

Report

Egg, Inc.

Vision on UX/UI

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1. Introduction

Egg, Inc. by Auxbrain Inc. is a “clicking” mobile game with the final purpose of understanding the secret of the universe, which will be unlocked in the chicken egg. To do so, the player has to sell as many eggs as they can, and then hatch chickens, build hen houses, hire drivers, and commission research to evolve the farm are the main tasks. In addition to choosing investments wisely, it is asked to balance your resources to ensure a smooth-running and efficient egg farm, with also the help of some boosts. There are dozens of missions to complete, and a "nested" Prestige system has the game always feeling new (Wikipedia, n.d.).

2. Analyzing the game

Considering Nielsen and Molich’s 10 user interface design guidelines, also known as “usability heuristic”, I am going to explain the problems I found in Egg, Inc. Heuristic evaluation is a problem-solving method used to analyze the usability issues in the UI in the first stages of the design process, along with user testing (Uxable, 2020).

The most noticeable problem in the game is the cognitive load: there are too many unorganized elements in the same space that cause confusion and a feeling of overwhelming. Starting from the bottom of the Heuristic rules, we can cite rule number 8 “Aesthetic and minimalistic design”, as considered the worst issue in Egg Inc. Creating an interface, there should be only essential information avoiding unnecessary visual elements, to not overwhelm and distract users from the main tasks. Any information, for instance, could deviate attention from the most essential elements.

Continuing in order, rule number 1 “Visibility of system status”, says that as a designer, you should keep users informed about the results of their interactions with the system. This is important to let them learn step by step from their actions, having an input and an output. There were a few lacks in Egg Inc. regarding this rule, if the main problem is the “too many elements”, in some cases the interface wasn’t showing the current system status in an explicative way.

Other issues found, are connected to rule number 2 “Match between system and the real world”: not always the system was speaking the user’s language or following some conventions they are used to. This led to elements not too familiar to the players for their shapes, names, or positions on the screen. Indeed, it is important to use icons and symbols from the real world so the user can instantly recognize them and understand their tasks.

Talking about the general aesthetic and art style, the game has troubles with rule number 4 “Consistency and standard”, not keeping the same standards for all the windows and buttons, or for the illustrations not matching with each other. Other than that, there isn’t a clear subdivision of elements into categories, which combined with the different art styles, creates a lot of confusion for the users.

The sensation of confusion is also caused by the lack of visibility of some actionable elements, as rule number 6 “Recognition rather than recall” says, users should remember all the actions they can

do and the functions of the system, but this might be impossible if they can't notice specific buttons or can't easily access to what they are looking for. This also brings cognitive overload and stress.

The last rule I think it is important to cite is number 10 "Help and documentation", specifically talking about the menu function. There is a lot of documentation and useful resources, but it is very difficult to search for them because of the layout and stylistic choices.

Regarding rule number 3, 5, 7, and 9 I didn't find specific issues. In the next paragraph, I will go deeper into explaining the UI problems in any individual selection adding the number of Heuristic rules I used to analyze them (Guimaraes, et al., 2022).

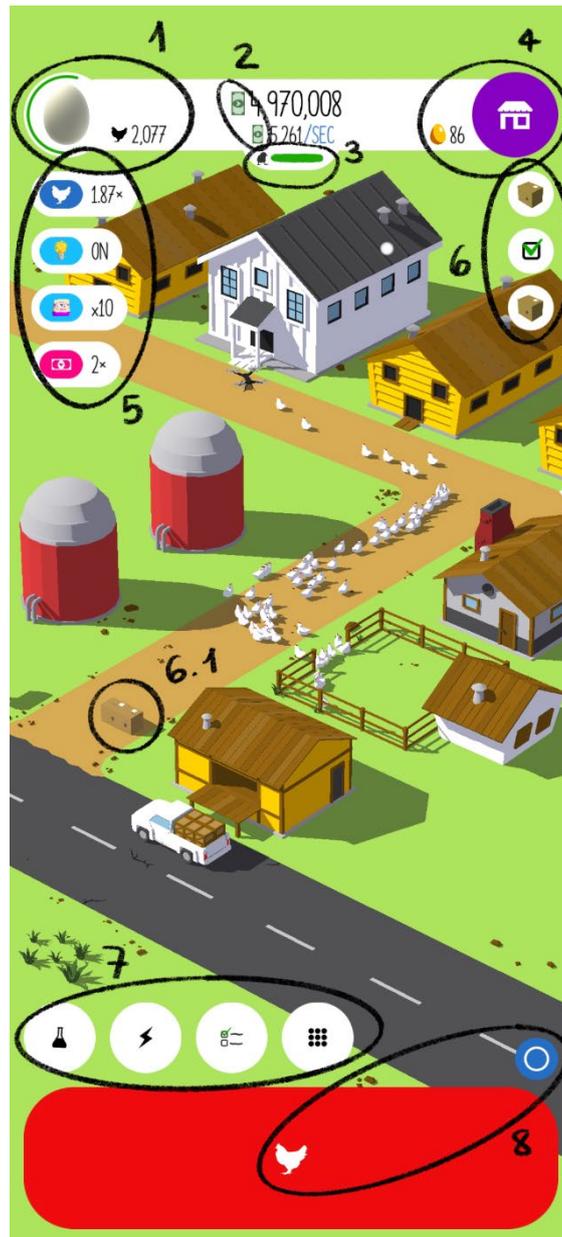
3. User requirements

I identified the three top tasks, and an additional one, a player wants to do by playing, with the relative problems to solve:

3.1. First task: hatch chickens and do actions as fast as possible.

The game is all about clicking the big button on the home screen and creating as many hens as possible while buying research or boosts. From what we see in the home, the overall layout causes an excessive cognitive load because of all the pop-ups, the art style of the icons is very inconsistent not following any standard, there are too many colors, and some components are unnecessarily repeated or placed randomly on the screen, because of a bad category subdivision.

I divided the UI into sections that will be individually explained below:



Home screen

1: The first button on the left side is an egg which indicates the current type of egg hens are making, and on its right side the amount of hens the player has created. The art style is completely different and not consistent (rule 4): the egg is realistic, while the chicken is the opposite, only a black figure. Also, the progressing circle around the egg starts from the bottom, but people are used to seeing similar features on websites, apps, or other games, starting from the top. Consequentially, it is not a familiar way to represent it (rule 2). Furthermore, beginning from the bottom, it is not very visible.

2: In the center of the white bar, there are the money value and the money value for seconds. The icon to represent money is used two times, and this brings to repetitive information, and cognitive overload: only one should be placed avoiding unnecessary visual elements (rule 8). Also, the icons are now flat, without any shadows, as opposed to the general style.

3: This bar goes down the more the player presses the red button on the bottom, it is about the hatchery capacity. When it is empty, they need to wait some seconds to be refilled. The problem is that the bar is situated too close to the money value, and because of the Gestalt rule of proximity we could make the error of considering them to belong to the same group, even though it is connected to the red big button. It is also too small to be seen, so the status of the bar is hardly visible (rule 1). In addition, again the icon is only a black figure, but compared to the chicken icon they are not in the same perspective (one is profile, the other $\frac{3}{4}$).

4: These symbols come from the same category (the golden eggs value on the left, and on the right the button which indicates where the player can buy them), but because of the colors and the art style not matching (Gestalt rule of similarity), and the fact that they are not separated from the egg and the money value (Gestalt rule of proximity), it is not understandable. There is not a good use of “white space”.

