

## **Brief Use Case**

The game “House Design Simulator” allows the user to design a very simple 2D house. The user is asked a series of questions, such as "What color would you like your house to be?" For each question, the user is presented with a set of buttons that show the user their choices. For example, in response to "What color would you like your house to be?", there will be buttons for different color options, such as "Yellow," "Red," or "Green." The user clicks the button with the option they want, and the screen will update to show the effect of their choice. For example, clicking on the button "Yellow" for the house's color will prompt the program to draw the base of a house with a yellow fill. Once the user has made all their selections, the house will be complete, and a message will appear on the screen saying, "Congratulations! You've built a fantastic house!" The user closes the window when they are ready to exit the program.

## Fully-Dressed Use Case

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| Name                  | Creating a House with “House Design Simulator”  |
| Scope                 | System Use Case   |
| Level                 | System Goal Level   |
| Primary Actor         | The user of the game  |
| Stakeholder(s)        | “Game Company” (the entity that would hypothetically release the game)  |
| Preconditions         | <ul style="list-style-type: none"> <li>The user must have installed Python, pygame, and all necessary game files on their computer.</li> <li>The user must know how to launch the main game file through a Python IDE.</li> </ul>   |
| Postconditions        | <ul style="list-style-type: none"> <li>The user creates a 2D rendition of a custom house</li> </ul>   |
| Main Success Scenario | <ol style="list-style-type: none"> <li>1. User launches the program</li> <li>2. The program quickly opens a window with a welcome screen, which provides the user with the option to “Create New House” or “Quit”</li> <li>3. User selects “Create New House” button</li> <li>4. The welcome screen disappears and a user interface (UI) screen appears on the left-hand side of the window. The rest of the window displays a simple landscape image of blue sky and green grass.</li> <li>5. UI screen asks user what color they would like to make the base of their house, and provides three buttons with the choices “yellow”, “green”, or “red”, and a button that says “confirm”</li> <li>6. User clicks a color option button and the base of the house appears on the screen in the color that was selected. The user can click on the buttons as many times as they want to view different choices.</li> <li>7. When the user has finalized their decision, they click “confirm”</li> <li>8. The base of a house (including a front door), in the user’s chosen color, appears to the right of the UI screen. UI screen updates with the next choice for the user.</li> <li>9. UI screen asks user what color they would like to make the roof of their house, and provides three buttons with the choices “black”, “brown”, or “blue”</li> <li>10. User selects one of the roof color buttons</li> <li>11. The roof of a house, in the user’s chosen color, appears on top of the base of the house. UI screen updates with the next choice for the user.</li> <li>12. UI screen asks user what window shape they want, and provides three buttons with the choices “square”, “circle”, or “triangle”</li> <li>13. User selects one of the window shape buttons</li> <li>14. A large window, in the user’s chosen shape, appears on the house next to the front door, another smaller one on the gable). UI screen updates with the next choice for the user.</li> <li>15. UI screen asks user what window shape they want for an accent window, and provides three buttons with the choices “square”, “circle”, or “triangle”</li> <li>16. User selects one of the window shape buttons</li> </ol> |

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|            | <p>17. A small window, in the user's chosen shape, appears on the gable of the house. UI screen updates with the next choice for the user.</p> <p>18. UI screen asks user what kind of tree they'd like next to their house, and provides three buttons with the choices "maple", "pine", or "cherry"</p> <p>19. User selects one of the tree buttons</p> <p>20. The user's chosen tree appears next to the house. UI screen updates with the end game message.</p> <p>21. UI screen displays a message that says "Congratulations! You've built a fantastic house!", along with two buttons: "Build New House" and "Quit"</p> <p>22. User clicks on the "Quit" button and the program closes</p>  |
| Extensions | <p>2a1. User launched the program by mistake</p> <p>2a2. User can select "Quit" from the welcome screen or click the "x" at the top right-hand corner of the window</p> <p>2a3. User clicks the "Quit" button on the welcome screen and the program closes</p> <p>2a3a1. User clicks the "x" at the top right-hand corner of the window and the program closes</p> <p>6a1. Instead of first selecting an option for the color of the house base, the user tries to click on the "confirm" button right away</p> <p>6a2. To prevent the program from moving on to the other house components, which would result in an incomplete-looking house, the confirm button does not activate until the user has selected one of the color options</p> <p>9a1. After seeing the color options for the house's roof, the user decides they actually don't like the color they chose for the base of their house and want to select a different option</p> <p>9a2. The user's only option is to exit the program by clicking the "X" at the top corner of the window and relaunching the game</p> <p>16a1. While trying to adjust the position of their screen, the user accidentally clicks on the "X" button at the top corner of the screen</p> <p>16a2. The program instantly closes</p> <p>16a3. If the user wishes to resume working on the house they were in the middle of building, their only option is to relaunch the program and try to remember their previous selections</p> <p>21a1. User wants to design another house</p> <p>21a2. User clicks on the "Build New House" button, the previously created house disappears/resets, and the program proceeds from Step 5 in the Main Success Scenario</p> |