

FITPAL: FITNESS TRACKER

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• ABSTRACT



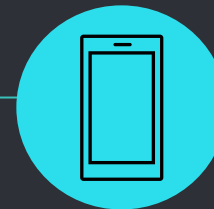
What?

Consolidated fitness dashboard



Why?

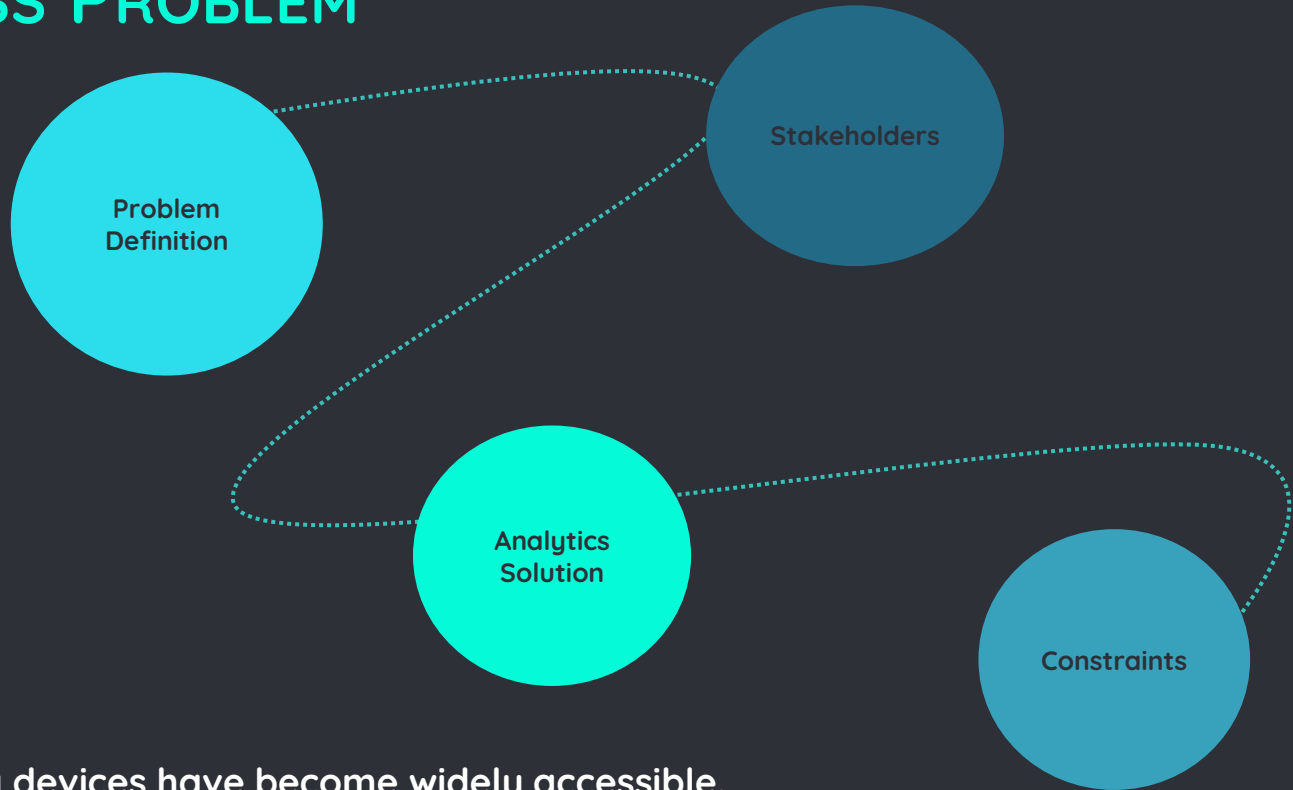
Needed technology in one of the world's fastest growing industries



How?

