MICHIGAN STATE
UNIVERSITY

Project Plan
AutoBudget Chatbot

The Capstone Experience

Team MSUFCU

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Spring 2019

From Students…
…to Professionals
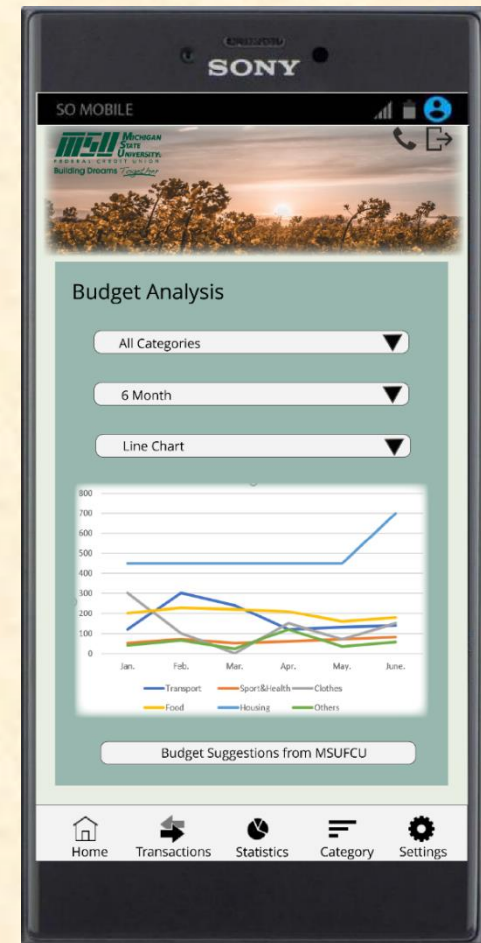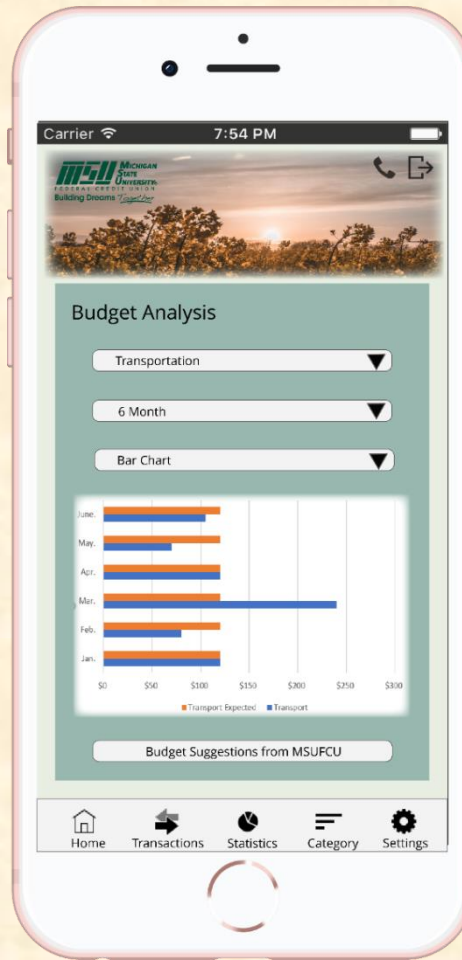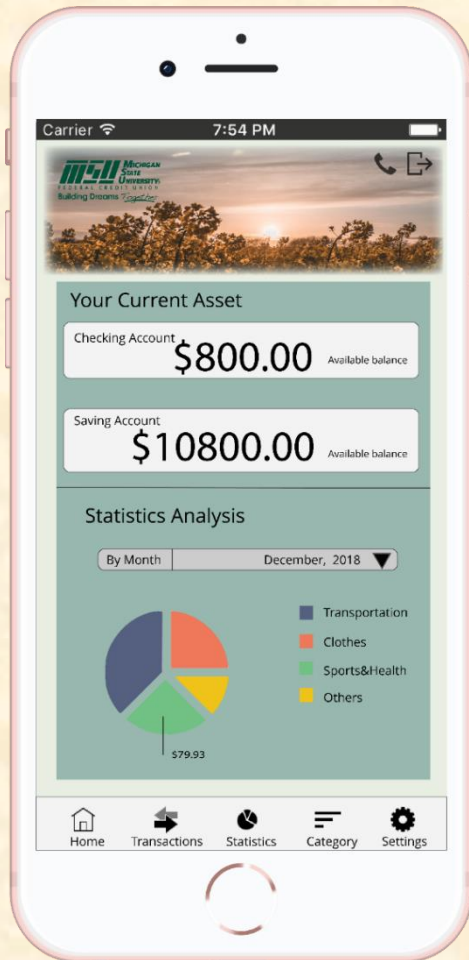
Functional Specifications

