

Date: July 11th, 2025
To: BrickLink Development Team
Developers
From: Tyler Bibus, Yin Choong, Christopher Funk
The LEGO Geeks
Subject: Recommendations Report on BrickLink Studio's Usability For New Users.

BrickLink development team,

We are *The Lego Geeks* – a team of passionate LEGO builders, long-time BrickLink Studio users, and application user experience researchers. Our team has chosen to conduct testing to evaluate new users' experiences navigating some of BrickLink Studio's basic information and features, and compiled our study's methods, results, and recommendations into the report, titled *BrickLink Studio Usability Study: Results and Recommendations*, attached below. Our usability testing involved a group of four volunteers with various backgrounds, occupations, and ages; some are LEGO hobbyists, and others are completely new to LEGO. Our diverse set of test participants helps ensure this report represents BrickLink Studio's primary user base.

Our report presents three key recommendations based on our study's results. First, our teams suggest that the link to the application preferences dialogue be moved to the application's menu. Second, we recommend that the brick palette's LEGO brick categories be moved to the left of the brick selection area when the brick palette is in the vertical orientation. Third, we recommend changing the angle at which some LEGO pieces are shown in the brick selection area of the brick palette so that these LEGO bricks' shapes can be more easily distinguished. In addition to these recommendations, our report includes a description of the methods we used in conducting this study and an overview of the data we collected while performing the usability testing.

Our team believes the recommendations we present in this report offer the potential to decrease BrickLink Studio's learning curve for new users and help ensure new users have a more positive experience overall. We appreciate your time and consideration and hope you find our findings valuable. Please send your feedback or questions regarding this report's contents to Tyler Bibus at tbibus@iastate.edu.

Thank you,

Tyler Bibus, Yin Choong, and Christopher Funk.

BrickLink Studio Usability Study: Results and Recommendations

Tyler Bibus, Yin Choong, and Christopher Funk | July 11, 2025

Table of Contents

Introduction.....	3
Methods.....	4
Results.....	6
Recommendations.....	13
Closing remarks.....	17
Works Cited.....	18
Appendices.....	19

List of Figures

Figure 1: BrickLink Studio's homepage.....	7
Figure 2: BrickLink Studio's workspace.....	8
Figure 3: Arch piece used in Task 3.1.....	9
Figure 4: Ladder piece used in Task 3.2.....	10
Figure 5: Completion of tasks by users.....	11
Figure 6: The tasks voted most intuitive and least intuitive by test participants.....	12
Figure 7: Pie chart showing the average time test participants took to complete each task in seconds.....	12
Figure 8: Move the preferences from the Edit category to its own menu item.....	13
Figure 9: Original brick Palette with highlighting showing the locations mentioned.....	14
Figure 10: Improved brick palette showing mockup of recommended improvements.....	15
Figure 11: Change the angle at which the LEGO piece is pictured in the brick selection area to make the piece's shape more obvious.....	16

List of Tables

Table 1: Test participant demographics.....	4
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Introduction

This report is intended to present an analysis of the data collected during the research team's usability study of BrickLink Studio. BrickLink Studio is a software application for constructing virtual 3D LEGO models on Windows or Mac PCs. While BrickLink does not specify an age range for its Studio software's intended audience, its advanced features suggest that it is intended for teens and adults (Studio Help Center, 2018). BrickLink Studio is commonly used by both casual and professional LEGO builders to plan and construct large LEGO models (Agarwal, 2023).

The usability study the research team has conducted aims to identify and recommend ways in which the application's interface could be improved to make the experience of accessing BrickLink Studio's basic feature set more intuitive and frustration-free for users unfamiliar with the application's interface.

Despite BrickLink Studio's advanced feature set, like photorealistic 3D rendering, stability analysis, and instruction set design functions, BrickLink describes its Studio software as conducive for "Intuitive and easy building" (BrickLink Studio Download). To test BrickLink's published claims regarding its ease of use, the research team conducted a usability study involving participants unfamiliar with BrickLink Studio. The research team developed three fictionalized archetypes in order to better characterize this study's targeted research audience. These personas can be found in Appendix C. The research team developed a test protocol that prompts test participants to answer a series of questions and complete a series of tasks that focus on a subset of BrickLink Studio's features commonly used by new users, such as locating application settings and help information, searching for LEGO pieces, and changing LEGO pieces' colors.

The following sections present the methods used by the research team to conduct the study, the qualitative and quantitative data results obtained from the testing, and the research team's analysis and recommendations based on the data collected throughout the usability study.

Methods

The test protocol was developed to evaluate a subset of BrickLink Studio's features that are particularly relevant to new users. The test participants have either used personal computers or computers provided by the research team to run BrickLink Studio and complete the tasks included in the test procedure. Several pre-task questions were included in the research team protocol to record the test participants' demographic diversity. During the test, participants were asked to complete various subtasks grouped into four main task categories: give their initial impressions on the application, find application settings and help info, find LEGO bricks, and color LEGO bricks. Each subtask was given a time limit of one minute. If the user could not complete the assigned task in one minute, the task was marked as failed, and the user was asked to perform the next task. At the end of the test, we asked participants three post-test questions to get the overall feedback for the BrickLink Studio application.

Overview of Study Participant Demographics

The research team tested four participants from different backgrounds. These participants' identities have been anonymized while maintaining important information such as age, gender, occupation, most used PC applications, and experience levels with LEGOs.

Participant	Participant 1	Participant 2	Participant 3	Participant 4
Age	60	54	20	24
Gender	Male	Female	Female	Male
Occupation	Software Developer	Elementary Teacher	Student	Software Developer
Top 2 most commonly used PC apps	Visual Studio; Outlook	Canva; PowerSchool	Spotify; Stardew Valley	MS Teams; Outlook
Level of Experience with LEGOs	Moderate experience with LEGOs	No experience with LEGOs	Experienced with LEGOs	Little experience with LEGOs

Table 1: Test participant demographics

Usability Test Protocol's Design

The research team designed the usability test protocol with three major sections: pre-test questions, tasks, and post-test questions. The complete test protocol that the research team used in this usability study can be found in Appendix A. The protocol's pre-test questions primarily gather demographic information such as the participant's age, gender, occupation, etc. The tasks and questions in this protocol were developed to provide both qualitative and quantitative data regarding BrickLink Studio's ease of use for new users. The protocol's post-test questions were included to get test participants' feedback on their perceptions of BrickLink Studio's intuitiveness after their first experience interacting with the app.

For the tasks section, the main section of the test protocol, test participants were asked to complete a series of tasks belonging to four main task categories:

1. *Initial Impressions* – The research team designed this task category to evaluate a new user's initial experiences with BrickLink Studio. This task category involved prompting the user to create a new file and collecting the user's initial impressions on the workspace's layout.
2. *Finding Dialogues* – The research team designed this task category to evaluate the intuitiveness of the application menu's organization. This task category involved asking the user to locate specific application settings and help features.
3. *Finding LEGO Pieces* – The research team designed this task category to evaluate the intuitiveness of finding specific LEGO bricks in BrickLink Studio. This task category involved asking users to find bricks by navigating BrickLink Studio's LEGO piece categories and the LEGO piece search feature.
4. *Coloring LEGO Pieces* – The research team designed this task category to evaluate how intuitive it was for users to change a LEGO brick's color. This task category involved prompting the user to change the color of a brick in the viewport.

