminder”. Each of the following applications have been chosen because they “get the job done.” They do surprisingly well on the app store, but it seemed that little time was place into usability. With the general population having increased interest in fitness and health, a great application that focuses on hydration and liquid tracking is as important as ever.

Application Dissection

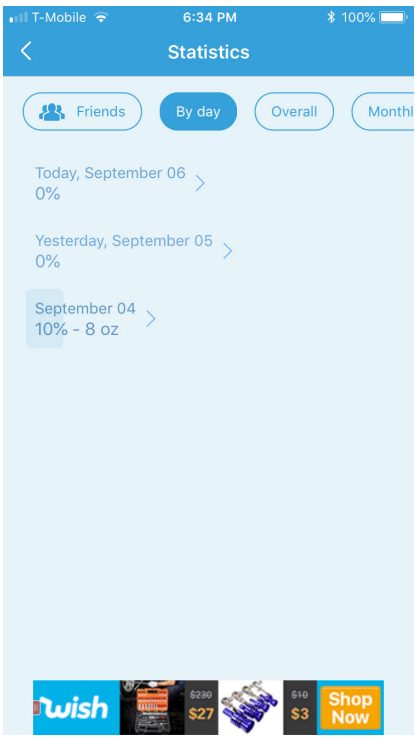
MY WATER BALANCE

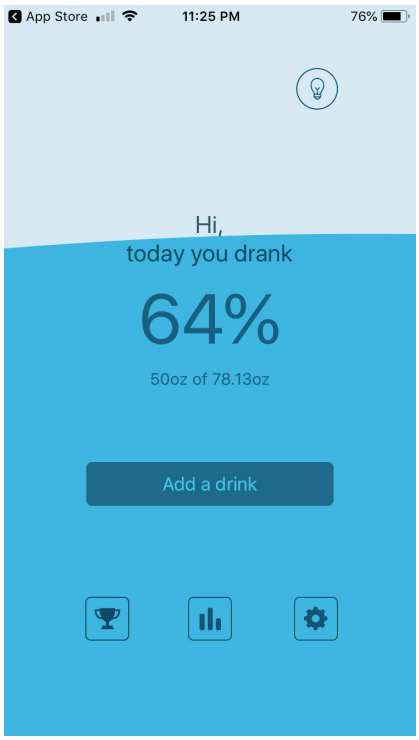
SECTION 3

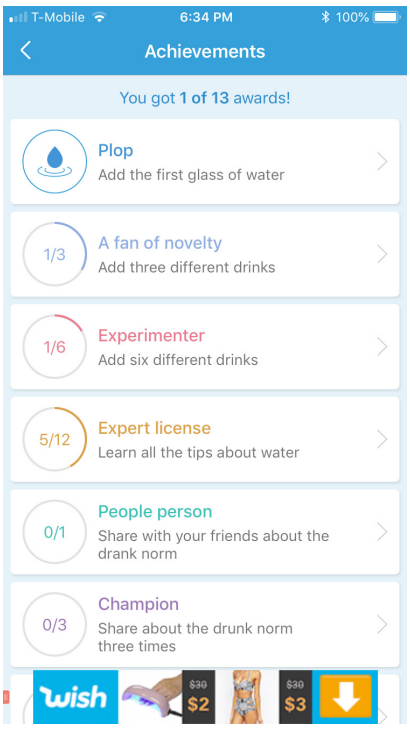
APPLICATION INFORMATION

My Water has the most basic user interface of the three applications, yet it had the most functionality. Which plays to its advantage. Many of the applications in the same market try to implement over the top UI's to compensate for its functionality being so simple. The initial homescreen shows the users daily consumption, starting at 0%. As the user consumes liquids through the day, the main screen fills up with water. This is an extremely effective visual. This allows the user to quickly glance at the app without deciphering too much information at once. It also utilizes gamification to enhance user experience. The user can earn achievements by accomplishing various goals within the application. This application also gives the user the option to pick from coffee, water, or tea, and what ever amount they drank. This information all gets stored and is accessible to the user when ever they please.

On the technical side, My Water Balance most likely implements a SQL database to track and store its users information. The table database probably has four tables. The main table would store all the user information such as user name, password, height, weight, and gender. There is most likely a secondary table that utilizes a userID to keep track of weekly and monthly amounts. A third normalized table would be used to keep track of the applications drinks. The final table is used to keep track of the time, date, and what drink the user consumed.

