

MICHIGAN STATE

U N I V E R S I T Y

Project Plan

Dealership Simulator 2017

The Capstone Experience

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Spring 2016



*From Students...
...to Professionals*

Functional Specifications

- Mobile and Web App
 - Gameplay
 - Leaderboards
- Admin Tools

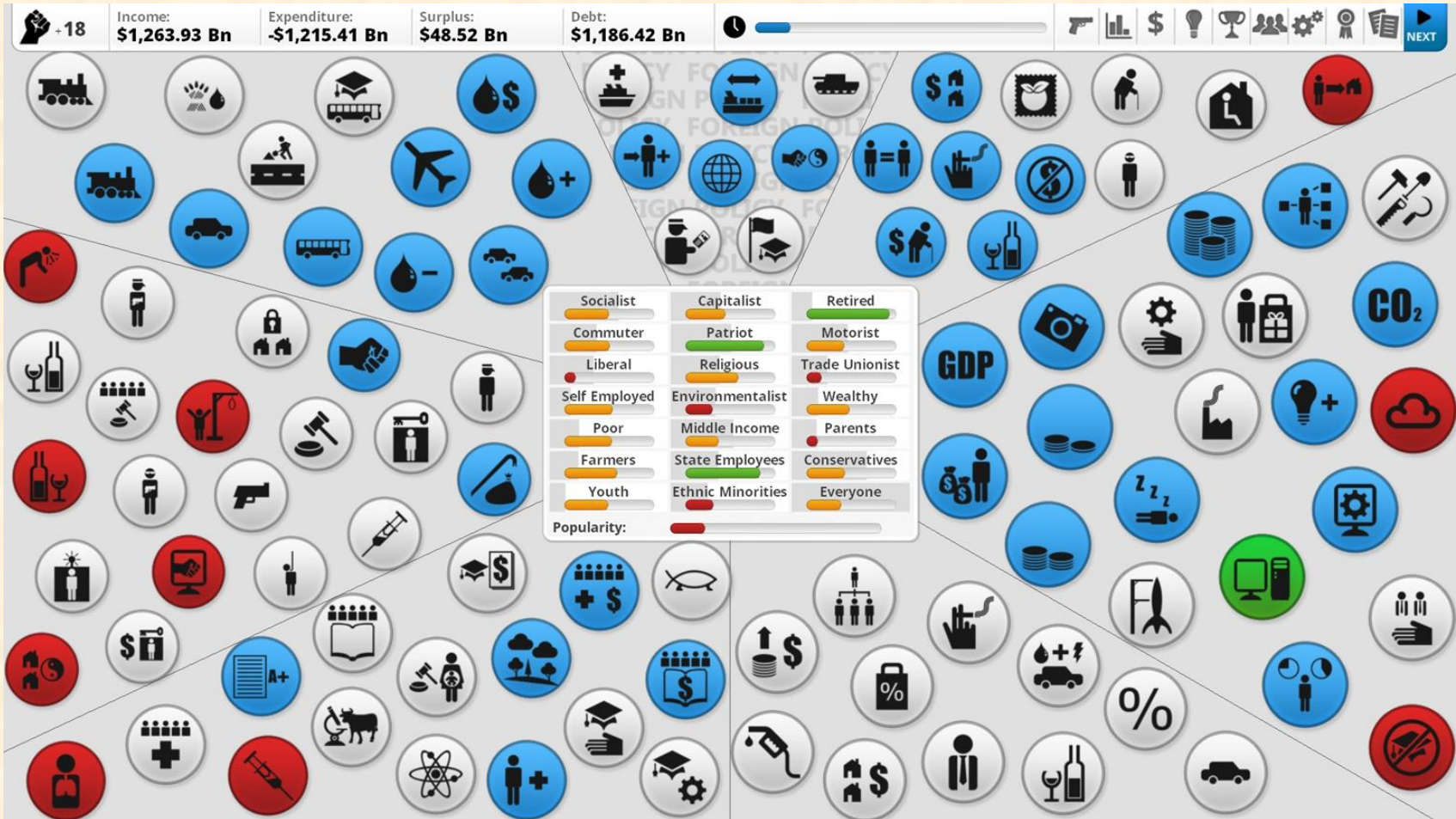


Design Specifications

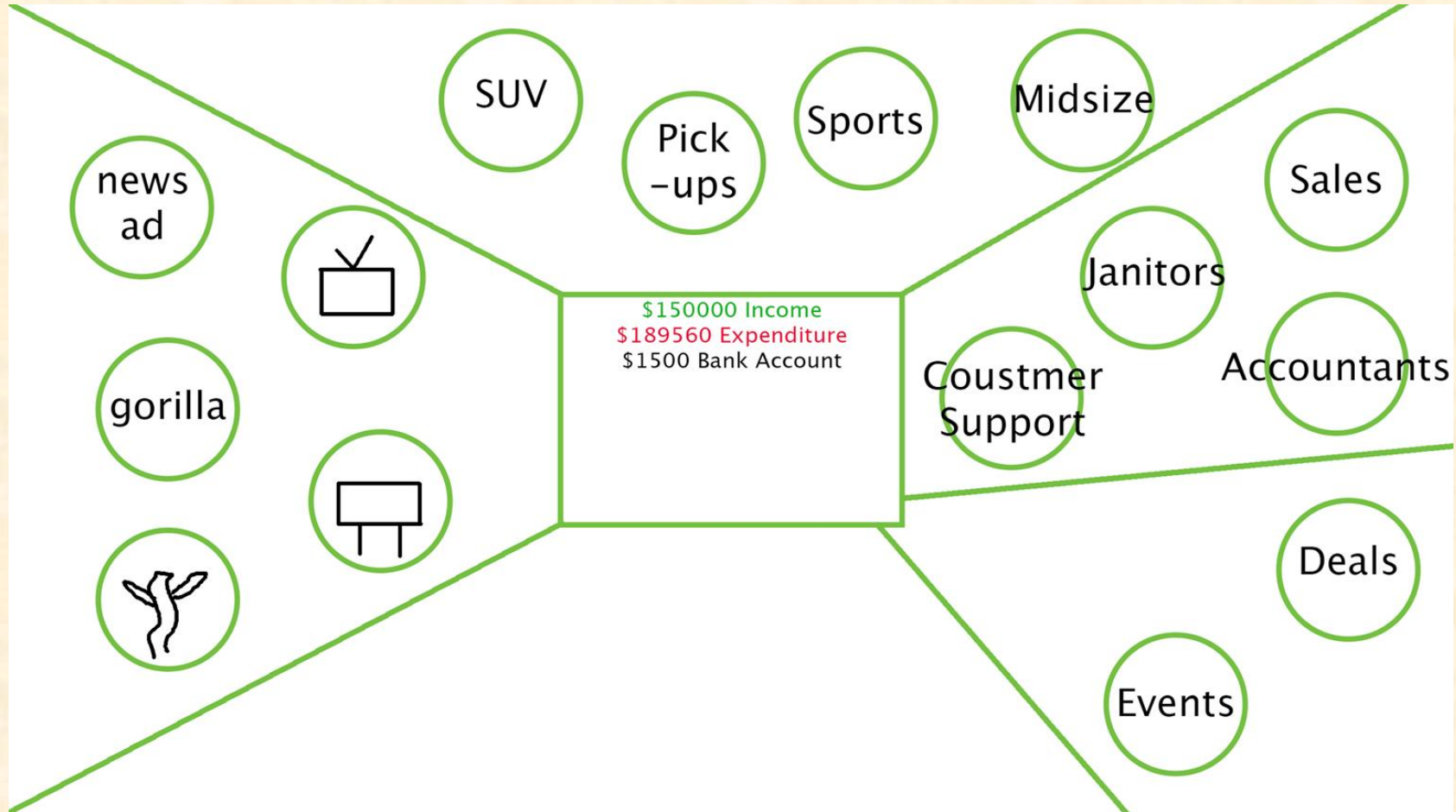
- “Nearest Neighbor” Algorithm
 - Uses **REAL** data
 - Indicates where to get game values from
- KPI data visualization
- Resource management
 - What the player can interact with
- Internal company app
 - Modular structure → admin tools, config files, etc.



Screen Mockup: Democracy 3



Screen Mockup: Resources Design



Screen Mockup: Democracy 3



Screen Mockup: Data Visualization



UI/UX Design

- Paper prototyping
 - Developing framework in Unity in parallel
- Still needs more consideration:
 - Highscores
 - Resource management menu
 - Admin tools
- Gameplay development
 - What the player does during “down-time”



Technical Specifications

- Unity3D game engine
- Unity asset server
- PHP and SQL
- 3D and 2D Art
 - Maya 2017
 - Adobe Photoshop & Illustrator
 - Unity asset store

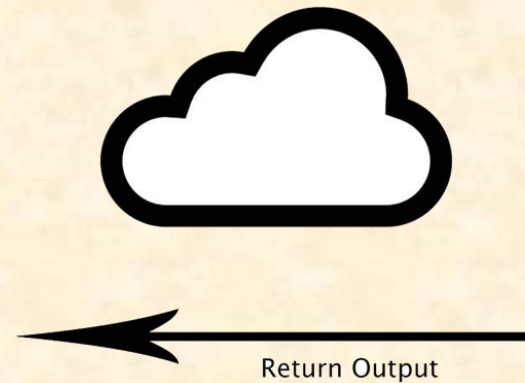
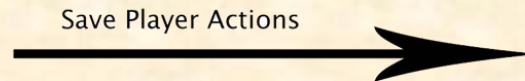


System Architecture



WebGL and Mobile App:

The logo for the client application, featuring the Unity logo (a white cube with a black outline) and the word "unity" in a bold, lowercase sans-serif font. Below this is the "WebGL™" logo in a red, stylized font. At the bottom, there are three circular icons representing the Apple, Windows, and Android operating systems.