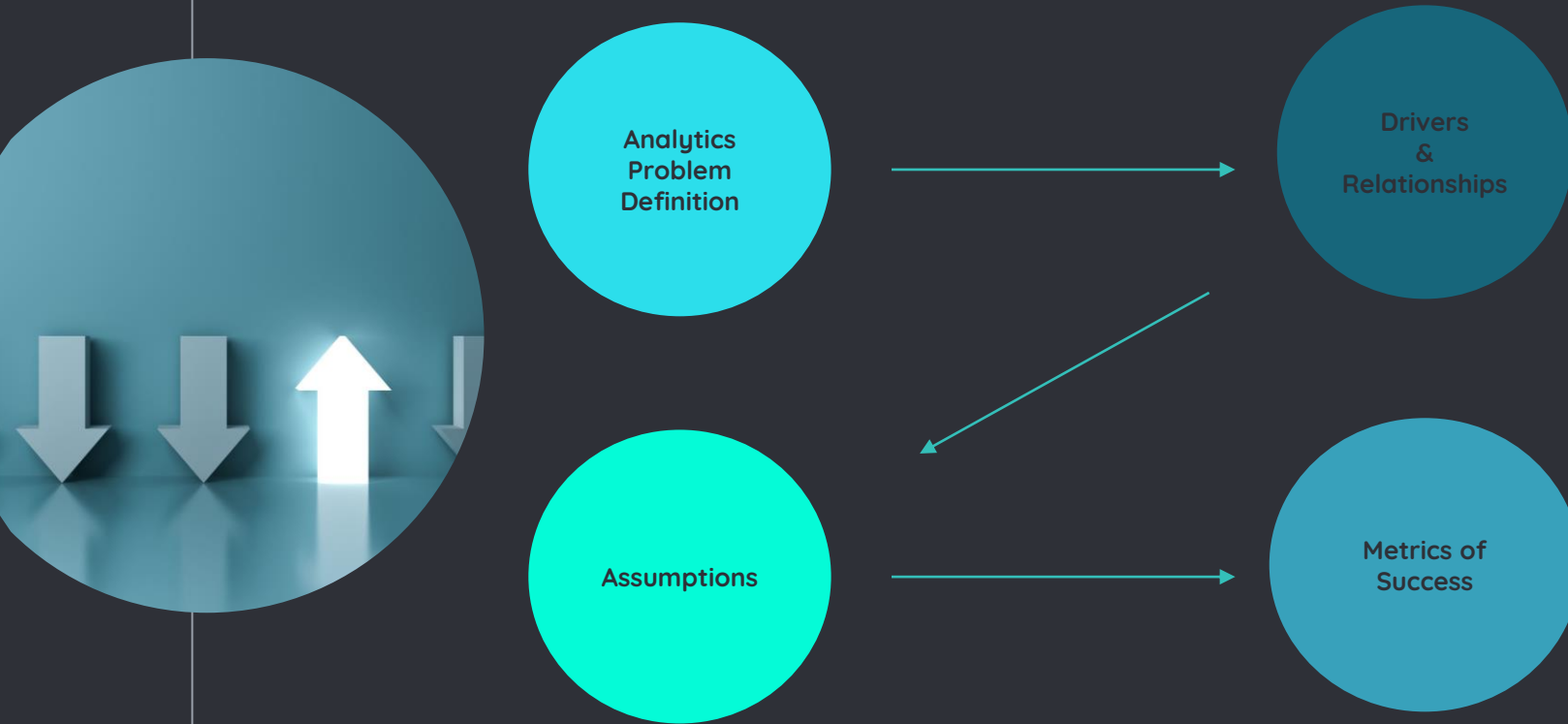
Shiny App used to display user fitness goals, progress, and recommendations

• BUSINESS PROBLEM



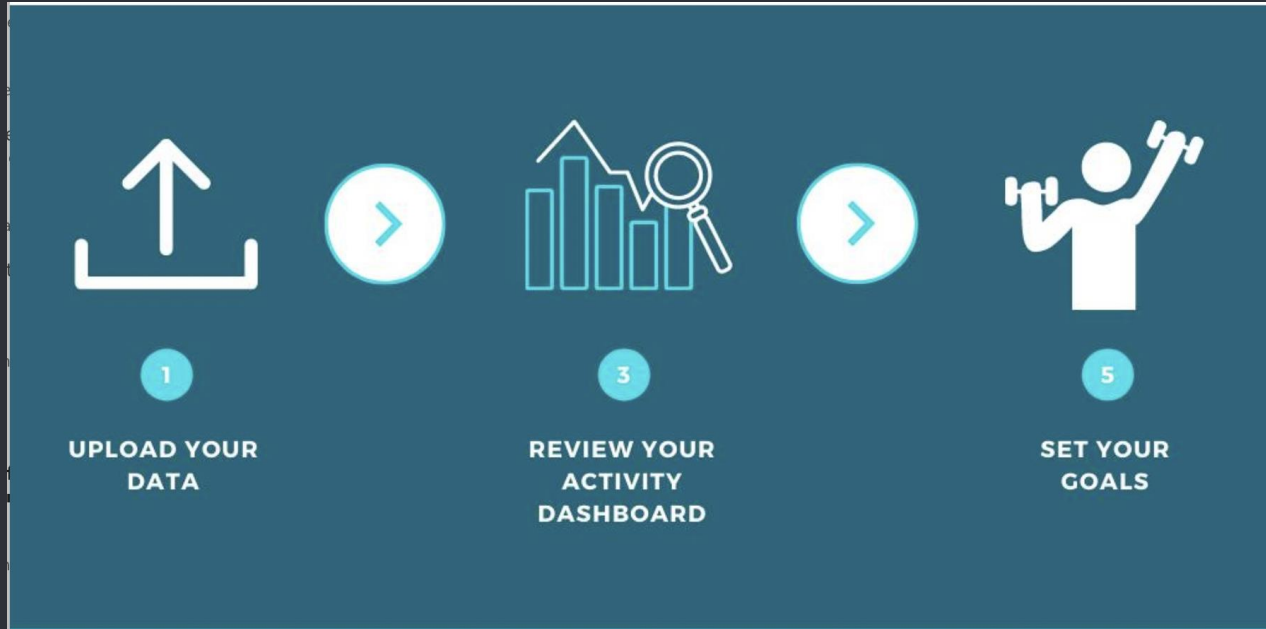
Fitness tracking devices have become widely accessible. However, a consolidated place to set goals, see progress, and gain insights into meeting one's goals is difficult to find.