As users completed these tasks, the test administrators recorded data on how successfully the user was able to complete the task within the task's one-minute time limit. As participants worked on tasks, the test administrator's observations about participants' interactions with the application were also recorded.

Data Analysis

To categorize the level of difficulty a participant encountered when attempting to complete a task assigned by a usability test administrator, the research team defined three levels of successful task completion:

- *Succeeded* – The participant completed the task quickly without signs of confusion or hesitation.
- *Succeeded with Difficulty* – The participant completed the task but took a long time, expressed confusion, or took incorrect paths before finishing the task.
- *Failed* – The participant could not complete the task within the allotted time or gave up.

These categories allowed the research team to more easily quantify the difficulty a test participant encountered when completing an assigned task and helped the research team gain important insights into where changes to the application's features may be necessary.

In addition to this measure, the research team collected the time it took to complete each task, providing another metric to gauge which tasks were the most difficult for users.

Results

This section presents an overview of the qualitative and quantitative data the research team collected for each subtask that participants were asked to perform.

Task 1: Initial Impressions

The first series of tasks the research team had the test participants complete involved creating a new BrickLink File and recording their initial impressions of BrickLink Studio.

Task 1.1: Creating a New BrickLink Studio File

For the first subtask, task 1.1, the research team had participants complete the basic task of creating a new BrickLink Studio file from BrickLink Studio's home page, shown in Figure 1. All participants seemed to find this task very intuitive and quickly associated the yellow "Create new" button with creating a BrickLink Studio file. This task took users on average 5 seconds to complete.

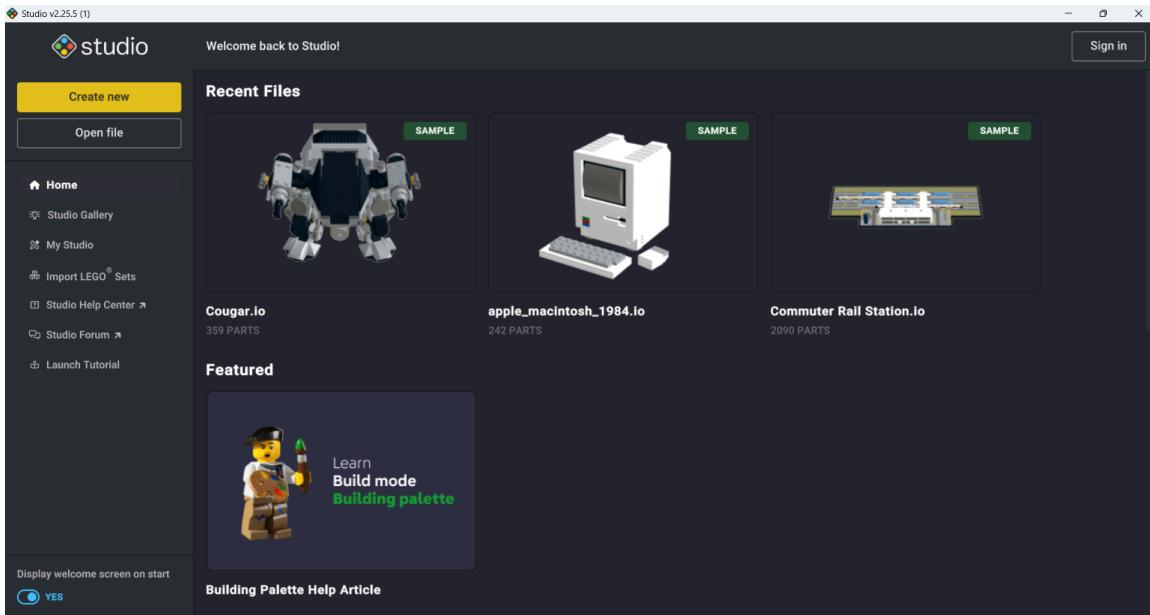


Figure 1: BrickLink Studio's homepage

Task 1.2: Most Important Areas of the Workspace

For task 1.2, participants were asked to give their initial impressions of the workspace (shown in Figure 2), specifically, what two areas in the workspace view struck them as the most important. Participant 1 and Participant 3 responded to this question by stating that the brick palette and the viewport were the most important areas of the application; however, Participant 2 stated that their initial impression was that the brick palette and the connect button were the most important parts of the application. Finally, Participant 4 did not directly respond to the question regarding which areas of the application were most important; instead, this test participant gave their impression of the workspace view without specifying which areas of the workspace they found most important. These participants' responses can be seen in Appendix B.

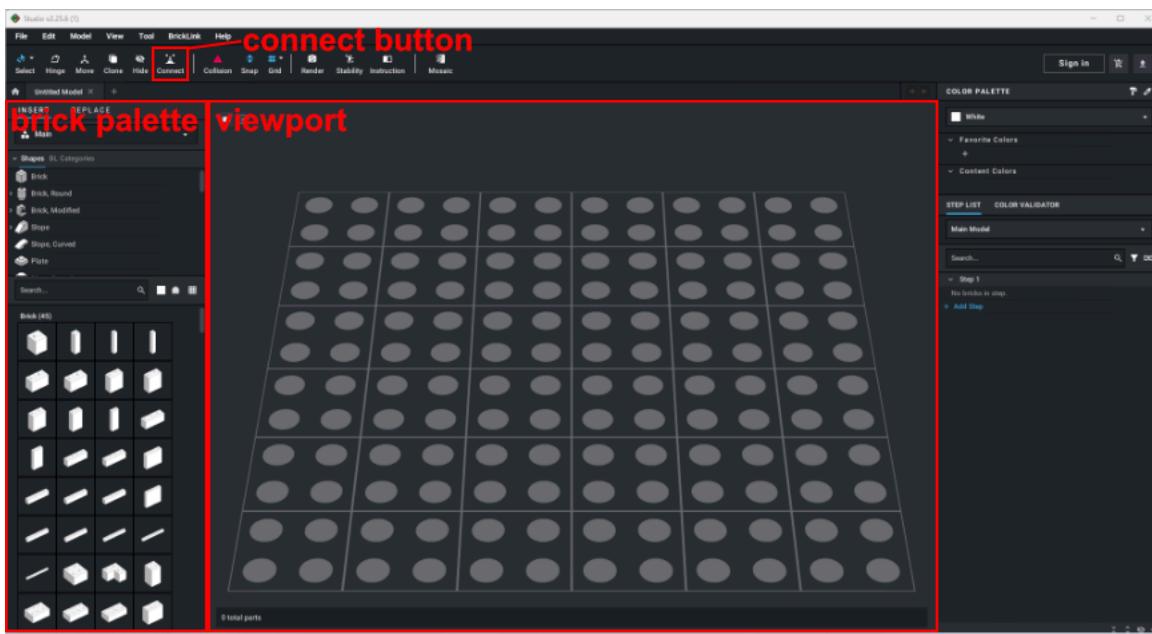


Figure 2: BrickLink Studio's workspace view

Task 2: Finding Dialogues

Our team's goal for the second series of tasks was to evaluate how intuitive finding basic app settings and help resources is for users.

Task 2.1: Finding App Settings

Task 2.1 involved the test administrator asking the participants where they would expect to find the app settings for keyboard shortcuts. From observing the users, it seemed that while three of the test participants realized that this dialogue should be found in the application's menu, all three of the test participants who found the application preferences checked at least one other menu item before finding the application preferences option under "Edit". Out of all the tasks, task 2.1 took participants the second longest to complete at 39 seconds on average. One test participant, Participant 2, did not succeed in finding the app settings within the one-minute time limit and did not check the application's menu. Additionally, two test participants shared that they found this subtask the most challenging.