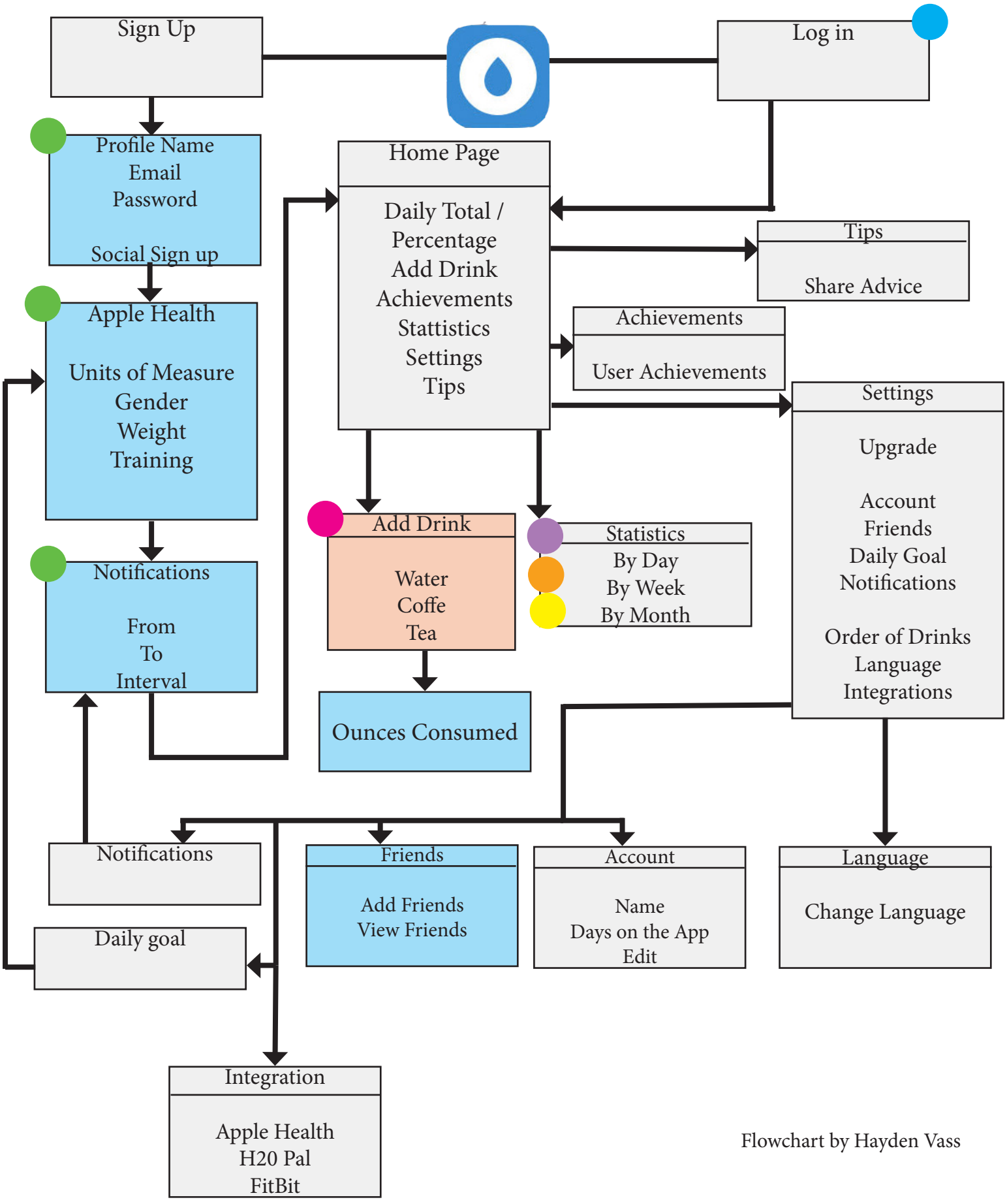






Images sourced from My Water Balance by Viktor Sharov

FLOWCHART



Flowchart by Hayden Vass

Key

- Pushes new user to database
- Pulls user data from database
- Pulls weekly amount from database
- Pushes daily amount to database
- Pulls monthly amount from database
- Pulls what drinks were consumed on a particular day from database
- User selection needed
- User Input needed

SQL CODE / UML TABLES

CREATE USER 'user'@'*' IDENTIFIED BY 'pwd123';
INSERT INTO users_Table (userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
VALUES ('userName','pwd123', 'M', '03121992', '182', 0800, 2100,2,1);

Users_Amounts	
userID	varchar
weeklyAmount	int
monthlyAmount	int

SELECT (userID, userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
FROM users_Table
WHERE userName = userName AND password = password;

users_Drinks	
userID	varchar
date	date/time
drinktype	int

UPDATE user_Amounts
SET date = 'current date', time = 'current time', dailyAmount = 'amount' WHERE userID = user;
UPDATE user_Drinks
SET date = 'current date', drinkType = 'currentDrink'
WHERE userId = 'user';

SELECT sum(dailyAmount) FROM user_Amounts'
WHERE userId = 'userName' BETWEEN 'date' AND 'date'
INSERT INTO weeklyAmount
WHERE userId = 'userName';

Users_Table	
userID	varchar
userName	varchar
password	varchar
unitsOfMeasure	int
gender	char
weight	int
training	int
wakeUpTime	date/time
sleepTime	date/time
achievements	varchar