5: On the lateral sides of the screen there is a clear information overload, without any subdivision of the icons into categories. For example, we can see boosts, events, and chicken count all together. In the game, all these icons are also shaking and pulsing, which can cause the player to feel distracted from the main purpose, and nervous because overwhelmed by all these visual elements (rule 8). Additionally, the art style of the icons is very inconsistent even though they are situated in the same section (Gestalt rule of similarity).

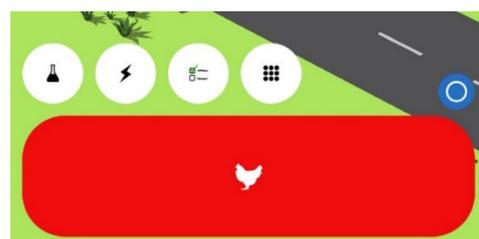
6: The problems in this section are similar to the ones from point number 5: every time a package, gift, newspaper arrives, or a challenge is complete, a pop-up appears, and the player can get rid of those by clicking on them. There is also a repetition problem because the same objects will also appear on the ground of the farm, but those are not clickable. So, there are unnecessary and repeated elements that could be easily avoided (rule 8).

7: In this section, we can find in order the research, boosts, challenges, and menu buttons. Overall, the icons are inconsistent with the general art style, and they are also too small to be noticed as they should be, considering those are the main features of the game. They also seem an obstacle for the most important task in the game, clicking the big red button, because too close to it: they could pop up by mistake while the player is focusing clicking as fast as they can, not paying attention.

8: The red button is the main task of the game because by clicking that the player creates chickens. The blue button permits resizing the red one, but it is an additional action to ask the player, who wants only to click fast. In addition, all the icons can change position making the layout more confusional. Additionally, the icon of the chicken is too small and not very balanced with the available space. The colors do not match (the big button is red, while the resize button is blue).



Resizing button



Resizing button when pressed

3.2 Second task: have challenges to complete, receive rewards, and climb the ranks.

As a first impression, the challenges section is very simple:



Challenges menu

1: When a window pops up, the other icons are still visible and clickable, but there is no reason to keep them active if the player needs to focus on the action they want to do. For instance, having so many options available could distract and confuse the user, in addition to being an unnecessary visual overload (rule 8).

2: As for the egg icon on the top, the progress circle starts from the bottom, and it usually starts from the top (rule 2).

3: In this section, the challenge is described but we only know what the results should be, for example have 5000 chickens, but it is not indicated how many chickens were already created or how many remain to be created. For this reason, there is a lack regarding the visibility of the system status (rule 1): the player can only see the progress circle increase but it is not enough because it doesn't indicate precise values.

4: This is the reward the player will get for completing the challenge. It is not very visible because of the grey background and its size.

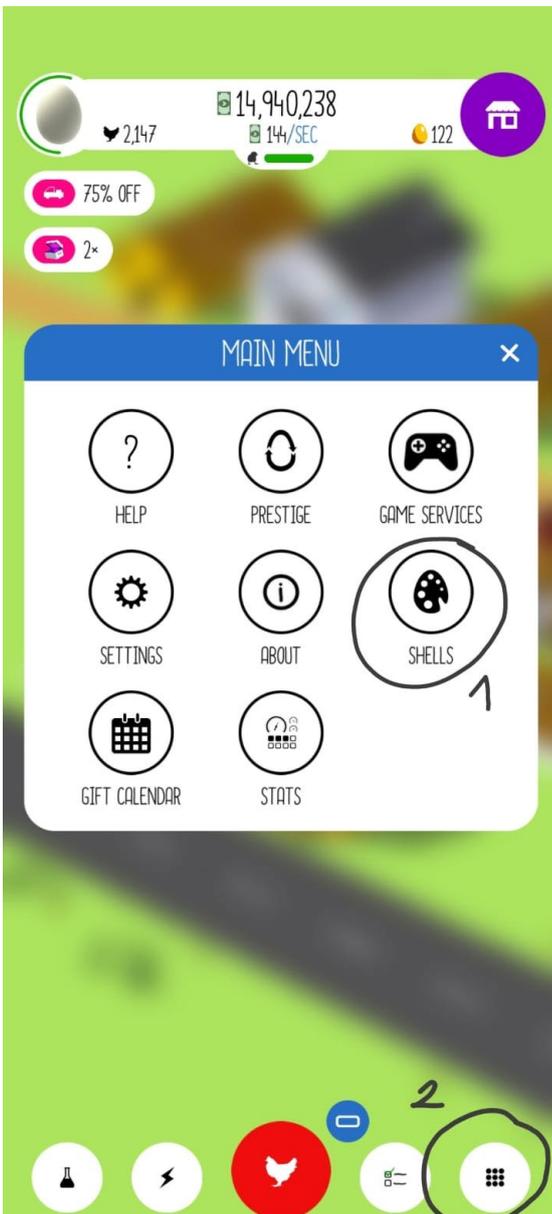
It is not possible to see what you achieved, there is only a section in the menu called "play game services" but it is blank (screenshot below). For this reason, the challenges seem to be a little useless and not so engaging if the player can't see and show their results, or compete with other players in a ranking system. This could bring the more competitive users to play the game with less interest because there is no aim to achieve.



Play game services window, from menu

3.3 Third task: easy access to additional functions.

The function for the farm customization is very detailed and complete, very enjoyable for the player, but the real problem is access to it: clicking on the menu button we can see there are too many components and the customization icon is hard to find in it. Considering rule number 6, there is a cognitive overload and the user will have difficulty remembering all the icons in the menu section: the maximum number of elements a person can remember is 7, and this menu has 8. Not only the number is a problem, but also the organization of the icons in the space, in this 3x3 grid, randomly placed without a logic or a category subdivision. For this reason, even in the scenario the user needs to look for documentation or help, they are not easy to search (rule 10), and they want to be able to find what they are looking for fast, not wasting time.



Menu window

1: An additional problem, is for sure the name for the customization feature, because "shells" is not an intuitive or commonly used word to indicate the function to modify the aesthetic of a game. Indeed, that naming "doesn't speak the users' language" (rule 2) because not familiar, causing confusion.

2: Talking about the menu button itself, it is usually situated in the upper area of the screen, and not on the bottom like in this case, again it is not placed in a familiar position (rule 2). Additionally, it should not stay in the same section as the other buttons, which for instance are main actions not related to the menu.

3.4. Additional task: earn money selling eggs.

In order to do this task, the player needs to hire and upgrade their vehicles. The biggest problem I found with this task was not being able to identify where to hire vehicles, because it was not indicated anywhere, and there wasn't any button to click. Connecting to the first task, the player wants to be fast doing an action, so this is an obvious problem because it is not intuitive and it wastes time finding out where to click.



Shipping depot building

I first tried clicking the truck, because it was the most intuitive thing to do if I wanted to hire another one, unfortunately, it only honked. Using a similar shape to the real world in this case didn't work, because it was the wrong one (rule 2). The player needs to click the little building, but nothing reminds it of a shipping depot: no sign indicates it, and also the drawing of the building itself doesn't suggest what it is in reality (rule 2). The element that should be pressed is not visible to the player (rule 6).