Task 2.2: Locating the BrickLink Studio Tutorial

Task 2.2 involved the test administrator asking the test participants to locate a link to a tutorial on using BrickLink Studio in the workspace view. Most test participants found this task straightforward, and, excluding the single outlier who failed to complete this task within the

time limit, this test took users on average 4 seconds. The test participant who failed to complete the task in the one-minute time limit guessed that the tutorial could be found by selecting the “Instruction” button below the menu; this brought the average time users took to complete this task to 23 seconds.

Task 3: Finding LEGO Pieces

For the third series of tasks, our team’s goal was to evaluate how intuitive it is to locate LEGO pieces in BrickLink Studio’s brick palette.

Task 3.1: Finding LEGO Pieces Using Categories

For task 3.1, the test participants were asked which section they would expect to find the arch piece shown in Figure 3, below. Rather than looking through the brick categories, three users began searching for this piece by scrolling through all the pieces in the brick palette. One participant, Participant 4, found it easier to search for the piece with the brick pallet’s search function rather than locate the LEGO piece’s category in the brick categories section. Another participant, Participant 2, failed to find this piece altogether in the one-minute time limit. This task took participants the longest out of all tasks assigned, taking on average 56 seconds. From observing the user’s behavior, it appeared that this task took participants the longest because of the time participants took to scroll through the LEGO pieces and brick categories in the brick palette.

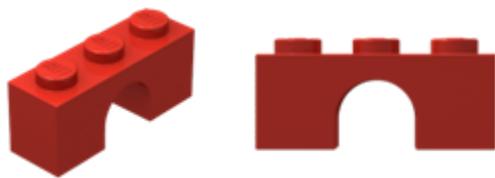


Figure 3: Arch piece used in Task 3.1

Task 3.2: Finding LEGO Pieces by Using the Search Function

For the second subtask in task 3, the user was asked what search term they would use to search for the LEGO piece shown in Figure 4, below. Most users were able to find the piece using the correct search term “ladder.” However, one participant tried at least one other search term before searching using the term “ladder.” Another participant, Participant 1, failed to find this piece despite having used the correct search term. Participant 1 commented afterward that they did not recognize the piece due to the angle at which the piece is shown in the brick

palette. Due to their inability to locate this piece, Participant 1 shared that they found this task to be the most difficult out of all the tasks they had been assigned.



Figure 4: Ladder piece used in Task 3.2

Task 4: Coloring LEGO Pieces

For the final task, the user was asked to change the color of a white 2 x 2 brick to red. All participants successfully completed this task; however, participants experienced a few difficulties. One participant attempted to change the LEGO brick's color without first making sure that the brick was selected; they then appeared to realize their mistake and selected the brick before using the color palette to change the brick's color. During the post-test questions, this participant described changing the object's color as the least intuitive task. In addition, another participant initially expected to change the piece's color by searching the context menu that appears when a user clicks the right mouse button with their cursor over the LEGO piece.

Summary of Results

Based on the qualitative and quantitative data collected during this study, the two most difficult tasks for most users were finding the application keyboard shortcut settings (Task 2.1) and the arch piece (Task 3.1). This conclusion was made based on a comparison of the three datasets: the number of participants who successfully completed each task, shown in Figure 5, the tasks voted the most difficult and most intuitive, shown in Figure 6, and the times test participants took to complete each task, shown in Figure 7.

Participant Task Completion

According to the data collected on each participant's success at completing the assigned tasks, Task 1.1 – *Creating a New BrickLink Studio File* was the only task able to be successfully completed without difficulty by every participant while Task 2.2 – *Locating the BrickLink Studio Tutorial*, Task 3.2 – *Finding LEGO Pieces by Using the Search Function*, and Task 4 *Coloring LEGO Pieces* had an approximately average participant success level, with the majority of participants

succeeding to complete the task. In comparison, Task 2.1 – *Finding App Settings* and Task 3.1 – *Finding LEGO Pieces Using Categories* were tasks with the lowest levels of participant success. For these tasks, most participants did not complete the task without encountering some difficulty. This data is summarized in Figure 5.

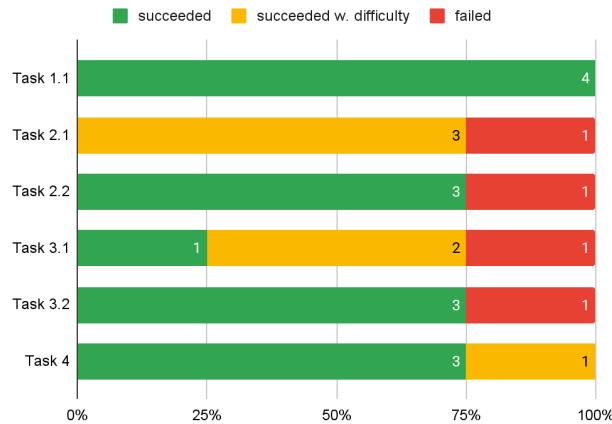


Figure 5: Number of test participants who completed each task by success rate

Tasks Voted Most Intuitive By Participants

According to the participant's responses to questions regarding what tasks they found most and least intuitive, Task 1.1 – *Creating a New BrickLink Studio File*, Task 2.2 – *Locating the BrickLink Studio Tutorial*, Task 3.2 – *Finding LEGO Pieces by Using the Search Function*, and Task 4 – *Coloring LEGO Pieces* were each chosen by one participant as the most intuitive tasks assigned. However, in addition to being voted the most intuitive by some, other users also voted Tasks 3.2 and Task 4 as the least intuitive tasks. Finally, Task 2.1 – *Finding App Settings* qualified as the least intuitive task according to the test participants; two participants voted this task the most unintuitive. Figure 6 summarizes the number of votes each task received as the most and least intuitive tasks.

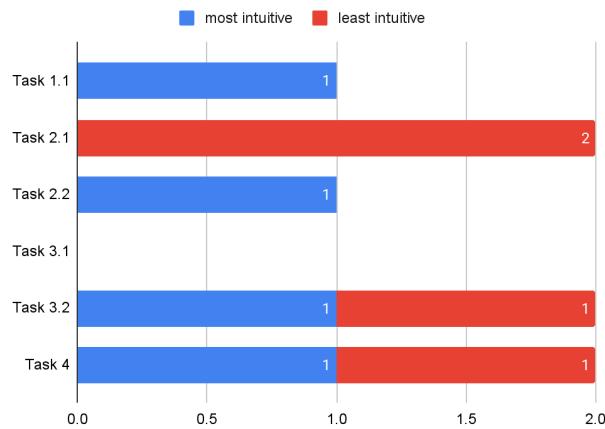


Figure 6: The tasks voted most intuitive and least intuitive by test participants

Average Time Required to Complete Each Task

According to the average time that users took to complete each task, task 1.1 – *Opening a New File* took the least amount of time, only requiring users five seconds on average to complete. In contrast, the task that took users the longest amount of time on average was Task 3.1 – *Finding the LEGO Piece Using Categories*. Most of the other tasks took a reasonable amount of time on average, with the previously mentioned tasks being the main outliers. Figure 7, below, depicts the average time each test took between different tasks.