- Users need an easy way to get financial advice

- Use Amazon Alexa and Google Home as personal assistants to advise users on reaching their goals

- Create mobile application to allow users to view visual data about their accounts from anywhere
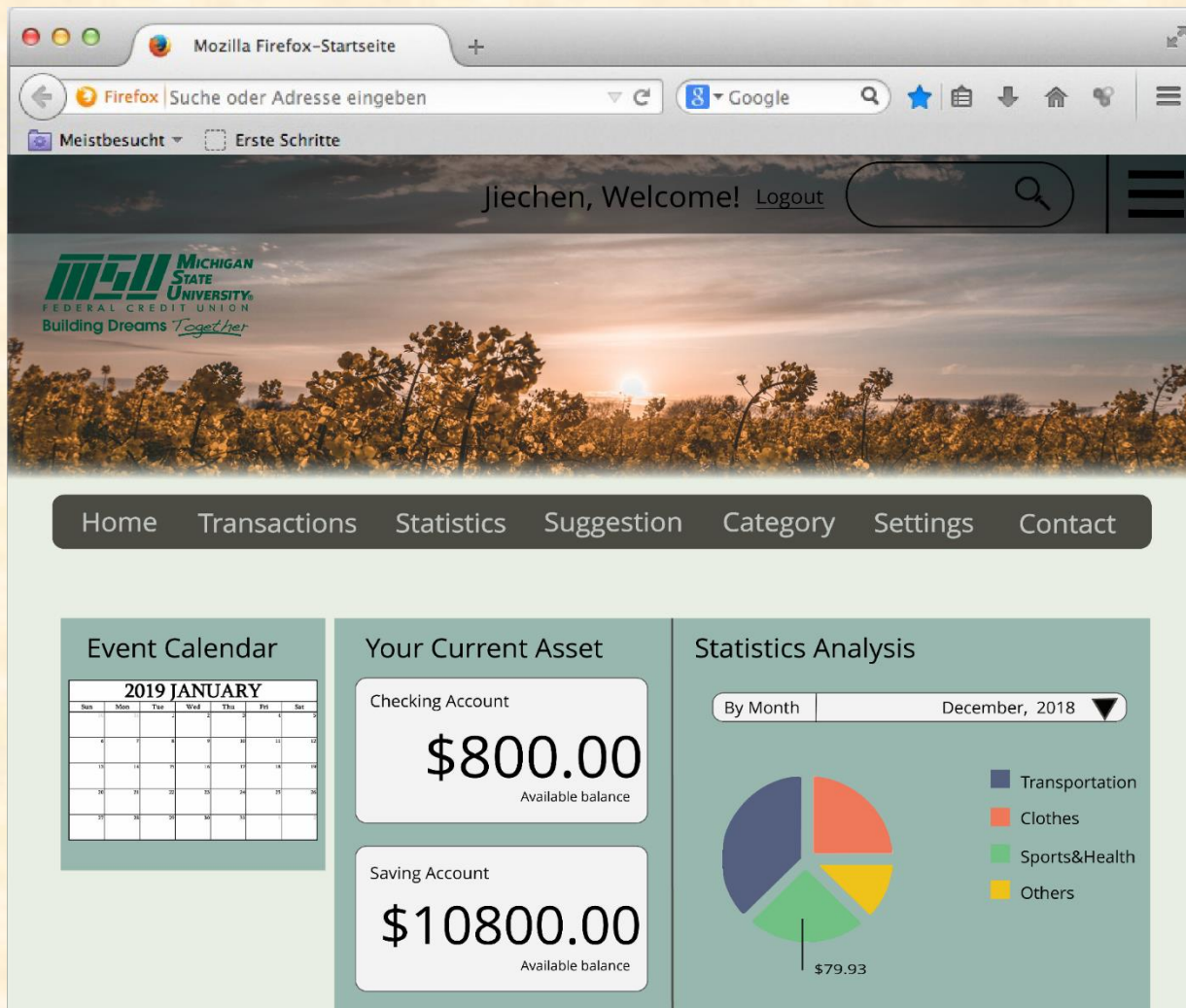
Design Specifications