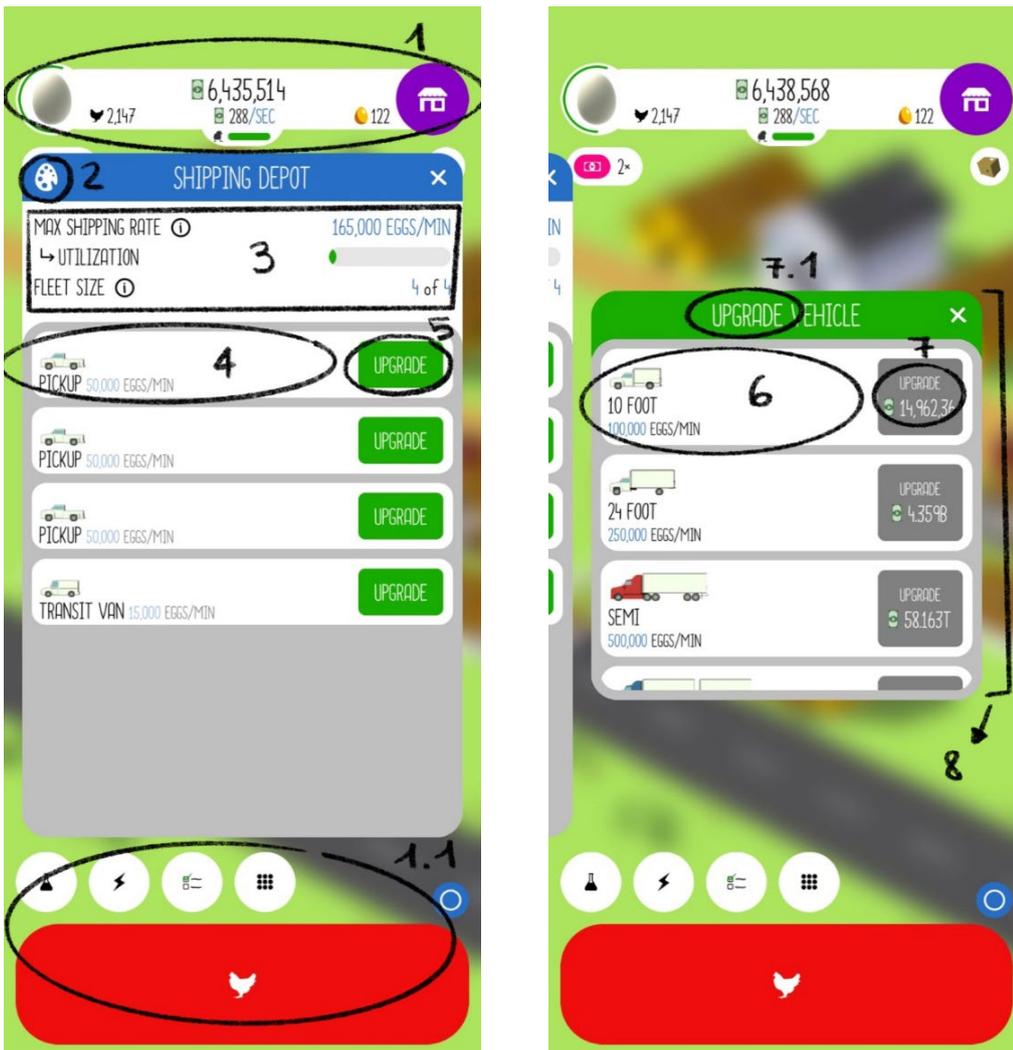


Research building

Comparing this feature with the research building, we can notice it is also not very noticeable, and the only object that commonly refers to the category of "research" is the little telescope on the roof (rule 2). However, to buy research there is also a clickable button on the main screen that shows the same window when pressing the building. Accordingly, it is not a big problem if the player can't find the research building, because they can always press the button, on the contrary, that is not possible when they have to hire vehicles.

Also the other buildings are clickable, to buy hen houses or grain silos, but those are easily recognizable for their function because of their realistic design.

Touching the shipping depot building, it is possible to open the following windows, which I will use as an example of a bad layout I saw in many others in the game:



Shipping depot windows

1: As already explained for the second task (challenges), all the icons are still active when a window is open. In this case, it is even worse because of the size of the window, not leaving enough white space between itself and the other icons that should be in the background, causing cognitive overload (rule 8).

2: This icon represents the possibility of customizing this specific building, and it is very nice for the player to have the choice to customize singular elements without going to the general menu.

3: The overall text with the shipping values is not well placed. Looking at the Gestalt rule of proximity and similarity, we could consider a first section of text on the left and another one on the right. However, they should not be separated because every line of text on the left relates to one value on the right, even if we don't perceive it like that.

4: The layout for the description of the vehicle doesn't follow the standard of the other windows (rule 4), for example the challenges. The image and text are the same sizes and placed in the same position, while there is a bad use of all the space left on the right side.

5: Pressing the button, a window opens to the specifics of the vehicle selected.

6: This section has the same problems as point number 4.

7: We could notice the word “upgrade” is repeated many times, in the window title and in the button. It is not necessary to write the same things multiple times, on the contrary, it becomes more confusing and overwhelming for the player who prefers to look at fewer elements possible (rule 8).

8: As last thing last, comparing the two windows for the shipping depot they are not long the same, neither the buttons are the same size.

4. Design requirements

I noticed that many problems were present in more than one feature I analyzed and that re-styling based on a standard is the best way to keep a coherent style between icons, windows, and layouts. Below, I listed the design requirements that can solve the problems of each task.

Overall, the game should have:

- Intuitive layout to be fast understanding what and where to click
- Essential design and elements, only the necessary, to avoid cognitive overload
- Consistent art style and layouts, following system standards and conventions to match the farm background
- Visible actionable components
- Precise and organized divisions of icons into categories
- Use of familiar naming, positions, shapes, and symbols
- Easy navigation through the buttons, especially in the menu
- Clear system status and progress of the player’s interactions
- Introduction of competitions and ranking system to make the game challenging
- Clear documentation easy to search for

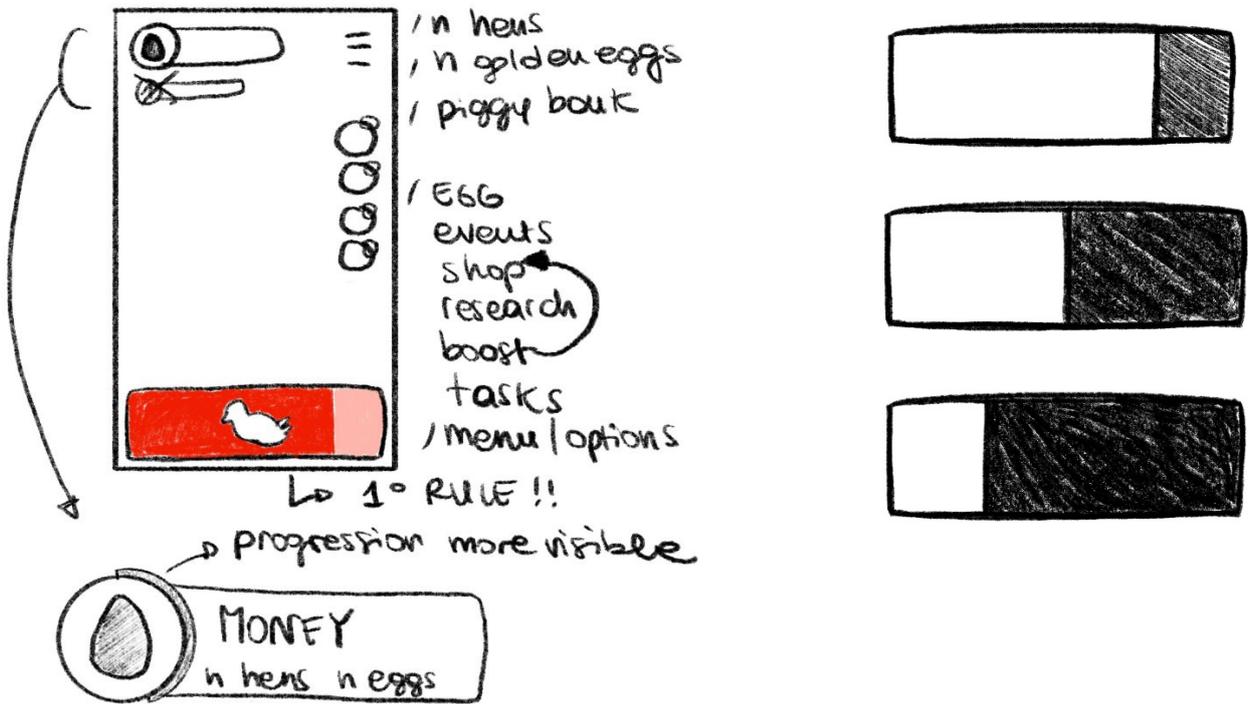
5. Sketches

Taking into consideration the paragraph above, I did some sketches of how I would apply the design requirements to solve the game problems.