SQL CODE / UML TABLES

- SELECT sum(weeklyAmount) FROM user_Amounts'
  WHERE userId = 'userName' BETWEEN 'date' AND 'date'
  INSERT INTO 'montlyAmount'
  WHERE userId = 'userName';

- SELECT drink, amount
  FROM user_Amounts
  WHERE date = date;

drink_Type	
coffee	int
water	int
tea	int

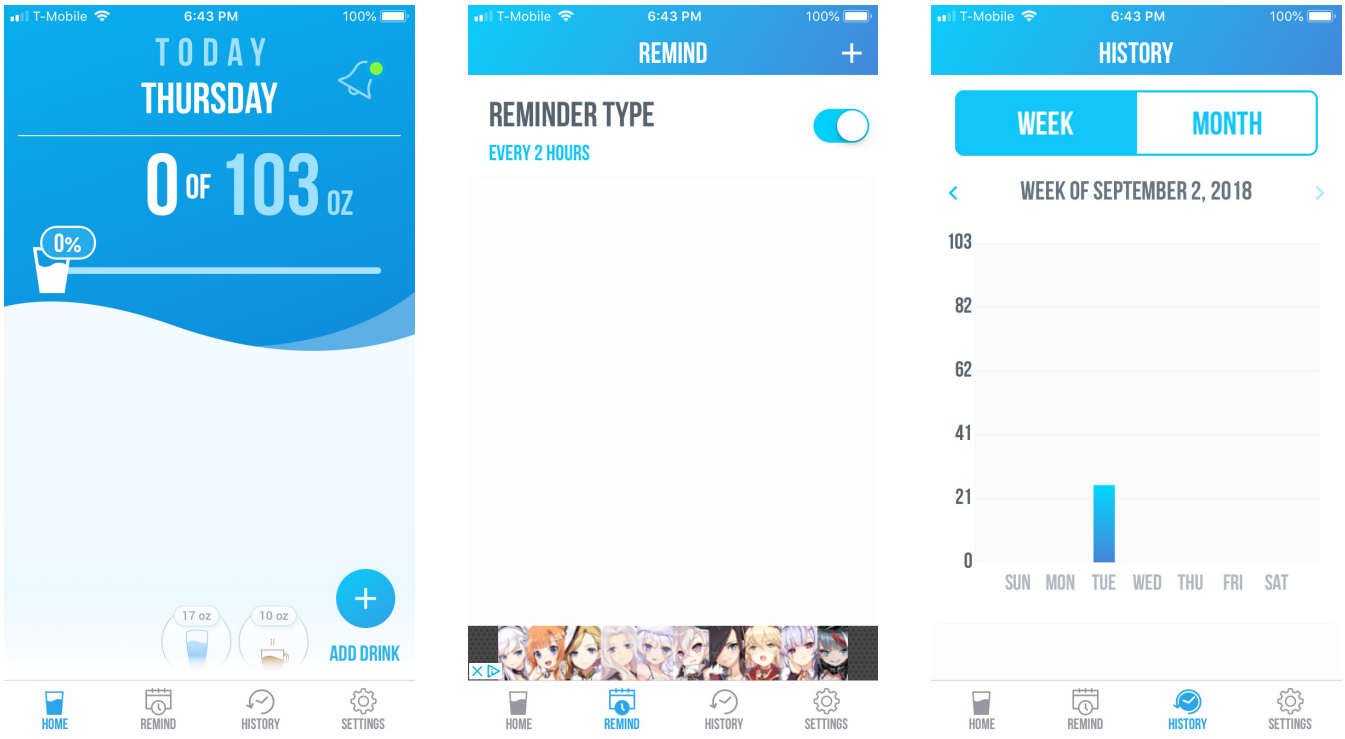
WATER REMINDER

SECTION 4

APPLICATION INFORMATION

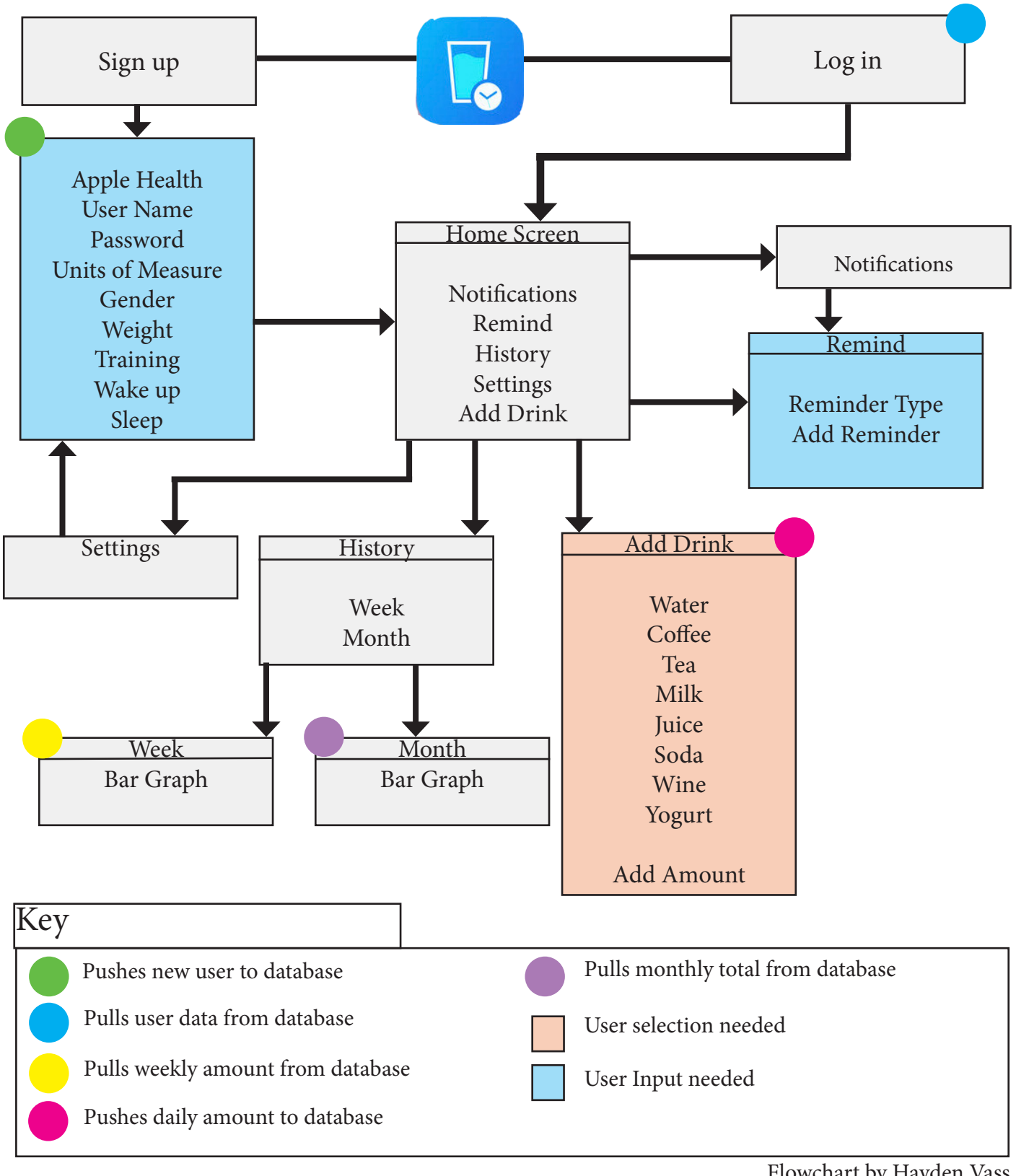
Water reminder is the second application under inspection. Water reminder does not have a friendly UI and is the least attractive application of the three. This application falls short due to the fact that its confusing. Many buttons take the user to the same page, creating a redundant source of frustration. Another down side to this application is the fact that the user has to do their own research. While the application takes in the users weight and gender, it does not educate them on how much water they should be drinking. Like the previous app, Water reminder does allow the user to pick between different types of liquid to add to their daily total. Though it is seemingly done for no reason. This application only stores the amounts the user drank in a day. The only redeeming quality of this application is the fact that it has a quick select option for beverages that the user drinks regularly. This function allows the user to quickly tap an icon that will add the drink and the amount to the total.

My water app uses a relational database to store and log its users information. The application most likely implements three tables. One table would be dedicated to user information such as gender, weight and user name. The secondary table most likely keeps track of the amount of liquid a user drank. And the last table would be a normalized table for available drinks.



Images from Water Reminder application by VGFit LLC

FLOWCHART



Flowchart by Hayden Vass

SQL CODE/ UML TABLE

- CREATE USER 'user'@'*' IDENTIFIED BY 'pwd123';
  INSERT INTO users_Table (userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
  VALUES ('userName','pwd123', 'M', '03121992', '182', 0800, 2100,2,1);

- SELECT (userID, userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
  FROM users_Table
  WHERE userName = userName AND password = password;

- UPDATE user_Amounts
  SET date = 'current date', time = 'current time', dailyAmount = 'amount'
  WHERE userID = user;

- SELECT sum(dailyAmount) FROM user_Amounts'
  WHERE userId = 'userName' BETWEEN 'date' AND 'date'
  INSERT INTO weeklyAmount
  WHERE userId = 'userName';

- SELECT sum(weeklyAmount) FROM user_Amounts'
  WHERE userId = 'userName' BETWEEN 'date' AND 'date'
  INSERT INTO 'montlyAmount'
  WHERE userId = 'userName';