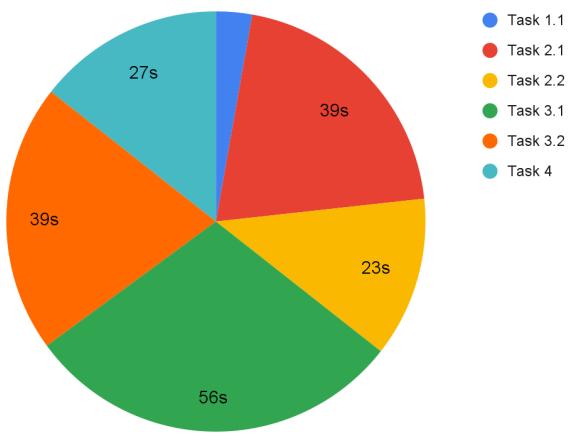


Figure 7: Pie chart showing the average time test participants took to complete each task in seconds

Recommendations

Based on the usability issues identified during our testing, the research team has developed the following three recommendations. Each recommendation is directly linked to an observed problem. The recommendations are intended to improve efficiency, ease of use, and user satisfaction for new BrickLink Studio users.

1. Make Application Settings Accessible via a Menu Item.

While a menu is a compact way to organize links to a variety of application features, the features stored in the application's menu should be clearly associated with the menu categories. Since most of the study participants had to search through other menu items before they discovered the "preferences" option under "Edit," we recommend that the link for the application preferences dialogue be added to its own menu item rather than under the "Edit" category. The research team believes that this change would make accessing the application's settings more intuitive for new users.

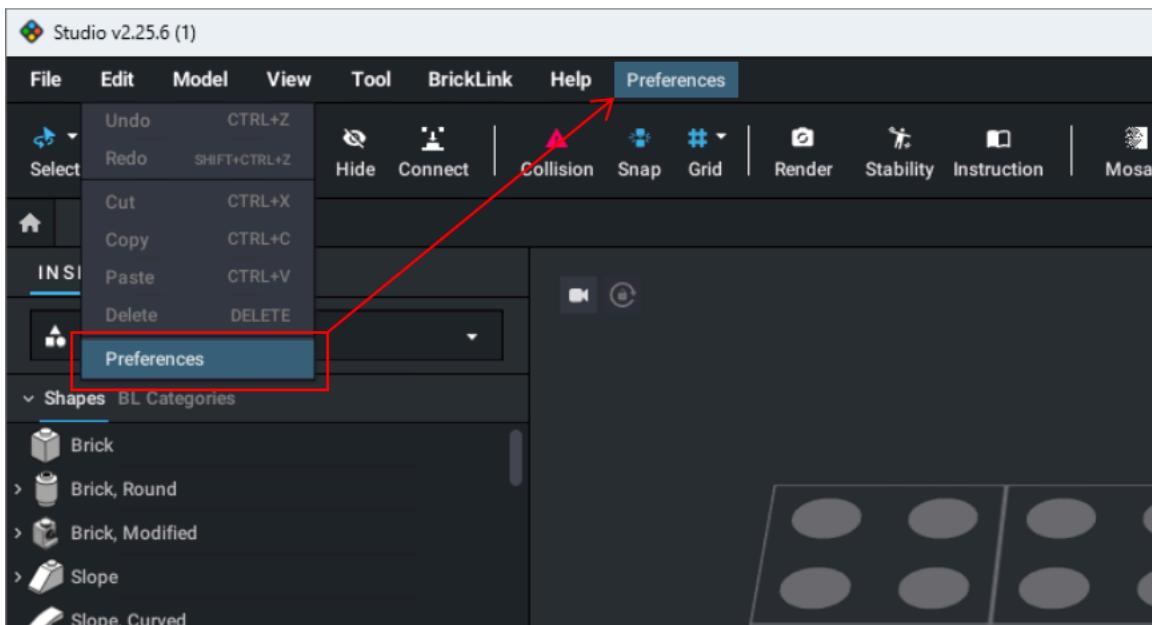


Figure 8: Move the preferences from the Edit category to its own menu item.

2. Change How LEGO Piece Categories are Displayed in the Brick Palette.

For Task 3.1, three test participants encountered difficulties navigating the brick palette's categories. By observing the participant's behavior, the research team has concluded that the categories section of the brick palette is too cramped. When the brick palette is in the vertical orientation, the LEGO piece categories section is too small when stacked above the brick selection area, this can be seen in Figure 9, below. The research team recommends that the brick categories section be moved from above the brick selection area to the left of the brick selection area. This change would allow the brick categories section to have more space and appear easier to use. Additionally, the research team recommends that the "expand arrows" that indicate that categories contain subcategories should be enlarged and made to stand out more, as test participants did not seem to instantly recognize that the brick categories had subcategories. A mockup showing the proposed changes can be seen in Figure 10, below.

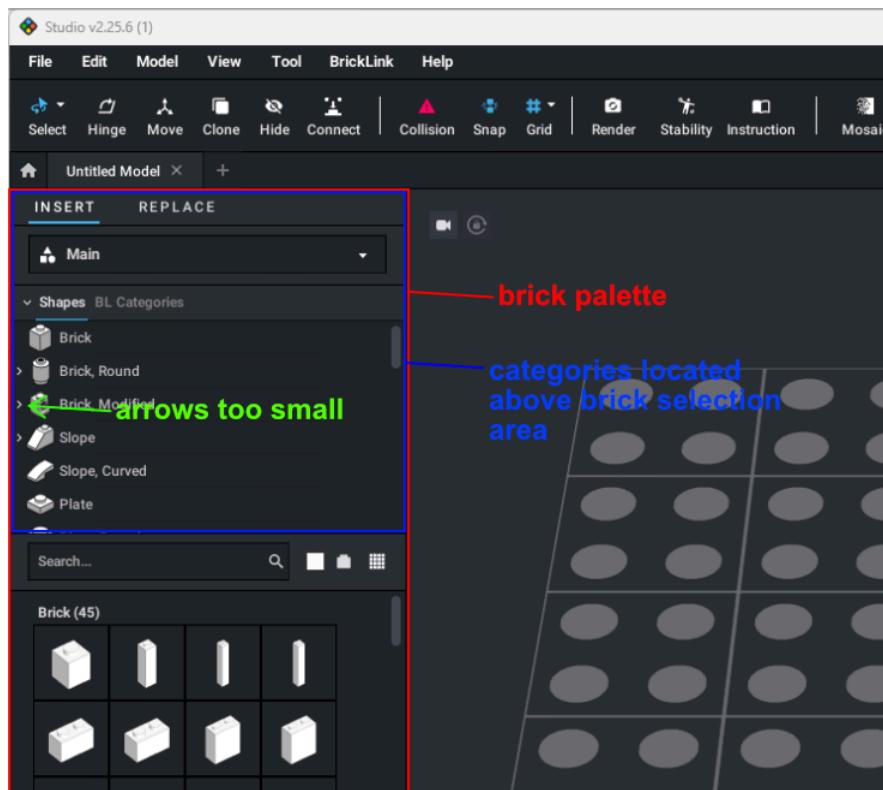


Figure 9: Original brick Palette with highlighting showing the locations mentioned