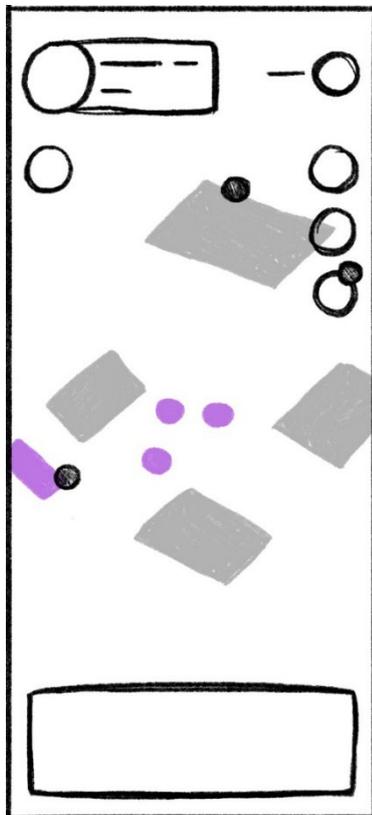
5.1 Home

I started with a quick sketch focusing on the action of the big button: when clicked, it will progressively decrease suggesting the hatchery capacity. When it is empty, the player will need to wait a few seconds to let it fill up again. With this function, I combined the main action of creating hens with the hatchery value (that originally was on the top of the screen hardly visible) to have two elements united in only one, and also make the status of the player’s actions more obvious. Looking

at the egg icon on the top, the progression circle is now noticeable and starts from the top, to recreate what users are used with.



Home first sketch (on the left), progression of the big button when clicked (on the right)



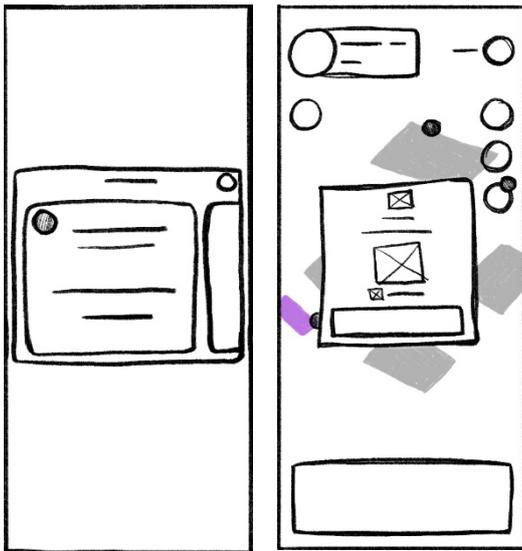
Home sketch

Then, I drew the layout better, making it clearer and organized, with only the essential components:

Eggs and money are placed on the top left, but are now separated from the golden eggs with their shop on the top right. The icons that were originally on the bottom, are subdivided as the menu on the left, and research, boosts, and challenges on the right. The menu is in the correct familiar position to users and divided from the other buttons.

The main button on the bottom is a little bigger to be clicked faster with more fingers at the same time. It is also less close to the edges of the screen because I noticed, that when playing fast, it could happen to quit the game by mistake because of touching external phone buttons.

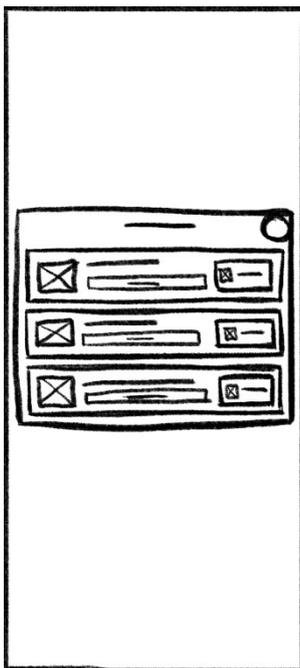
To cancel all the pop-ups, and to make the status of progression clear to the player, when something new is available in buildings, when there is a new event in the mailbox, or when the user completes a challenge, a notification icon will appear in the belonged category. This feature makes the layout more organized, and the clickable elements more visible.



I divided the elements into different colors to explain them better: the grey sections are buildings the player can press for example to buy houses, vehicles, grain silos, or conduct research. The purple ones are features I added instead of the pop-ups: on the left, the mailbox already present in the scene like an illustration is now a button that contains the current events (that were previously popping up on the left), while on the center the player can click to claim rewards from boxes and daily gifts, or read newspapers, all threw from the vehicles passing by.

Events window (on the left) and gift window (on the right) sketches

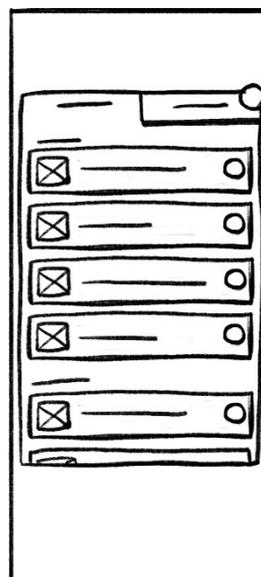
5.2 Challenges



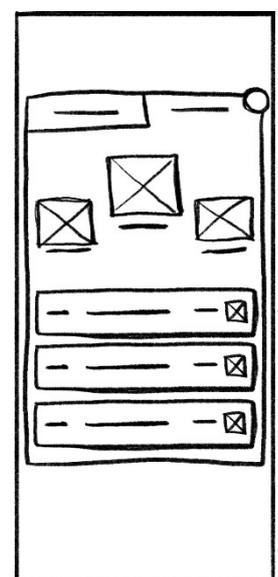
The biggest problem in this window was the lack of info regarding the status of the challenges. The solution I found is to get rid of the progressing circle, place an image instead, and put a bar under the challenge title that also shows the exact value of the challenge progression.

It is also important for the player to be able to see their achievements from those challenges, and maybe also share them on their social media or with friends. Having a section for personal rewards and goals creates a sense of accomplishment that makes the game more engaging to users. Other than that, also a ranking system could be another reason for the player to keep playing, because of an intrinsic motivation. The ranking serves as a tool for learning, receiving feedback, and self-improve while competing with other players (Fisher, 2019).