Server:

The server stack logo, featuring the Windows Server 2012 logo (a blue square with a white window pattern), the Apache Software Foundation logo (a red feather), the MySQL logo (a blue fish), and the Mercury/32 logo (a blue square with red wavy lines).

System Components

- Hardware Platforms
 - WebGL
 - Android
 - iOS
 - Windows Phone?
- Software Platforms / Technologies
 - Unity3D
 - Window Server 2012
 - XAMPP
 - Maya 2017
 - Adobe Photoshop and Illustrator



Testing

- **Unity Test tools**
 - Unit Tests
 - Implementation Tests
- **Playtesting**
 - Within Team
 - With Client

Risks

- Uncertainty with implementing Nearest Neighbor Algorithm correctly
 - Estimating dealership performance based around the input given, to perform closely to another dealership with similar KPIs
 - Mitigation through learning the data and prototyping often to get the right feel with working around the data
- Difficulty understanding the data that is given to us
 - The data set that they are supplying us with is very large, and contains many different instances of KPIs
 - Work with client to understand the data set
- User Experience
 - All users, even those that do not play video games often, must understand how to play the game easily, while still getting useful information from it
 - Create a tutorial to explain features of the game and make intuitive UI that is self explanatory
- Security
 - We do not have much experience as a group working with databases or sensitive data
 - Use online documentation and tutorials, and consult with clients to ensure security