Users_Table

User ID	varchar
userName	varchar
password	varchar
gender	char
units	varchar
weight	int
wakeUpTime	date/time
sleepTime	date/time
reminders	int
defaultDrinkS	int

user_Amounts

userID	varchar
date	date/time
time	date/time
dailyAmount	int
weeklyAmount	int
monthlyAmount	int

drink_Type

coffee	int
water	int
tea	int

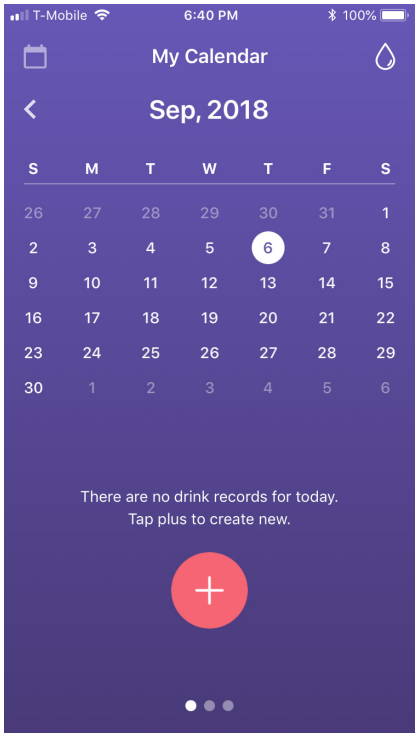
MY WATER

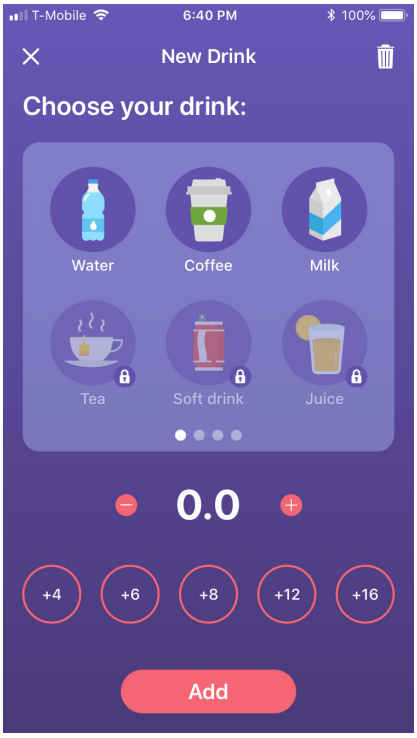
SECTION 5

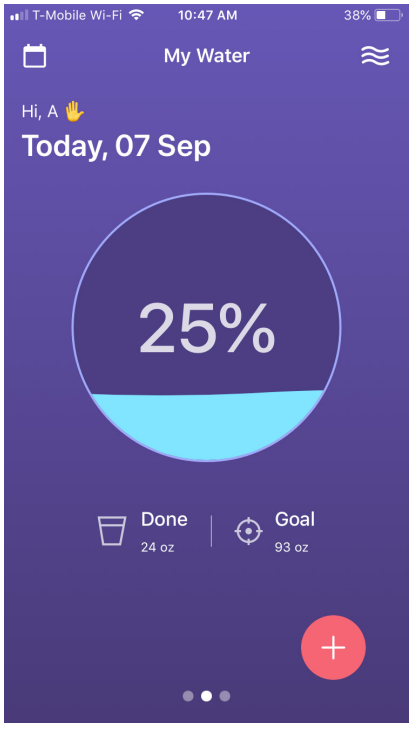
APPLICATION INFORMATION

The last application in the study is called “My Water”. This application provides the user with a simple yet engaging user interface. The contrast between the user goals and data are clear, and allows the user to navigate the application with ease. The over all functionality of “My Water” is good. The app provides the user a calendar that tracks all the drinks they consumed in any particular day. The home screen is simple and effective. Both numerical data of how much as been consumed and how much is left is present, as well as a data visual of the amount of liquid consumed. Though the application serves its purpose, there are a few down sides to this particular choice. The biggest negative being apart of the add a drink function. If the user double clicks an amount, that amount gets added to a temporary running total. For example, if the user presses 12 twice the application will think the user is trying to add 24. This is fine, except for the fact that the subtract function only subtracts .5 from the total. This could frustrate a user if they accidentally double tapped a number, then has to either tap twice that much to remove the amount, or start over.

My Water utilizes a database to keep track of all their users and what they drink. They most likely use a relational database with three tables. A main table that contains user information. A secondary table that contains userIds as well as dates and ounces and drinks. A third normalized table that contains the applications drinks.