Challenges sketch

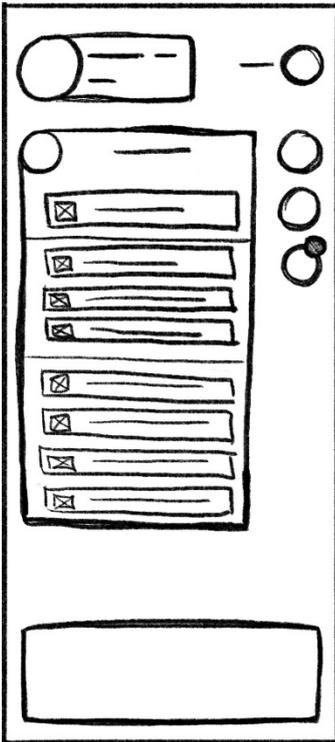


Achievements sketch



Rank sketch

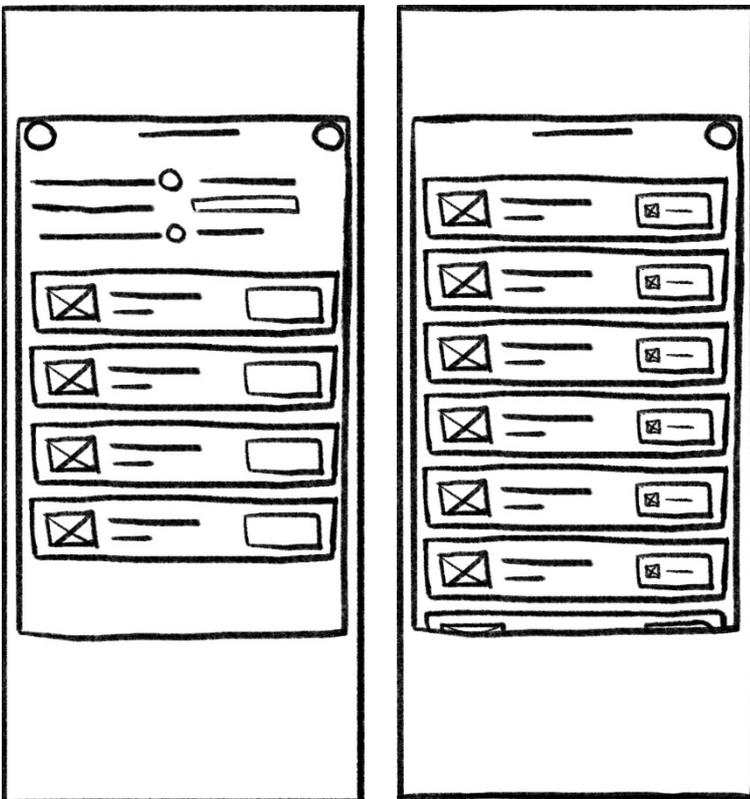
5.3 Menu



Since the fact the menu button is now positioned on the top left side, it was easier to organize it like a drop-down menu. The eight elements are now divided into categories and separated from a visual line: on the top part there will be the most “creative” functions like customize and the new buttons for “achievements”, while on the bottom the most technical ones as “help” or “stats”. This kind of layout is more accessible and makes the elements more visible, to find them faster.

Menu sketch

5.4 Shipping depot



This new layout for the shipping depot windows is cleaner because of the rearrangement of the text boxes and images. On the top part, the groups of text are aligned correctly making it more readable.

The sections where the type of vehicles are described are simpler and better distributed, following the same layout I used for the challenges and achievements, using it as a standard.

Shipping depot sketches

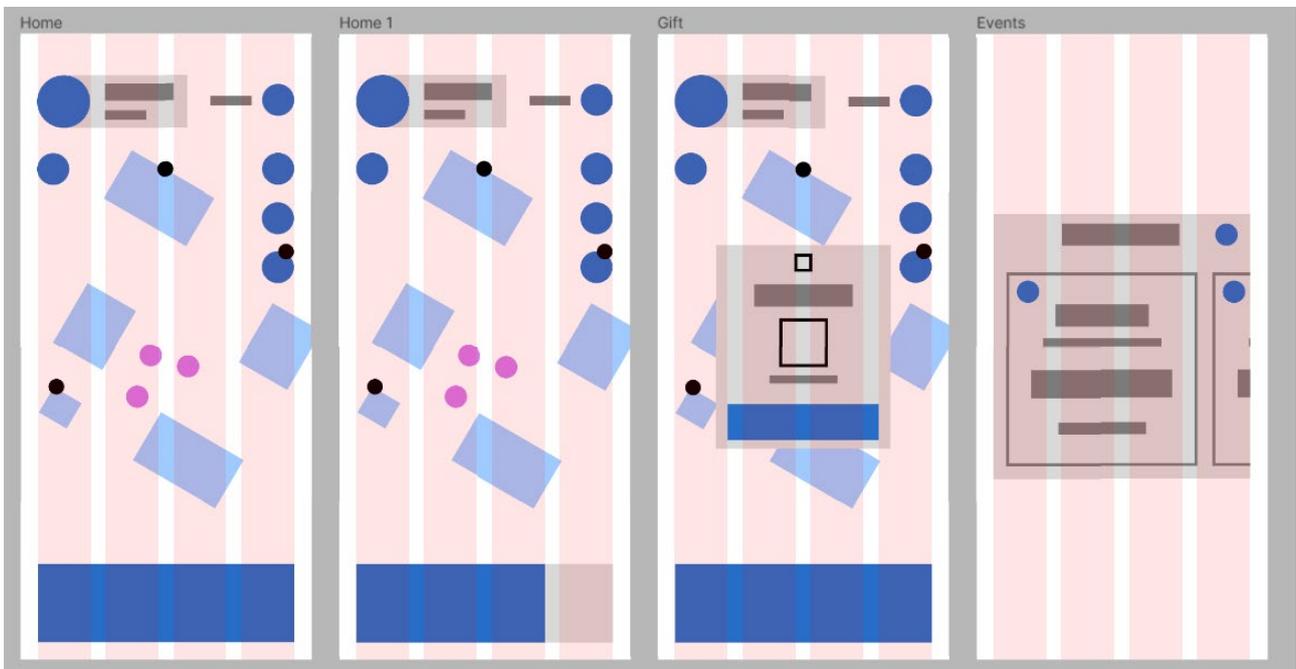
6. Low-fi

Following the sketches, I have then made a low-fi version of the interfaces. I created the objects by organizing them on a grid of four columns, to have a more precise layout and use always the same measures. The blue objects represent buttons and CTAs, while the grey rectangles are the space reserved for the texts. Images are illustrated with the square with the black outline.

The low-fi page is also available in the attached Figma file.

6.1 Home

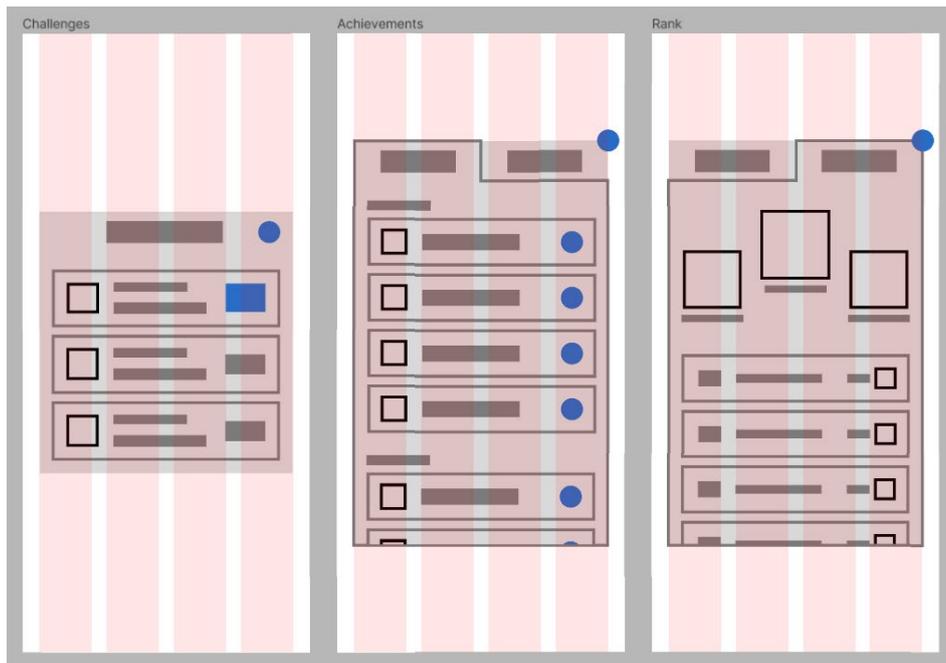
The first frame is the home screen, while the second one is referred to the main mechanic of the bar on the bottom decreasing when the button is clicked. The third is the window that pops up when clicking on a box or a gift on the ground, or a newspaper, and the fourth frame is the events window after clicking the mailbox on the screen.