- Simple, bright, and easy to understand

- Shared components for consistency

- Budget analysis via charts

- User can select preferred chart type

- Provides budgeting tips for user

Screen Mockup: Mobile Devices

Screen Mockup: Website

Screen Mockup: Alexa

Hey MSUFCU, what's my checking account balace?
User

Your checking account balance is $800.00.
MSUFCU

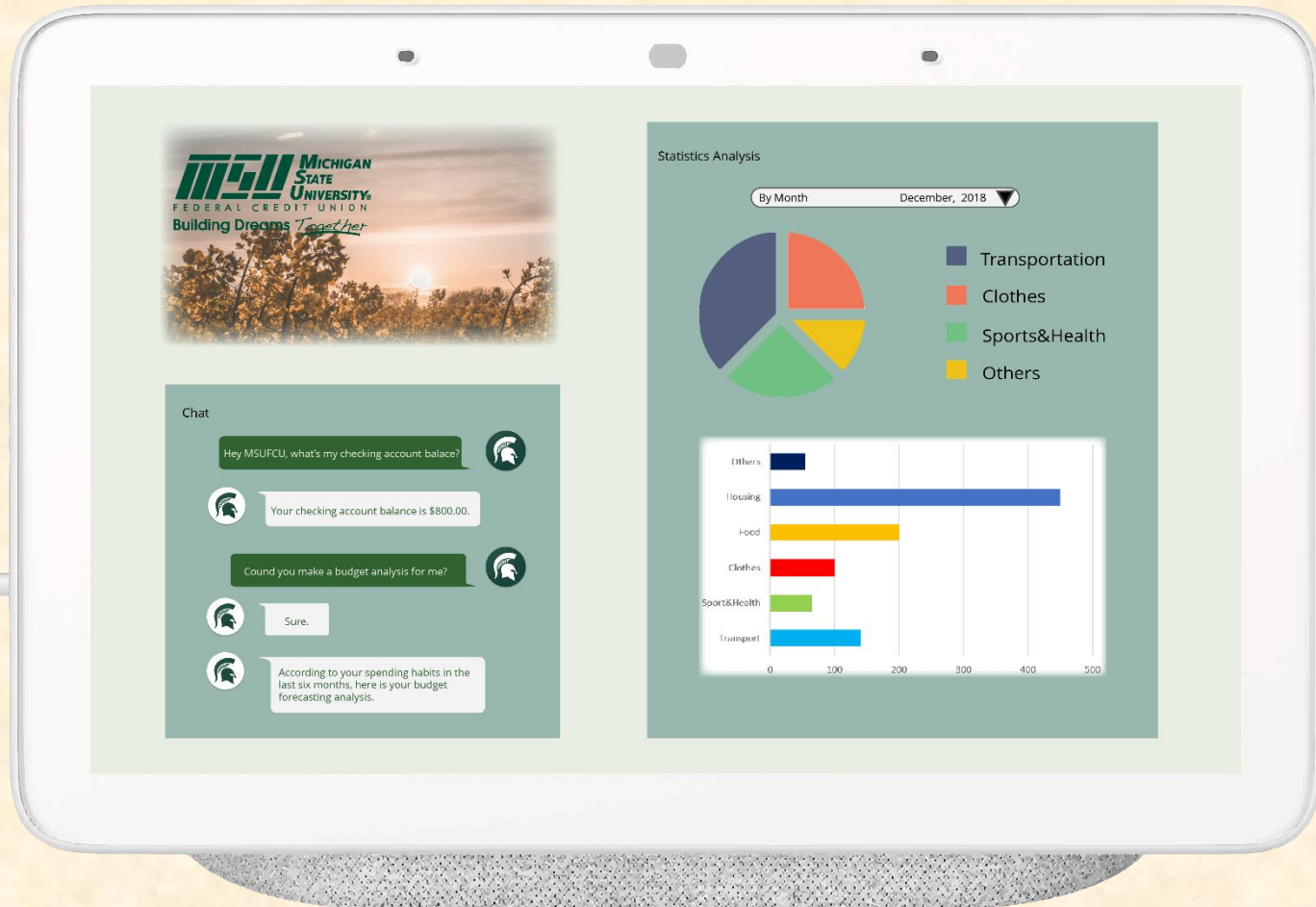Could you make a budget analysis for me?
User