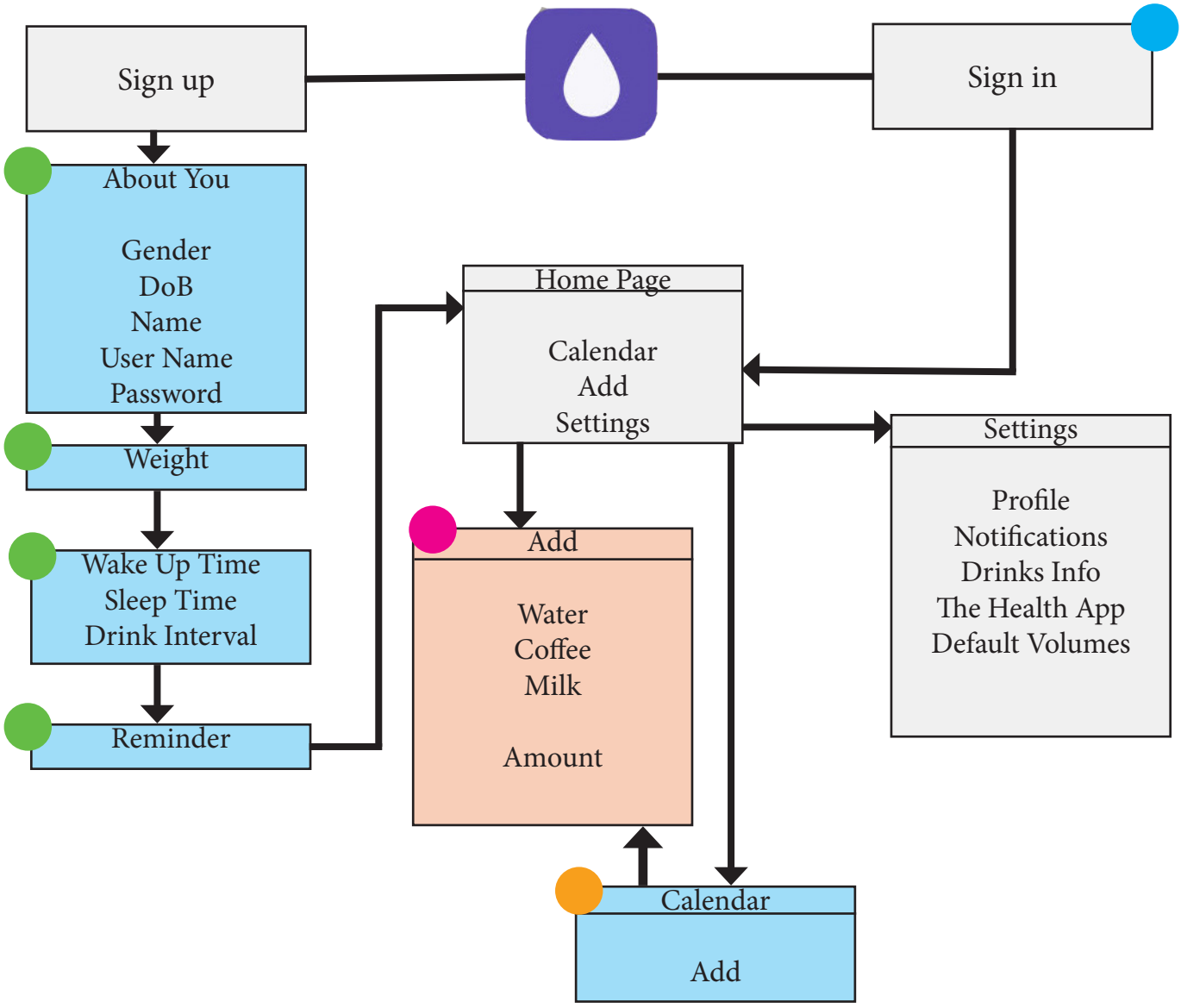




Images from My Water application by Rychard Matskevich

FLOWCHART

SECTION 5



Flowchart by Hayden Vass

SQL CODE / UML TABLES

SECTION 5

CREATE USER 'user'@'*' IDENTIFIED BY 'pwd123';
INSERT INTO users_Table (userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
VALUES ('userName','pwd123', 'M', '03121992', '182', 0800, 2100,2,1);

SELECT (userID, userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
FROM users_Table
WHERE userName = userName AND password = password;

UPDATE user_Amounts
SET date = 'current date', time = 'current time', dailyAmount = 'amount', drink = 'drink'.
WHERE userID = user;

SELECT drink, amount, time
FROM user_Amounts
WHERE date = date AND userId = user;

Users_Table	
User ID	varchar
userName	varchar
password	varchar
gender	char
units	varchar
weight	int
wakeUpTime	date/time
sleepTime	date/time
reminders	int
defaultDrinkS	int

user_Amounts	
userID	varchar
date	date/time
time	date/time
dailyAmount	int
drink	int
amount	int

drink_Type	
coffee	int
water	int
tea	int

H2KNO (CUSTOM APP)