Home low-fi

6.2 Challenges

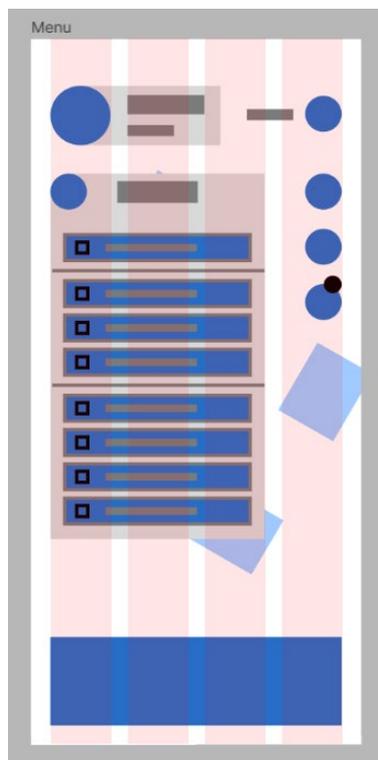
From the left, the windows for the challenges: the blue button will appear when the player completes a challenge and has to claim the reward (in the original game, there wasn't). "Achievements" and "rank" are frames that come from the achievements section in the menu button (go to 7.3), but are connected to the challenges mechanic.



Challenges and achievements low-fi

6.3 Menu

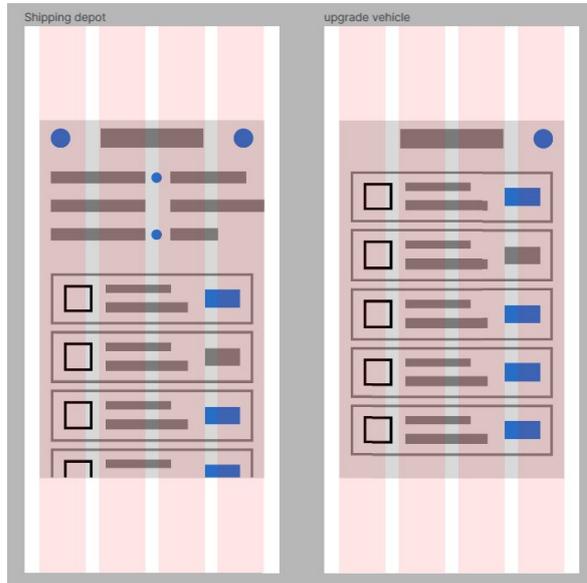
The menu is a button in the home screen that, if pressed, shows a drop-down window with all the additional game features.



Menu low-fi

6.4 Shipping depot

The first window will appear when the shipping depot building is clicked on the home screen.



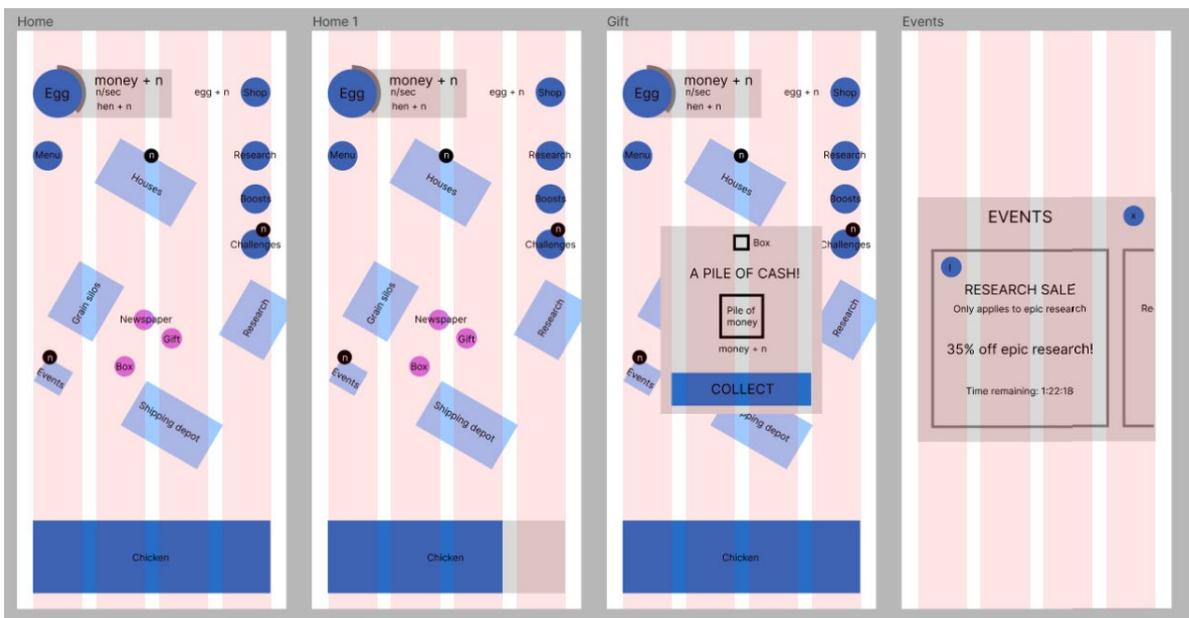
Shipping depot low-fi

7. Mid-fi

The mid-fi version is more detailed than the low-fi. For this reason, I added the text, the description of the images, and the buttons function.

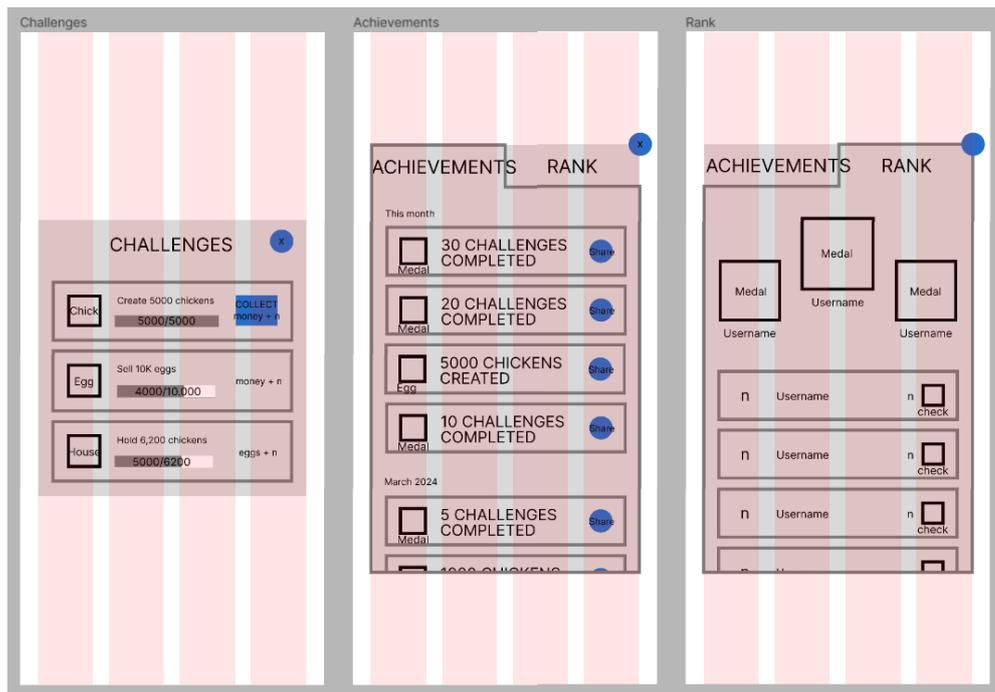
It will also be present in the Figma file.