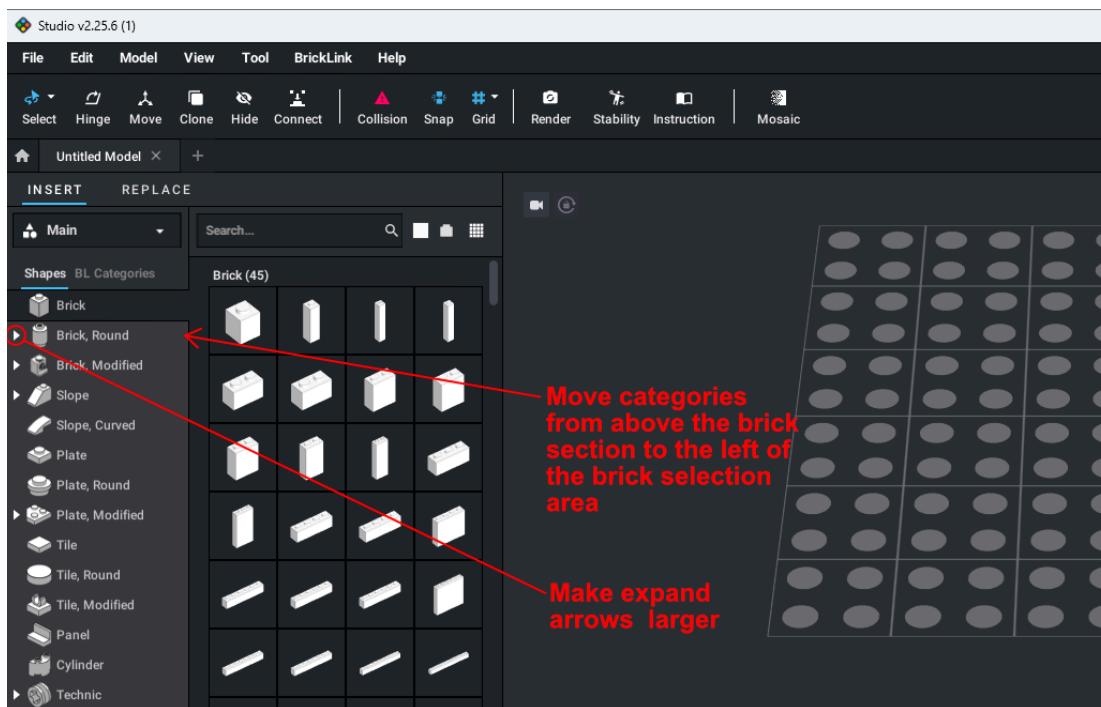


Figure 10: Improved brick palette showing mockup of recommended improvements

3. Change the Angle at Which Bricks are Displayed

When asked to search for the ladder in task 3.2, one user searched for the correct term but did not recognize that the ladder piece was shown in the brick selection area. When discussing this failure afterward, the test participant mentioned that the image of the part used in the brick selection area was not shown at an angle that made the separation between the ladder's rungs visible. Thus, the picture used for this piece in the brick selection area obscured the brick's actual shape. To address the issue, the research team proposes that the images of the LEGO pieces used in the brick selection area be reviewed and that the angle at which some pieces are pictured be changed to an angle where each LEGO piece's shape is clear to the application's user. As an example, the angle the research team suggests that the Ladder piece should be shown from can be seen in Figure 11 below.

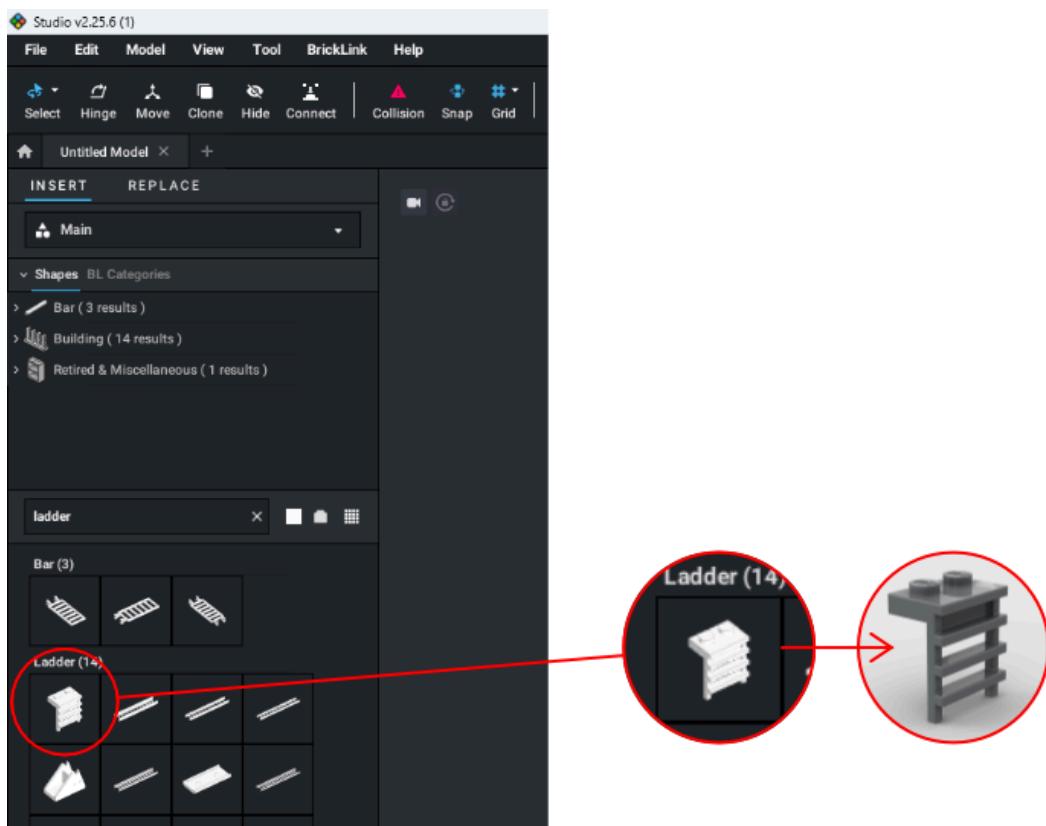


Figure 11: Change the angle at which the LEGO piece is pictured in the brick selection area to make the piece's shape more obvious

Closing remarks

BrickLink Studio's feature set offers much potential and functions well as a brick building tool for both casual and professional builders. The research team believes that significant improvements to new users' experiences can be made to BrickLink Studio by implementing the three changes outlined in this report. The three improvements we have identified in this report are:

- Move the link to the application preferences to the application's menu.
- Move the brick palette's LEGO brick categories to the left of the brick selection area.
- Change the angle at which some LEGO pieces are shown in the brick selection area of the brick palette.

The research team believes these three changes will help build on BrickLink Studio's already mature design by reducing BrickLink Studio's learning curve and ensuring that BrickLink Studio appeals to an even wider audience. Our team is enthusiastic about BrickLink Studio's current

potential and desires to aid, where necessary, in moving BrickLink Studio toward an even better and brighter future of serving digital LEGO builders all around the globe.

Works Cited

Agarwal, Vishnu. *The Art of Virtual LEGO Design*. Apress EBooks, 1 Jan. 2023.

“Introduction to Studio.” *Studio Help Center*, 2018,

studiohelp.bricklink.com/hc/en-us/articles/5404381697559-Introduction-to-Studio.

“Studio Download [BrickLink].” *Www.bricklink.com*,

www.bricklink.com/v3/studio/download.page.