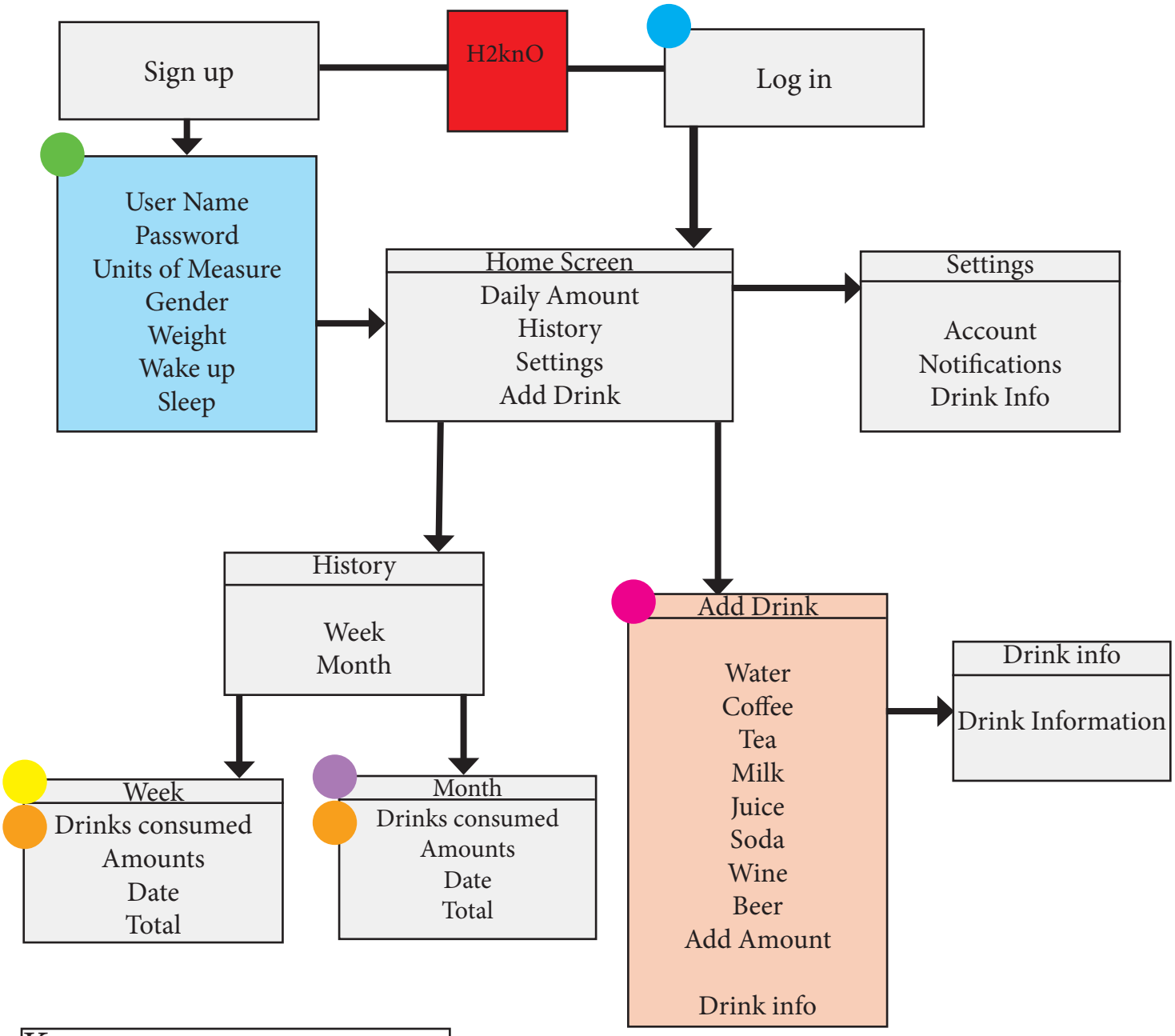
SECTION 6

APPLICATION INFORMATION

H2knO is an application birthed from the knowledge divulged from the applications. The user interface is sleek and easy to understand, and adopts the less is more mentality. The home screen shows the user their daily consumption in the measurement they choose. The home screen will also contain a data visual for the amount of liquid the user consumed, for times when a quick glance is all the user can afford. The application will have sections dedicated to daily amount, weekly amount, and monthly amounts.

H2knO utilizes a SQL database to store, pull and utilize user data. Information such as user name and password will be used to log in. While information such as weight, and gender will be used to recommend daily amounts of particular liquids and notify them when they are reaching their daily levels. This application will utilize four tables in its relational database. A normalized table will be used to store the different drinks available to choose from. A users table will be used to store user information. Lastly, a users drinks and users amounts tables will exist to keep track of what beverages are consumed the most, as well as the amounts drank.