7.1 Home



Home mid-fi

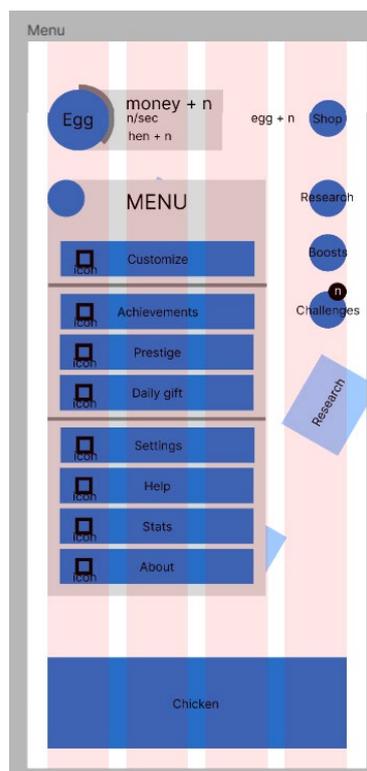
7.2 Challenges



Challenges and achievements mid-fi

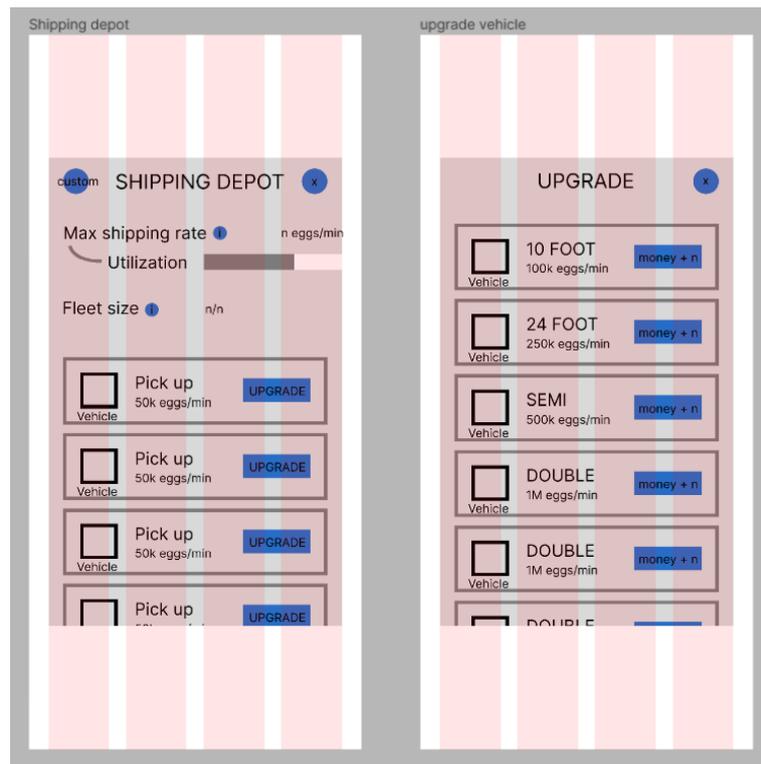
7.3 Menu

I changed the name from “shells” to “customize” because it is more intuitive to the users, and instead of “game system” (that was black) I put the new category for the achievements.



Menu mid-fi

7.4 Shipping depot



Shipping depot mid-fi

8. Hi-fi

In the final version, I adjusted the general aesthetic of the UI to let it match the illustrations on the background and the game art style. First thing first, I used colors to divide the functions into precise categories, to guide the player through an intuitive interface:

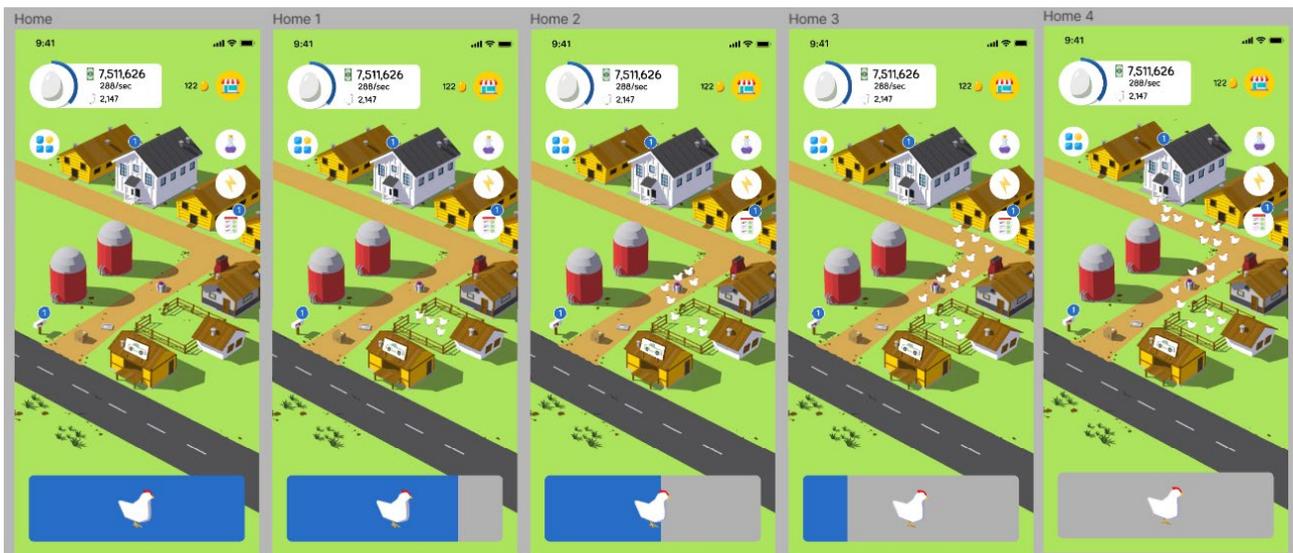
- Blue: CTAs and general windows, this is the main color. It was already used in the original game, but I made it more consistent.
- Yellow: everything related to the golden egg currency, for example, the shop button on the top right.
- Green: challenges section, I left it like it was but I applied it also to the achievements because they are connected categories.
- Orange: customization
- Purple: gifts and prestige. In the game, originally the shop and the gifts were purple but I don't see any correlation between them, so I keep the purple only for the gifts.
- Gray: unavailable buttons

The art style itself was very inconsistent: some objects were 3D, others 2D, and others with harsh shadows. For this reason, I decided to match the illustrations of the background and stick with only one style, using plain colors with basic shadows and lights. The icons and the symbols are still the same as the original ones, they are just restyled better.

Talking about the font used, it was very consistent but too flat, not suitable to be used on screens because it was very high, thin, and stretched, hardly readable. I wanted to stay in the same “funny” and rounded mood, so I chose a Google font called Sniglet. It is more visible because it is proportioned and thicker than the one used previously. Even though it was always the same weight, I gave hierarchy to the text underlining important information (like titles) using the main color.

8.1 Home

I created different frames to give an idea of what it will be the final product: clicking the big blue button, hens are created, and at the same time the hatchery capacity decreases.