Appendices

Appendix A: Test Protocol

For Test Administrator – Test Setup

Note to the test administrator: Read the note to the test administrator section at the beginning of each task and ensure that the LEGO Studio application is properly set up so the user can perform each task.

LINK TO THE SUPPLEMENTAL MATERIALS (make sure the test participant has access to them and can view these materials): [Usability Test Supplemental Materials](#)

The persons responsible for setting up the application test environment must ensure that:

- The Test participant has access to and can view the supplemental materials provided.
- The PC screen being used for the usability test should be recorded using the Windows 11 screen recorder, and the microphone for the screen recorder should be unmuted.

In addition, the LEGO Studio application should be configured as follows:

- The LEGO Studio app should not have any other files open.
- Ensure the test participant uses a three-button mouse with a scroll wheel as their pointing device.
- The “Start Tutorial” banner is *not* displayed on the home screen (see **Figure 1**).
- The Color Palette must be visible in the workspace view.
- The LEGO Studio app’s building palette should be in a vertical orientation (see **Figure 2**).
- The ground is shown (see **Figure 2**).
- The building pallet is on “main” (see **Figure 2**).

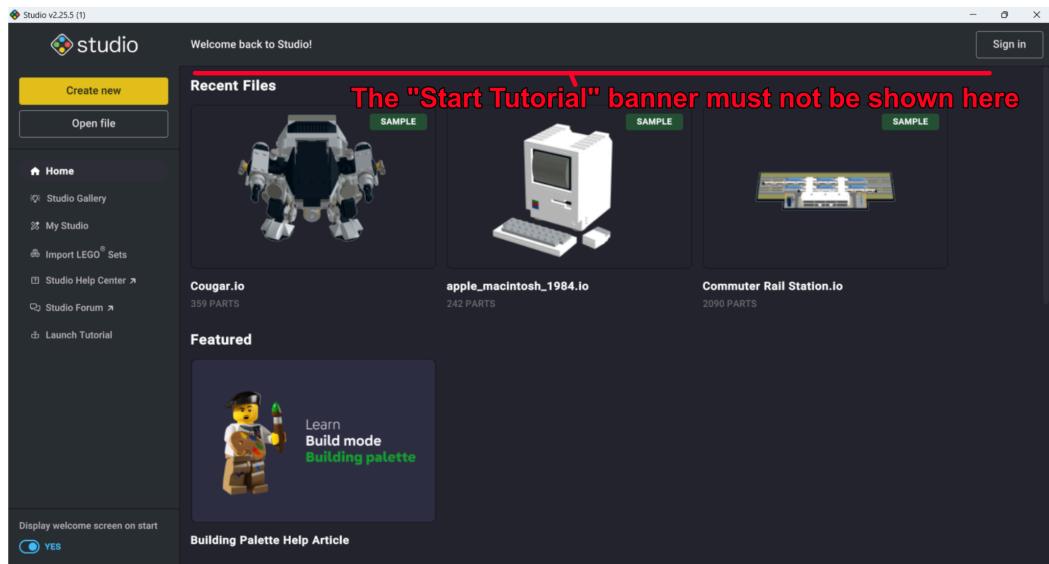


Figure 1: Ensure the “Start Tutorial” banner isn’t shown.

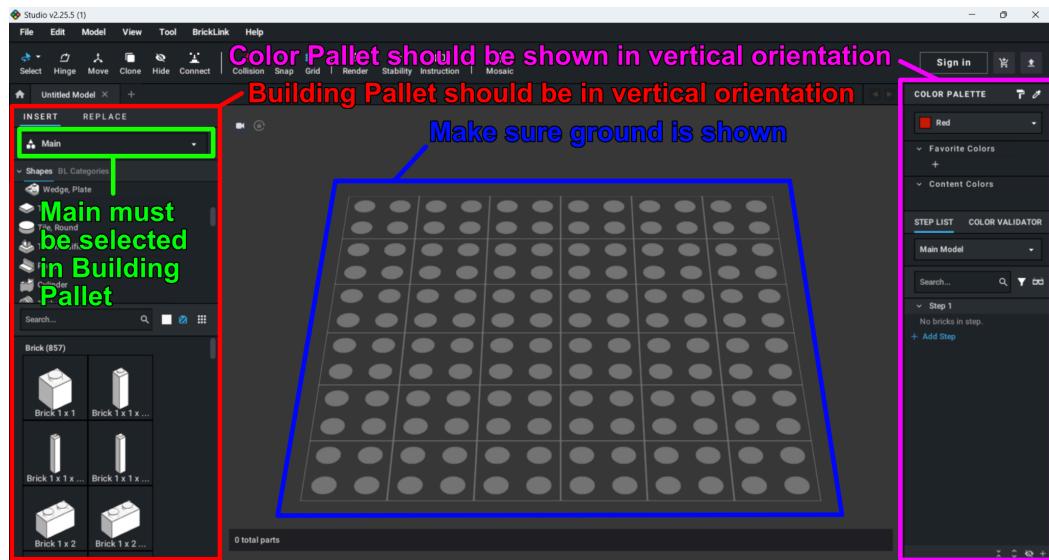


Figure 2: Ensure the workspace view has the same layout as pictured.

Test Procedure

Agenda

Hello, my name is _____. I am part of a team of passionate LEGO builders called *The LEGO Geeks*. Our team is trying to find ways to make the LEGO Studio app easier to use for first-time users like yourself. LEGO Studio is an app for building 3D LEGO models on a PC.

In order to find the areas where the LEGO Studio app could improve, I am going to ask you a series of questions and ask you to try to complete a handful of tasks using LEGO Studio.

If I tell you to do something and you can't figure out how to do it or make a mistake, don't worry about it. If you make mistakes, that just tells me and my team the areas where LEGO Studio could improve, so please don't feel nervous. I don't want you to think that making mistakes is a bad thing.

I am going to be using the microphone to record what you say during the usability test, and I am also going to record the computer's screen while you use LEGO Studio. These recordings will allow our team to better identify the problem areas in LEGO Studio after you are done. If you are ok with me recording this screen and your voice, for legal reasons, I will need you to sign this document allowing me to make these recordings.

While you try and perform the tasks I ask you to, I would like you to "think aloud". We want to hear your thoughts on what using LEGO Studio is like. We want you to share where you expect to find things, what areas are clear, and what areas seem confusing or unexpected.

Do you have any questions you would like to ask before we begin?

Pre-test Questions

Before using Lego Studio, there are a few questions I will ask you so that our team can better categorize and analyze the test data we collect.

- What is your age?

Age:

- What is your gender?

Gender:

- What is your occupation?

Test Participant's Occupation:

- Out of all the PC apps that you use, what are the names/types of the top two to three PC apps that you use the most?

Top 2-3 Applications:

- How much experience do you have building with Legos?

Response:

- Have you ever used LEGO Studio before?

Response:

Tasks

Now I am going to ask you to perform some tasks using LEGO Studio. I will first ask you to do something, then give you a little time to let you try and figure out how to do that task. As I mentioned before, as you try to do these tasks, I want you to tell me what you are thinking as you try different things. As I said before, if you can't successfully complete a task, that's our problem, not yours. Note that I may have to ask you to step aside for a moment in between tasks so I can set up different test scenarios in LEGO Studio. So, if I ask you to step aside, it is not because you did something wrong.

Task 1: Creating a LEGO Studio File and First Impressions

Task Purpose: To determine if the user's first impression of the app is inviting or intimidating.