Sure.
MSUFCU

According to your spending habits in the last six months, here is your budget forecasting analysis.
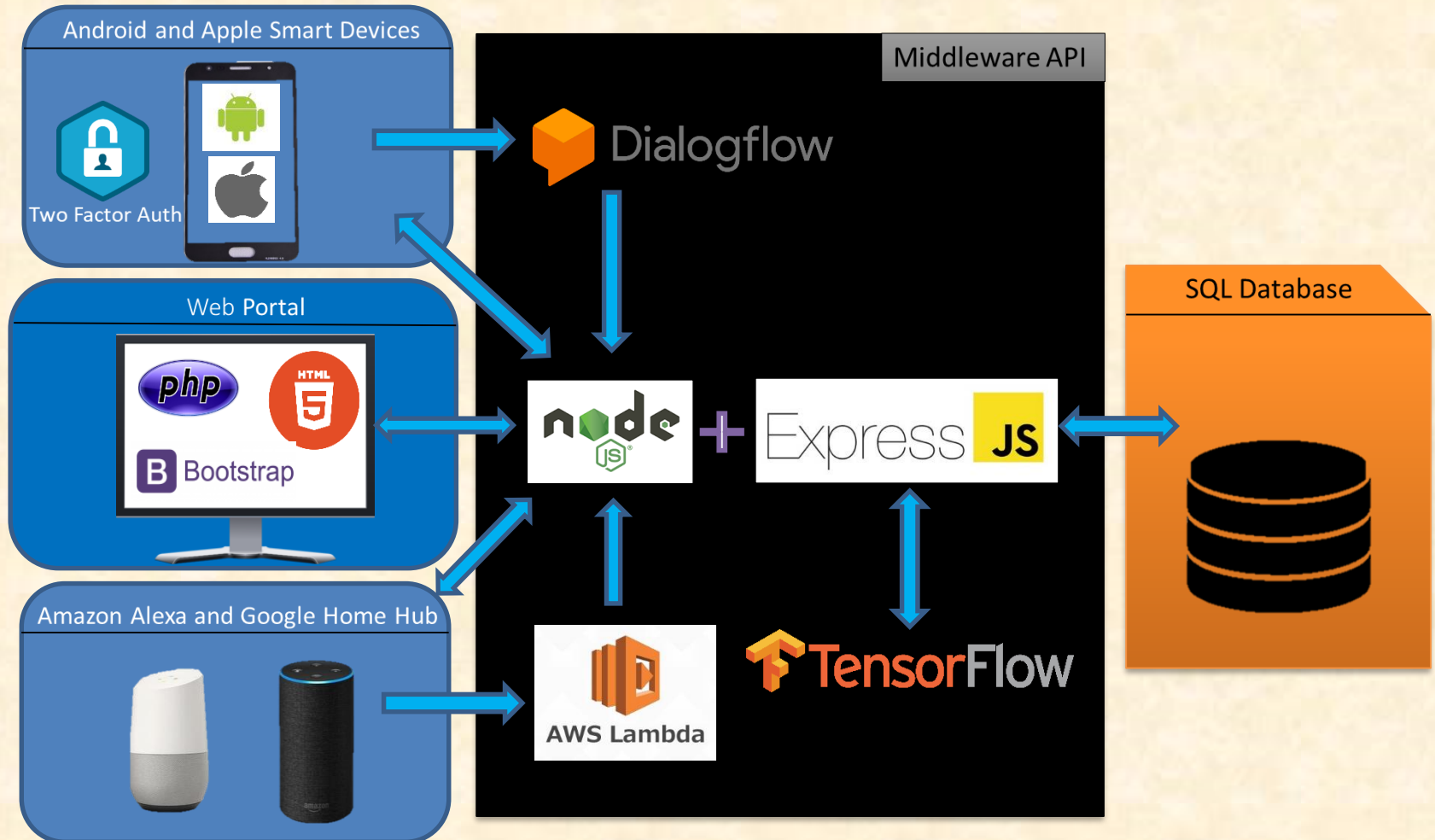MSUFCU

Screen Mockup: Smart Display

Technical Specifications

- ## Native Android and iOS Apps
  - iOS app written in Swift using Xcode (no min SDK version)
  - Android app written in Java using Android Studio (SDK versions 22-28)

- ## Native Alexa Skill and Google Action
  - Alexa Skill written using Alexa Skills Kit
  - Google Action written using DialogFlow and Actions on Google

- ## Web Portal
  - Written with HTML5, CSS/Bootstrap and PHP in JetBrains PHPStorm

- ## API Layer
  - Written in Node.js using Visual Studio Code

- ## Machine Learning Program
  - Written in Python with libraries from Scikit-learn using Jupyter Notebook

System Architecture

System Components

- ## Hardware Platforms
  - CentOS server version 6.5
  - Amazon Echo and Echo Show
  - Google Home and Home Hub

- ## Software Platforms / Technologies
  - Android Studio with Java
  - Xcode with Swift
  - JetBrains PHPStorm for HTML5, CSS/Bootstrap, PHP
  - Visual Studio Code with Node.js
  - Jupyter Notebook with Python and Scikit-learn libraries

Risks

- ## Unfamiliarity with Hardware
  - Little experience using Alexa Show and Google Home
  - Mitigation: Consult customers that use these devices for feedback

- ## Consistent Interface Across Many Platforms
  - We want same look and feel no matter which platform is used
  - Mitigation: Use existing MSUFCU color and font scheme

- ## Two Different Natural Language Processors
  - No single natural language processor supports all platforms
  - Mitigation: Backend will be able to interface with both DialogFlow and AWS

- ## Data Not Labelled for Classification
  - No demographic identifiers in provided anonymized data
  - Mitigation: We will generate mock demographic data for proof of concept

Questions?