FLOWCHART


Sign up
H2knO
Log in
User Name
Password
Units of Measure
Gender
Weight
Wake up
Sleep
Home Screen
Daily Amount
History
Settings
Add Drink
Settings
Account
Notifications
Drink Info
History
Week
Month
Add Drink
Water
Coffee
Tea
Milk
Juice
Soda
Wine
Beer
Add Amount
Drink info
Drink info
Drink Information
Week
Drinks consumed
Amounts
Date
Total
Month
Drinks consumed
Amounts
Date
Total
Key
Push a user to a databse
Pull user data from databse
Pull weekly totaly from database
Push daily totaly to database
Code to show monthly amount
Code to show what drinks were consumed on a particular day.
User selection needed
User Input needed

SQL CODE / UML TABLES

CREATE USER 'user'@'*' IDENTIFIED BY 'pwd123';
INSERT INTO users_Table (userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
VALUES ('userName','pwd123', 'M', '03121992', '182', 0800, 2100,2,1);

SELECT (userID, userName, password, gender, DoB, weight, wakeUpTime, sleepTime, drinkInterval, reminders)
FROM users_Table
WHERE userName = userName AND password = password;

UPDATE user_Amounts
SET date = 'current date', time = 'current time', dailyAmount = 'amount' WHERE userID = user;
UPDATE user_Drinks
SET date = 'current date', drinkType = 'currentDrink'
WHERE userId = 'user';

SELECT sum(dailyAmount) FROM user_Amounts'
WHERE userId = 'userName' BETWEEN 'date' AND 'date'
INSERT INTO weeklyAmount
WHERE userId = 'userName';

SELECT sum(weeklyAmount) FROM user_Amounts'
WHERE userId = 'userName' BETWEEN 'date' AND 'date'
INSERT INTO 'montlyAmount'
WHERE userId = 'userName';

SELECT drink, amount
FROM user_Amounts
WHERE date = 'date' AND userID = 'user';

Users_Table

User ID	varchar
userName	varchar
password	varchar
gender	char
units	varchar
weight	int
wakeUpTime	date/time
sleepTime	date/time
reminders	int
defaultDrinkS	int

user_Amounts

userID	varchar
date	date/time
time	date/time
dailyAmount	int
weeklyAmount	int
monthlyAmount	int

drink_Type

coffee	int
water	int
tea	int

users_Drinks

userID	varchar
date	date/time
drinkType	int

DIFFERENCES

SECTION 7

All three apps provide the same service, but how these products function all differs. My Water Balance was deceptively the most in-depth application. At first glance, it seems boring and unassuming. As the user engages in the application they will be pleasantly surprised. My Water Balance has an element of surprise, which helps grab the user and builds upon that initial base. This particular application also utilizes gamification and integrates social media to keep users coming back. Another unique aspect to My Water Balance was their implementation the devices gyroscope into their UI. The user can see the water they have accumulated over the course of the day slosh around as their device tilts. They were also the only application to incorporate big time fitness apps, such as fit bit, into their application. The biggest issue with this application was the fact that so much of the functionality was hidden in the settings. Some users may feel a sense of discovery finding things in settings, but that is only if they explore that deep into the application. For the standard user who does not look dissect every aspect of this app, its a real missed opportunity.

The function that set My Water Reminder apart from the others was its emphasis on the reminder aspect of the application. This was also its down fall. Focusing too much on an aspect that should be incorporated regardless is redundant. The application was also confusing. It takes the user down paths with what seems to be no reason. One unique feature that worked well for this application was their data visuals. This was the only app to include bar graphs of the users consumptions. This is a great way to show users their progress, keep them motivated, and keep them returning to the application.

The thing that set My Water apart from the others is its attractive design and the ability to update user data from almost any screen. This allows the user more versatility when exploring the application. This causes less redundancy for the user and allows them to accomplish their mission within the app easier. My Water also provides the user with information about various drinks. This information includes coefficients and the effects of different drinks on over hydration.

ADVANTAGES OF H2KNO

SECTION 8

H2knO will set its self apart by making its self more available to the user. After dissecting similar apps within the market, it was discovered that most applications hide quite a bit of their versatility in the settings. This part of applications rarely get visited by casual users. While H2knO will provide its users with a sense of discovery, it will not tuck its key features away. This custom application will also aim to educate its users on the benefits of staying hydrated. This will be accomplished by providing tips and motivation through the form of notifications. As with the other applications, H2knO will also allow its users to set daily reminders and track their liquid consumption over long periods of time. This will allow the app to see trends and guide its user to a better hydrate way of living

What was Learned

KNOWLEDGE OBTAINED

SECTION 9

Through this conquest and dissection of similar market apps, it was discovered that even the most simple applications require the involvement of various tools. It was revealed that no matter how clean the code is, or how beautiful the design is, an application simply can not function without a efficiently designed database base. The need for data storage is of the utmost importance. The data received and stored can significantly improve or hinder a users experience.

It was also found that every part of an application should be designed with a reason behind it. A smooth flowing and cohesive application will allow the user to navigate with ease. An application should never leave its user guessing either. Humans are creatures of habit, and find patterns in everything. If an application does not provide its user with these patterns, then they will utilize another application to fill their needs.

A new level of understanding of reverse engineer was also obtained during this process. Revere engineering is an important cog in any development process. It is extremely valuable to be able to look at a product, decipher what works and what doest, then tune it to a better product. It was realized when a developer can master this tool, they can create almost anything.

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SECTION 12

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