Note to the test administrator: The LEGO Studio application should be on the home screen (see **Figure 1.1**). Additionally, the screen recorder should be recording the audio captured by the computer's microphone and the user's movements and actions on the screen.

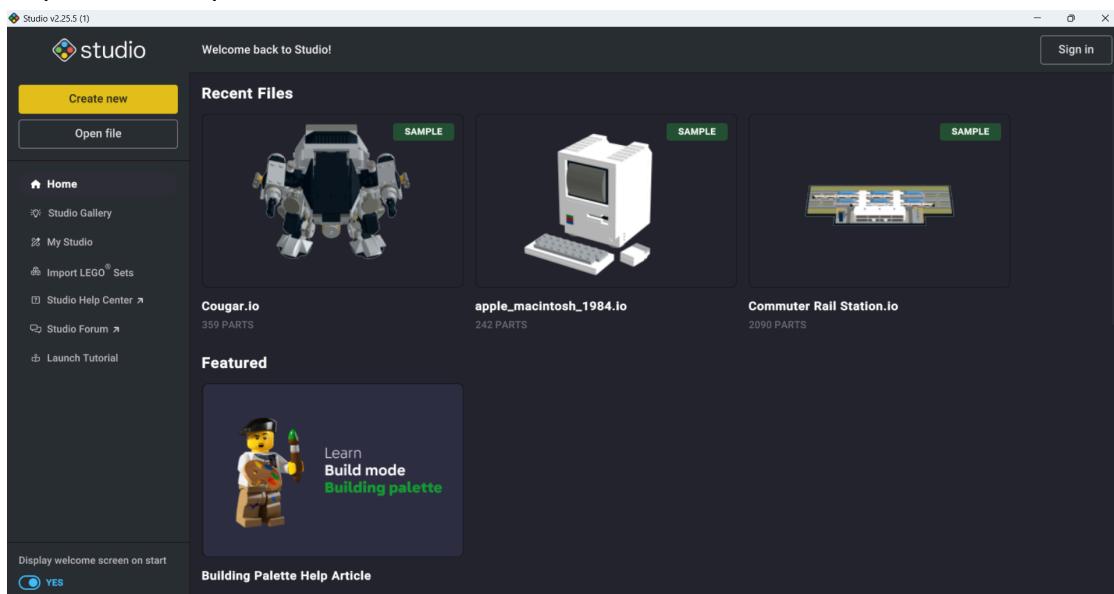


Figure 1.1: The LEGO Studio Home Screen

1. Please create a new LEGO Studio file. (*10s max*)

Participant Succeeded: <input type="checkbox"/> Succeeded w/ difficulty: <input type="checkbox"/> Failed: <input type="checkbox"/>
Observations:

2. Now that the new file has been created, I want to get your initial impression of the current window and its layout (*the workspace view shown in Figure 2.1, below*). Looking at this view, what are the top two areas in the app that strike you as the most important?

Participants' Response:

Task 2: Finding Dialogues – The LEGO Studio Tutorial and App Settings

Task Purpose: To see whether the user can easily find basic app settings and resources.

Note to the test administrator: The LEGO Studio application window should now show the workspace (see **Figure 2.1**).

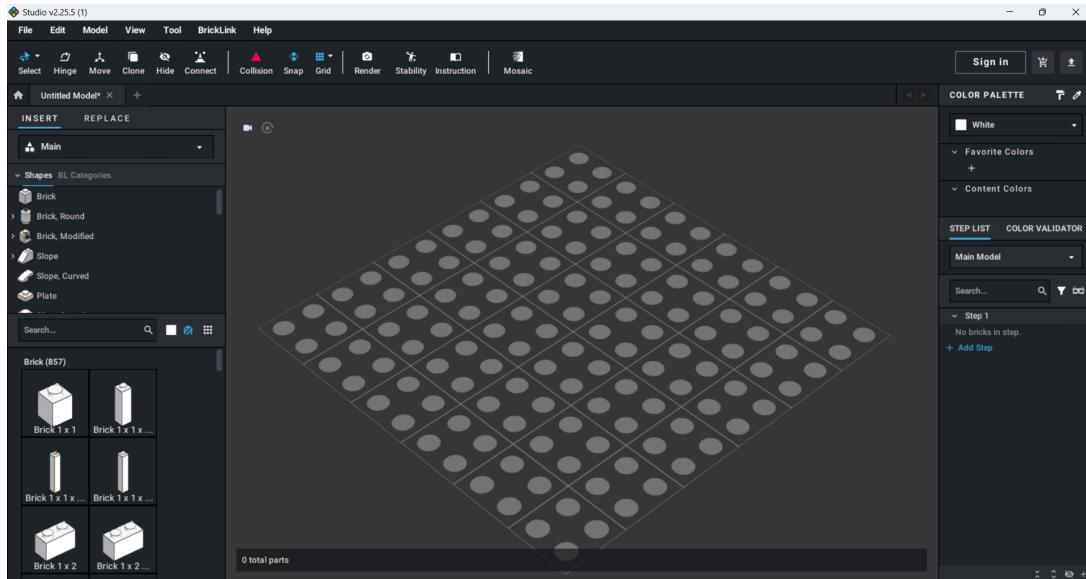


Figure 2.1: Initial setup for home screen

Please show me where you would expect to find the list of currently configured keyboard shortcuts. (1min max)

Expected path: Edit → Preferences → Shortcuts.

Participant Succeeded: <input type="checkbox"/> Succeeded w/ difficulty: <input type="checkbox"/> Failed: <input type="checkbox"/>

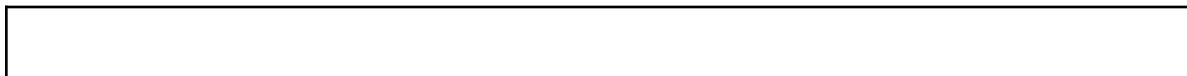
Observations:

Now, show me where you would expect to find a link to a tutorial on using LEGO Studio in this window. (1min max)

Expected path: Help → Tutorial.

Participant Succeeded: <input type="checkbox"/> Succeeded w/ difficulty: <input type="checkbox"/> Failed: <input type="checkbox"/>

Observations:



Task 3: Finding Lego Pieces

Task Purpose: To determine how intuitive it is to find and search for specific LEGO pieces.

Note to the test administrator: The LEGO Studio application should be started, and the application window should show the workspace (shown in **Figure 2.1**, above). Ensure that the user can access and view the supplementary materials required for this step (found in the section above titled: For the Test Administrator – Test Setup).

Ok, now I want to see how you would go about finding certain LEGO pieces. Look at the red piece shown in **Figure 3.2** of the document I gave you. Under what section would you expect to find the piece with this shape? (1min max)

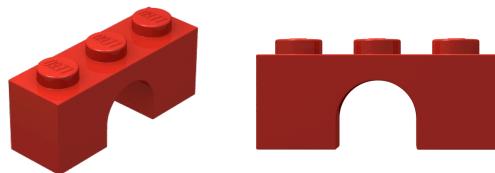


Figure 3.2: Find the section under which this piece is stored.

Participant Succeeded: **Succeeded w/ difficulty:** **Failed:**

Observations:

Now look at the grey LEGO piece with the shape shown in **Figure 3.3** in the document I gave you. If you were searching for a piece with this shape, what term would you use to search for it? Please try searching for this piece. (1min max)



Figure 3.3: What search term would you use for this piece?

