GUI Report

There are three main requirements for the UI to adhere to from our requirements document:

[a] The user interface for the game must display accurate and up-to-date information for the player so that they can make informed decisions.

[b] The software will implement a system of pop-up menus to assist the player in making their choices at the correct stage of the game whilst continuously displaying a depiction of the current state of the game map.

[c] There must be an options menu and a button to exit the game.

[d] The game must include random events that are made obvious with pop-ups.

The first interaction the player has with the game is through the home screen. A spaceship console is used to present the games futuristic theme to the player, with 4 buttons available: 'New' and 'Load' are grouped together to signify they are how the player may start the game and 'Options' grouped together with 'Credits'. The philosophy of our main menu design is that the player should spend as little time on it as possible; it should be direct and simple so that the user can access the actual game in a matter of seconds. A brief look at existing main menus in the industry confirms this philosophy [1][2]. We achieve this simplicity by having a limited number of options available to the player, and more subtly, the options are all on the lower half of the screen and central, meaning a limited amount of mouse movement is required to cover all buttons. While being a good design principle to follow in general for better UI design [3], it is almost necessary for laptop users using a touchpad to enjoy the game. Since our requirements state 'Any computer capable of running Unity' we must accommodate for these users too. We attempt to follow this principle of grouping throughout our UI design.

The bulk of the permanent GUI is displayed on a bar at the top of the screen. By convention in modern interface design for applications (eg web browsers) the most useful information is displayed at the top, so for consistency we have done the same. All the games vital information is displayed and is always visible to the player: food, energy, ore and money along with the current game phase, the end phase button, settings and shortcuts. This realises requirement [a], as the information is all up to date and available permanently to the player to make decisions from. The food, ore and energy icons have graphics to represent them, and these graphics change based upon the amount of the resource the player owns. Apart from being a fun graphical feature, it also gives new players a reference as to how much of one resource they own. Without this a player may think 50 food is high, despite 500 being a total considered high in the game for example. This adds accessibility to new players trying to learn the game.

In the top right corner of the screen there is an options button represented by a cog icon, when clicked it displays a drop down menu and a quit button, realising requirement [c]. The use of the cog is a universal symbol for settings in modern GUI design, and its placement at the top right is similarly significant as the placement for game settings and save/quit functions. A similar example of intuitive use of graphics is the countdown clock, telling the player the time left for the current phase. The clock is highly visible and styled like an alarm clock with an LCD display, meaning the player will automatically associate it with a timer from their past experience.

A drop down box is placed at the top left of the screen displaying helpful instructions and hints the player may need to view during the current phase. This ensures the inexperienced player has a clear understanding of the game's mechanics and structure; the box acting as a guide through the rules of the game and actions they may undertake. Extending from the principle of 'less is more'[3], the box may be optionally hidden so as not to cluster the screen or irritate experienced players who do not need the information it provides; this is visually indicated to the player by the chains 'attaching' it to the permanent top bar. This ensures the interface is user friendly for different subsets of players equally. More advanced information is abstracted away using windows to display specific data, as stated in the requirement [b]. For example, the information about the Roboticons a player owns is accessible intuitively by either clicking on a Roboticon on the map, or through the 'Roboticons' shortcut. Shortcuts are utilised to present frequently used or important information to a player as easily as possible; this is good interface design because the user does not have to go searching for the information they

need [4]. Because it fulfils the requirements and is designed with respect to various player experience and hardware available, we hope the GUI helps to 'Make the user feel a sense of strategic involvement in the game and feel in control of their colony' as our single statement of use declares.

The market window is unintrusive and pops up at the side of the screen. The player can see market UI prices and the money and resources owned by the market at that time, meeting requirement [a]. This makes it easy for the player to make quick decisions about buying or selling resources or roboticons with separate windows for buying and selling. When the player enters the auction phase the market includes a window where the player can choose to trade resources with their opponent. The player can easily input their chosen amount for a certain price using the buttons to increment or decrement the amount of the resource they are selling. It does not allow them to try and trade with more resources than what they own at that stage. The UI demonstrates the amount of money the player would receive from this trade by calculating the total for the player.

The player can access the casino through the buttons on the top right of the GUI bar. When the player clicks this it pops up with a window where the player can choose to gamble. If the player wishes to gamble they can input a certain amount of money that they would click to gamble and press 'Roll'. This gives a random result, resulting in a big win or a loss for the player.

Random events affect the map in some distinct way. These should be made noticeable and obvious to the player, as stated in requirement [d] and hence we have made pop ups in the UI when these events occur. Messages are displayed in red in the centre of the screen when an event has occurred, informing the players what has happened and who it affects. A large image of Donald Trump also appears as one of the events when he deports all of a player's roboticons, for example.

Bibliography
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