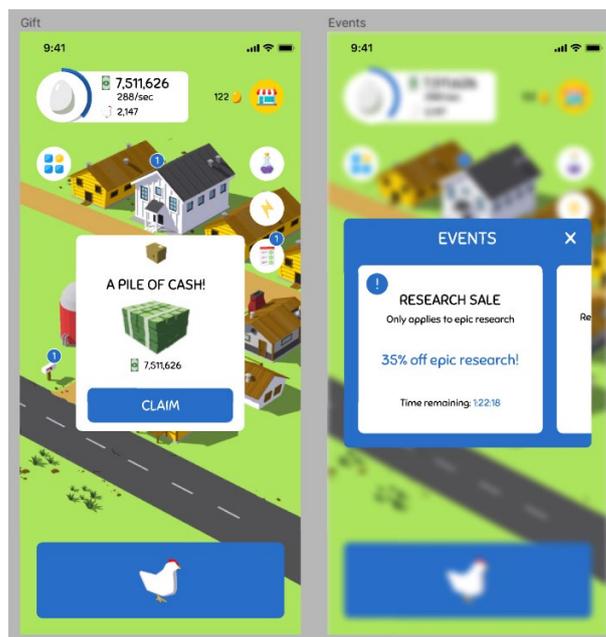


Home hi-fi, blue button interaction

It is also important to note that the shipping depot has now a sign with a vehicle illustration above it to indicate where the player has to click to buy vehicles. Then, the gift and the events window.



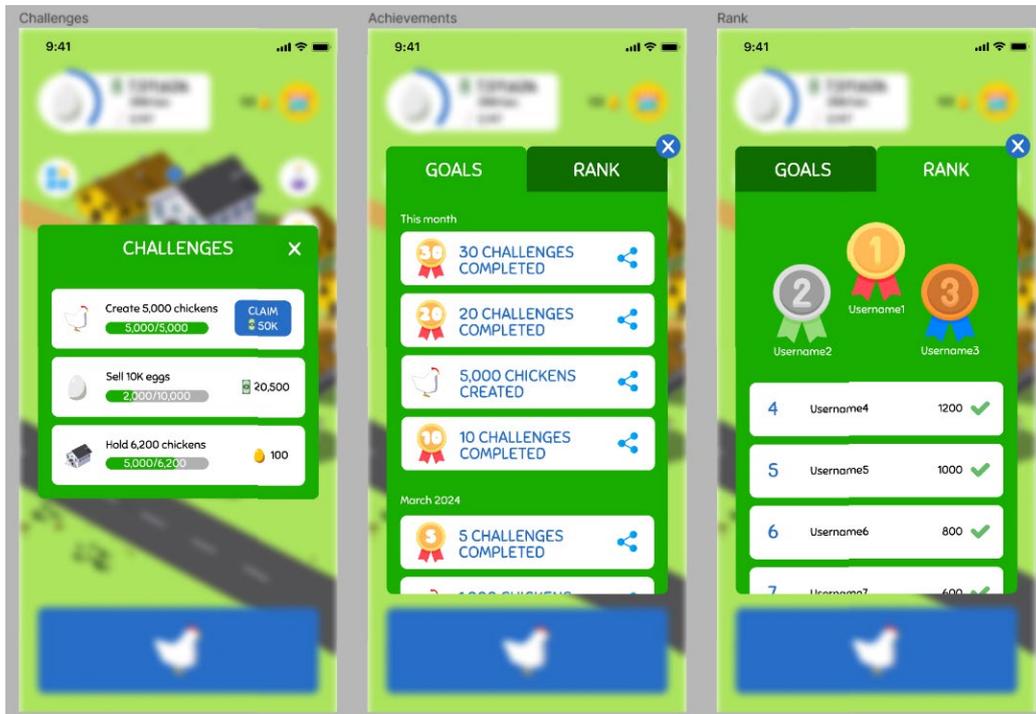
Shipping depot building with a sign



Gift and events hi-fi

8.2 Challenges

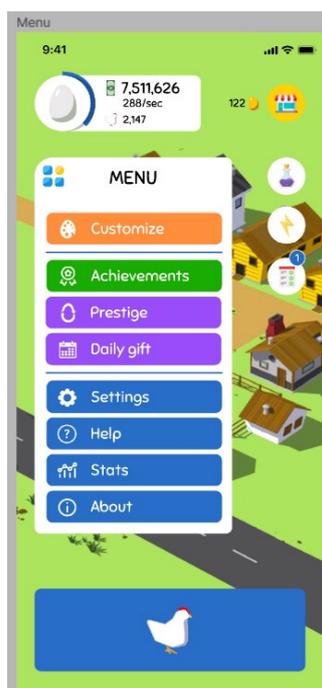
A characteristic I implemented for when players open the windows is this blurry background that covers also the icons, so users are not distracted.



Challenges and achievements hi-fi

8.3 Menu

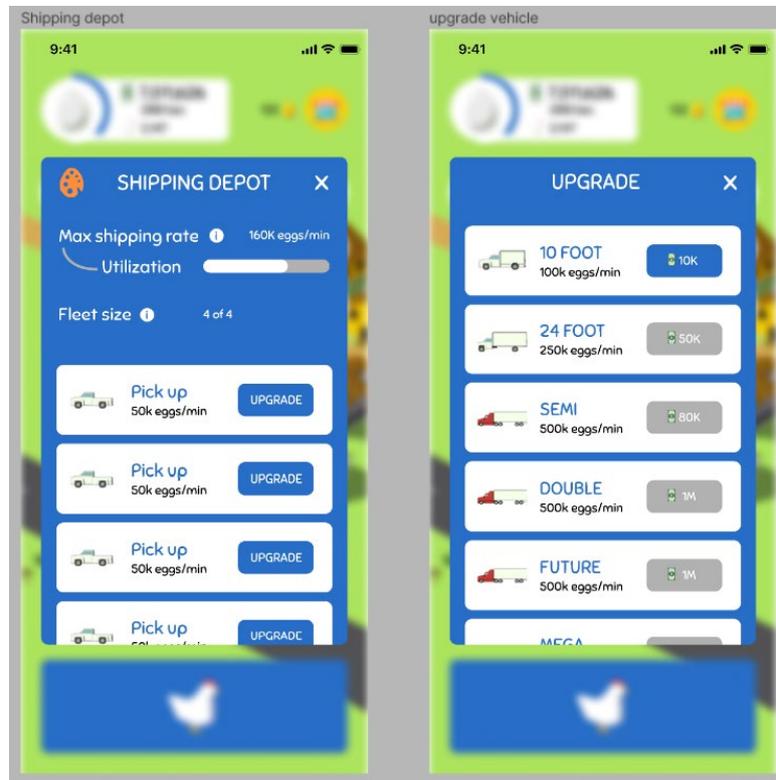
The menu is divided into different sections and buttons have colors based on their category. This makes it more intuitive and easy to access.



Menu hi-fi

8.4 Shipping depot

The original window had too many colors and unnecessary sections, now it is more simple and plain. In the left corner, there is still the customization icon, but it is orange to match the color of its category, also creating a good contrast with its complementary color blue, and popping up to be easily noticed.



Shipping depot hi-fi

9. Heuristic evaluation

Overall, after this restyling, all the rules in the heuristic evaluation have been accomplished with a grade of around 4/5 or 5/5. It is not perfect because there are still some variables to take into consideration: it is a game with a lot of mechanics and it takes long to finish it, but the basics are good enough. The highest grade goes to rule number 4, because now it has a consistent and coherent art style, and rule number 8, for its essential elements avoiding an excessive cognitive overload.

10. Iteration of evaluation

Considering the analysis, I did a low-fi design of all the UI of the game to focus to all the other windows that needed restyling:



Userflow wireframe

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