Participant Succeeded: **Succeeded w/ difficulty:** **Failed:**

Observations:

Task 4: Coloring LEGO pieces

Task Purpose: To determine how intuitive it is to change the properties of a LEGO piece.

Note to the test administrator: The LEGO Studio application should be started, and the application window should show the workspace (the view where virtual LEGO models can be built). Please place a 2 x 2 brick in the viewport (as shown) for Task 4 (setup is shown in **Figure 4.1**).

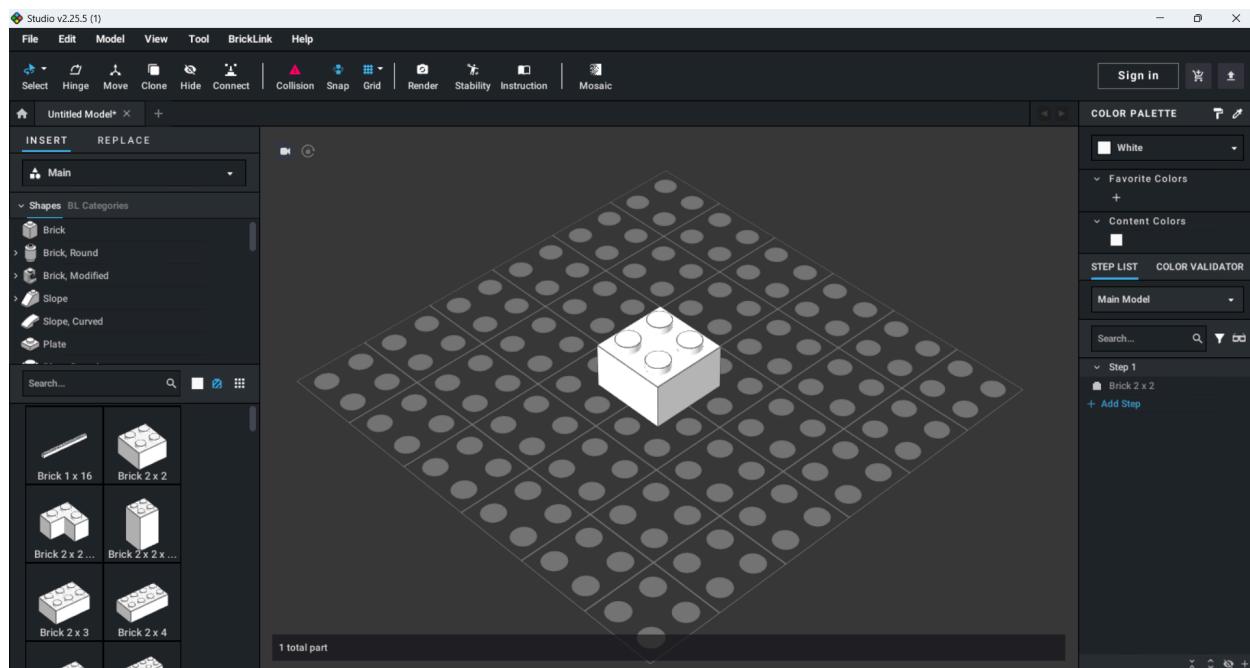


Figure 4.1: initial setup for Task 4: Coloring LEGO Pieces.

How would you go about changing the color of this white 2 x 2 brick to red? (1min max)

Participant Succeeded: **Succeeded w/ difficulty:** **Failed:**

Observations:

Post-test Questions

Ok, now that you have completed the tasks involving LEGO Studio, I want to ask you a few questions about your experience with the app.

1. What task did you find most intuitive?

Response:

2. What task did you find was the most challenging?

Response:

3. Overall, how intuitive did you find the application's design? (it could be navigation, searching, icons, etc.)

Response:

Do you have any final thoughts or questions you would like to share?

End of Test

Thank you for participating in this application test. We LEGO geeks appreciate your time and patient taking this user experience test. Your comments and feedback are much appreciated, as they will help us understand how to improve the LEGO Studio app's user experience.

Appendix B: Individual Participants' Responses to Open-Ended Questions

Question	Participant 1	Participant 2	Participant 3	Participant 4
Looking at [the workspace], what are the top two areas in the app that strike you as the most important?	The two most important areas in this app are the view containing the LEGO baseplate and the brick selection to the bottom left.	Brick categories (e.g., the Building Palette), “Connect” button on the functions bar below the menu.	Buildspace in the middle. The bricks on the left that you can build with.	The whole UI looks clean, and there are a lot of icons, and the bricks are nice and big.
What task did you find most intuitive?	Searching for the tutorial. However, I don't believe that the tutorial should kick users out if they choose to exit it.	Finding the brick's color was the easiest.	Searching for the bricks or finding the colors.	Easy to start a project. Searching for a block is very easy, there are search options to find a block fast. Categories are fairly straightforward.

What task did you find was the most challenging?	Searching for the pool ladder.	Changing the brick's color was the most difficult. I had to fiddle around with the program until it just worked.	Looking for the shortcuts.	Hot keys are hard to find; they should be under files or help, usually, since it is something a user would probably use, and that's how most applications structure their menus. Looking for arches is a little bit confusing. I was initially thinking that arches would be under the "slope" section.
Overall, how intuitive did you find the application's design?	I do like the color palette being right there as a sidebar, and that there are categories for bricks. I suppose I have to familiarize myself with what shapes belong to each brick.	Fairly workable. The program is fun to play with and explore.	It is pretty easy. I am cooking.	It was easy to create a new project; additionally, the tabs of different projects are easy to access. Would need to try out more to really get to know how things work.

Do you have any final thoughts or questions you would like to share?	<p>There should be more right-click (context menu) options.</p> <p>The search terms could be more intuitive.</p> <p>Some of the pieces (like the ladder) should be shown from a different angle (the shape of the piece is not easily seen)</p>	None.	None.	No.
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Appendix C: User Personas



Adam

Reason for using BrickLink studio

Adam is a passionate Adult Fan of LEGO (AFOL). Adam decided that in his free time, he wants to build a scale model of a building he designed in LEGO using BrickLink Studio. To do this, Adam will have to first familiarize himself with the locations of BrickLink Studio's features and functions.

Age: 55

Gender: Male

Occupation: Architect

Figure 1.1: User Persona 1



Beth

Age: 45

Gender: Female

Occupation: CEO of a large pharmaceutical company

Reason for using BrickLink studio

Beth is an avid LEGO collector and builder and enjoys building LEGO models to help calm down in the evenings after a stressful day in the office. She has decided she wants to create a series of healthcare-related vignettes for Health Workers' Day to decorate her office. She will build these vignettes in LEGO Studio since the parts for models built in the app can be easily ordered from BrickLink, but first, she needs to familiarize herself with the locations of the app's features and functionalities.

Figure 1.2: User Persona 2



Cole

Reason for using BrickLink studio

Dan wants to create a LEGO model of a new hydraulic pump design he has invented, but due to the cost of his college tuition, he can't afford to purchase the LEGO pieces required to build his hydraulic pump. As a compromise, he decides to build a LEGO hydraulic pump using the free BrickLink Studio app, but before he builds this pump, he must first learn how to locate the app's features and functions.

Age: 23

Gender: Male

Occupation: Mechanical Engineering Student

Figure 1.3: User Persona 3