• ANALYTICS PROBLEM



• How the app works?

- Monitor your Fitness in 3 Simple Steps



• BENEFITS



- Displays current and historic fitness data
- Shows users how close they are to achieving their goals
- Suggests fitness programs to help users achieve their goals

Methodology

Descriptive

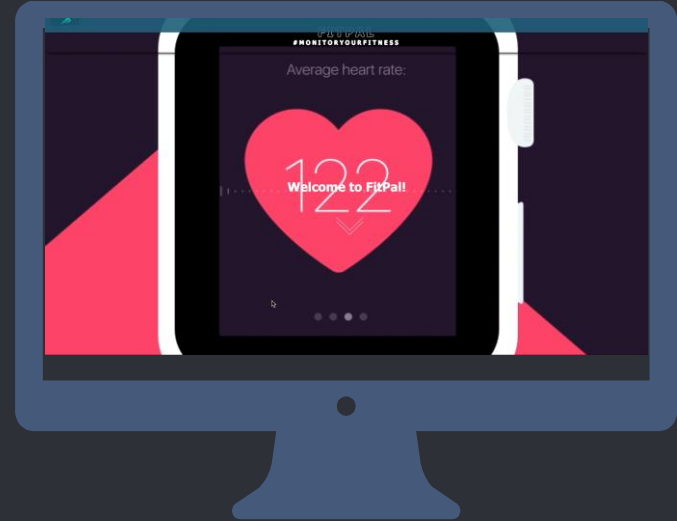
- Interactive dashboard of all physical activities based on different aggregation

Predictive

- Predict if a user will be able to achieve the fitness goal

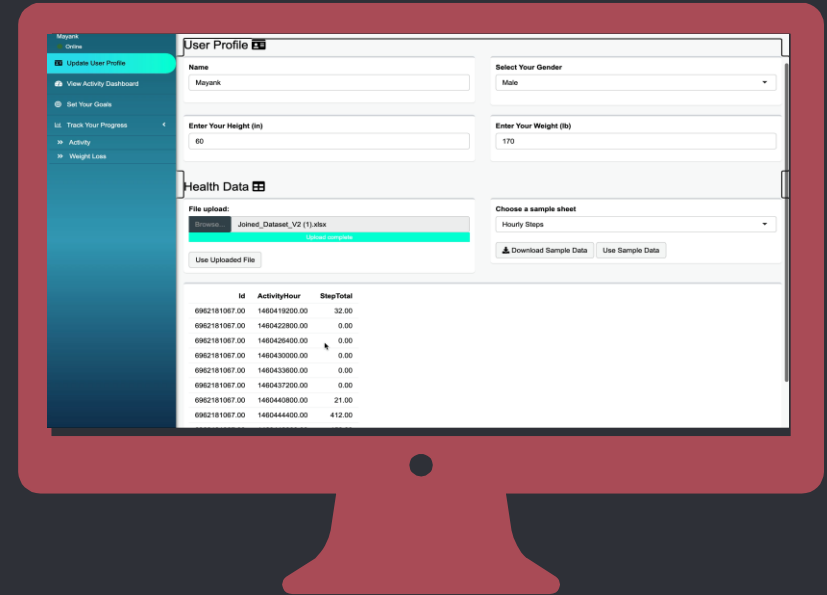
Prescriptive

- Prescribe Nutritional intake and activities based on desired weight



Model Building

- Used ARIMA Time Series forecasting method to predict whether the user will achieve the goal
- Used the inputs of BMR to prescribe nutritional intake and activities via spoonacular API call



- APP'S TECHNICAL ARCHITECTURE



- APP DEMO

FitPal is live!



Challenges

- Even though we intended for this app to functional for multiple fitness technologies (Fitbit, Apple Watch, etc.), we can only collect data in a certain format
- Our example data set only spans 30 days. Thus, our app is not built to handle large datasets
- We would like to make our graphs more interactive



Future Improvements

- Have the app record the user activity data in real-time directly from the fitness tracking device.
- Take other inputs such as sleep cycle and breathe to predict weight loss goal status.
- Send daily monitoring alerts to user on Fitness goal status.



References

Steps & Calories Graph

<https://taraskaduk.com/posts/2019-03-23-apple-health/>

BMI Calculator

https://andersen.shinyapps.io/bmi_calc/
https://github.com/AndreCAndersen/bmi_calc/blob/master/server.R

BMI Values & Formula

https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi_tbl2.htm
https://www.cdc.gov/nccdphp/dnpao/growthcharts/training/bmiage/page5_2.html

App Functionality

<https://github.com/BakerSten/Group5FinalR/blob/main/app.R>