MS688

Project: Brainstorming and Proposal

Farm 2 Table

# Description

*Farm 2 Table* is a location enabled, farming themed idle game for Android. The game uses tiered resource generation and an inventory system to add complexity to the standard idle game formula, in addition to requiring the player to find seeds for crop generation though real-world navigation. Like essentially all idle games, there is a prestige mechanic to reset progress and gain boosts in the next iteration of gameplay.

# Features

## Tiered Resource System

The goal of the game is to make money by selling products, but its more complicated than that. All products go through ‘Factories’ in order to provide any function. ‘Producers’ are factories that consume no resources, but over time will generate base-tier products. ‘Converters’ are factories that consume between 1 and 3 products, and over time generate higher-tier products. ‘Sellers’ are factories that consume one product, and over time generate an amount of money based on the consumed product.

Producer factories are always created by finding seeds using location services, they cannot be purchased. All producer factories generate a single product per cycle with time-per-cycle being based on the type and relative value of the output product.

Converter factories are always purchased through the Build menu, with their price increasing exponentially as more of the same type are purchased. Before purchase, the user selects a configuration/recipe which controls the input, output, and time-per-cycle of the converter factory. Each configuration specifies between 1 and 3 input products, a single output product, and a time-per-cycle based on the relative value of the output product. Converter factory configurations always provide an increase in value between the input and output products.

Seller factories are always purchased through the Build menu, with their price increasing exponentially as more of the same type are purchased. Seller factories only have one input product and always output an amount of money based on the value of the input product. Seller factories automatically control their own input product type, dynamically selecting the highest value products that are not currently in demand by any other factory.

## Location Service

Location services are used to position the player onto a grid based on their current coordinates. The grid holds data about which seeds are available in each cell, as well as the fertility of the cell and how recently any player has foraged from that cell. When a player forages from a cell, they gain a certain amount of seeds, and then that cell as marked as drained for an amount of time.

## Cross-Device Support

Google Firebase is going to be used for authentication as well as storage. When first installing and running the game, the player will be automatically registered with an anonymous account which will be able to be linked to various additional accounts and/or an email. Later if a player installs the game on a different device, or if the game is ported to different platforms, the player will be able to login using any of the credentials for those linked accounts.

## [Stretch] *Gameplay Via Widget*

*If time permits, basic functionality of the game will be implemented as a home screen widget. The most likely functionality for this widget would be the forage mechanic, allowing a player to view their current position’s fertility and regrowth percent, and allowing them to forage without fully opening the app.*

# External Dependencies

## Google Firebase

### Authentication

Firebase Authentication will be used to create anonymous accounts and to link existing user accounts to their anonymous account, as well as provide access to the Firestore to access state data.

### Cloud Firestore

Firebase Firestore will be used to store user data as well as sync map fertility data across all clients in real-time, so that one player foraging from a region will affect that region for other players as well. It will also store factory and configuration data, so the addition of new crop types, factory types, and factory configurations will not necessitate a new client build unless fundamental changes are required.

### Cloud Storage

Firebase Storage will be used to host the icons for each crop and factory type, as well as other static data required by the client.

[Stretch] *Client background images and other images are hosted in cloud storage, so that the app can receive seasonal visual updates without the necessity of a new client build.*

### Cloud Messaging

Firebase Messaging will be used to send broad and targeted notifications to players when interesting events happen in game, such as when a new crop is added or if there is an important update to the game. [Stretch] *Firebase Functions use Messaging to notify players if they unlock some new content while offline.*

# Screen Mockups

Interactive: <https://invis.io/B8Y178U6Q3J>

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| --- | --- |
|  | **Splash**   * Start page of the application. * Downloads game assets and configurations from Firestore. * Logs into Firebase using saved credentials OR logs into anonymous account. * Downloads user data based on account. * SPG button transitions to Credits. * Play button transitions to Main / Gameplay. * Cog button transitions to Settings. |
|  | **Settings**   * Displays gameplay settings, like:   + Update tick frequency (default: 30)   + Sound toggles (default: on)   + GPS granularity (default: rough) * Displays login options, like:   + Link Google account   + Link FB account   + Change current account * Back button transitions back to previous screen (either Main / Gameplay OR Splash) |
|  | **Credits**   * Displays game credits. * Back button transitions to Splash |
|  | **Main / Gameplay**   * Displays existing factories.   + Each factory shows input, output, progress, and remaining time until production.   + [Stretch] Clicking a factory shows current flow rate for input/output items.   + [Stretch] Clicking an item shows all known recipes and buildings associated with that item. * Plant button transitions to Forage. * Hammer button transitions to Build. * Bag button transitions to Inventory. * Cog button transitions to Settings. |
|  | **Forage**   * Displays current GPS coordinates based on settings. * Displays current region fertility (High/Medium/Low) based on climate data.   + Fertility controls regrowth rate and available seed drops. * [Stretch] Background displays a modified map with each region chunked up and colorized based on fertility/regrowth. * Display regrowth percent and timer.   + Gathering rewards will be reduced if region is not fully regrown. * Gather button calculates rewards, resets regrowth, and updates database with latest forage time.   + Gather button is disabled if regrowth rate is too low. * Back button transitions to Main / Gameplay. |
|  | **Build**   * Displays currently available buildings and cost.   + New buildings are unlocked when new items enter the player’s inventory.   + Building costs increase with each purchase. * [Stretch] Clicking a building shows all known recipes and items associated with the building. * Buy button displays available configurations, selecting a configuration confirms purchase.   + Configurations control the input, output, and time of the building, but not the cost. * Back button transitions to Main / Gameplay. |
|  | **Inventory**   * Displays current inventory as well as well as resource flow based on currently owned factories. * [Stretch] Clicking an item shows all known recipes and buildings associated with the item. * Back button transitions to Main / Gameplay. |

# Comparable Products

## Landlord Tycoon

Landlord Tycoon is a geolocation game with idle elements where players invest in real-world properties by visiting them. Players idly gain and lose money based on their investments. While the main conceit of the game is very different from Farm 2 Table, the core concept of income sources being derived from real-world locations is similar.

<https://play.google.com/store/apps/details?id=com.landlordgame.tycoon>

Idle Farm Game (and countless others)

Idle Farm Game is a standard idle game with a farm theme where players plant crops and then repeatedly click to harvest them for coins, use those coins to upgrade the plots, and then prestige to gain permanent boosts. While the theme is similar to that of Farm 2 Table, the addition of tiered resources and resource converters is a major differentiator.

<https://play.google.com/store/apps/details?id=com.profanestudios.idlefarmgame>

# References

Idle Games, Everything You Need to Know! (n.d.). Retrieved July 11, 2020, from <https://mobilefreetoplay.com/idle-games-everything-you-need-to-know/>

Pecorella, A. (2018, July 10). The Math of Idle Games, Part 1. Retrieved July 11, 2020, from <https://blog.kongregate.com/the-math-of-idle-games-part-i/>