# User's Manual

**Background information**

In this game, you play the role of a project manager. This project simulates a real construction project, which was conducted in the Industrial Center of The Hong Kong Polytechnic University and done by a group of students major in construction-related fields.

This project aims at erecting the structures and installing windows and doors for a demo house for a public housing project. The building area of this demo house is around 25 square meter.

This project was completed in 17 work days. In this game, you have at most 30 days to completed this project, and you would lose if you spend more than 30 days. Your goal is to minimize labor cost and project time through optimizing labor allocations.

**Download and run the game**

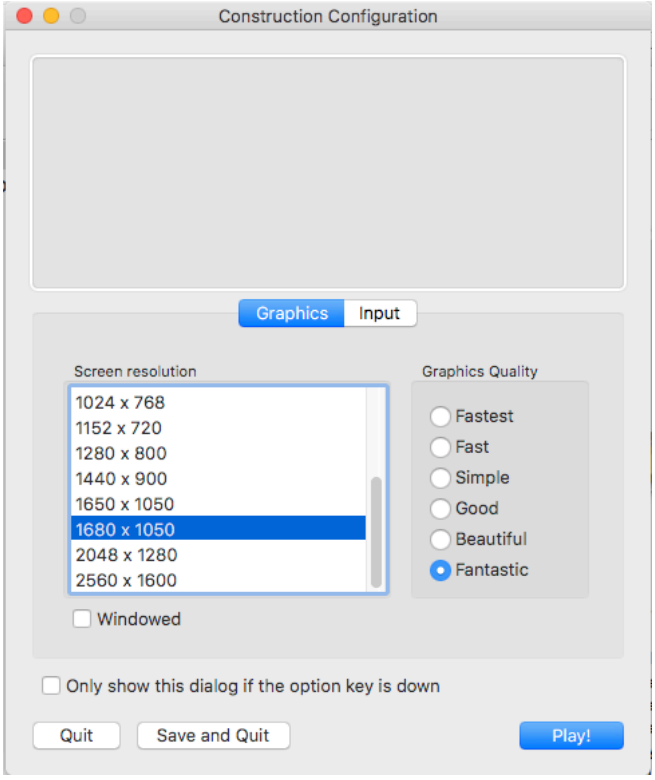
Go to https://github.com/zhuyidiwow/Construction/releases/tag/alpha, click on the "YiCon.zip" link to download the game. Un-zip the downloaded file, and you will get the following:

For macOS users, double-click on "YiCon.app" under "Mac" folder to open the game.

For Windows users, double-click on "YiCon.exe" under "Windows" folder to open the game.

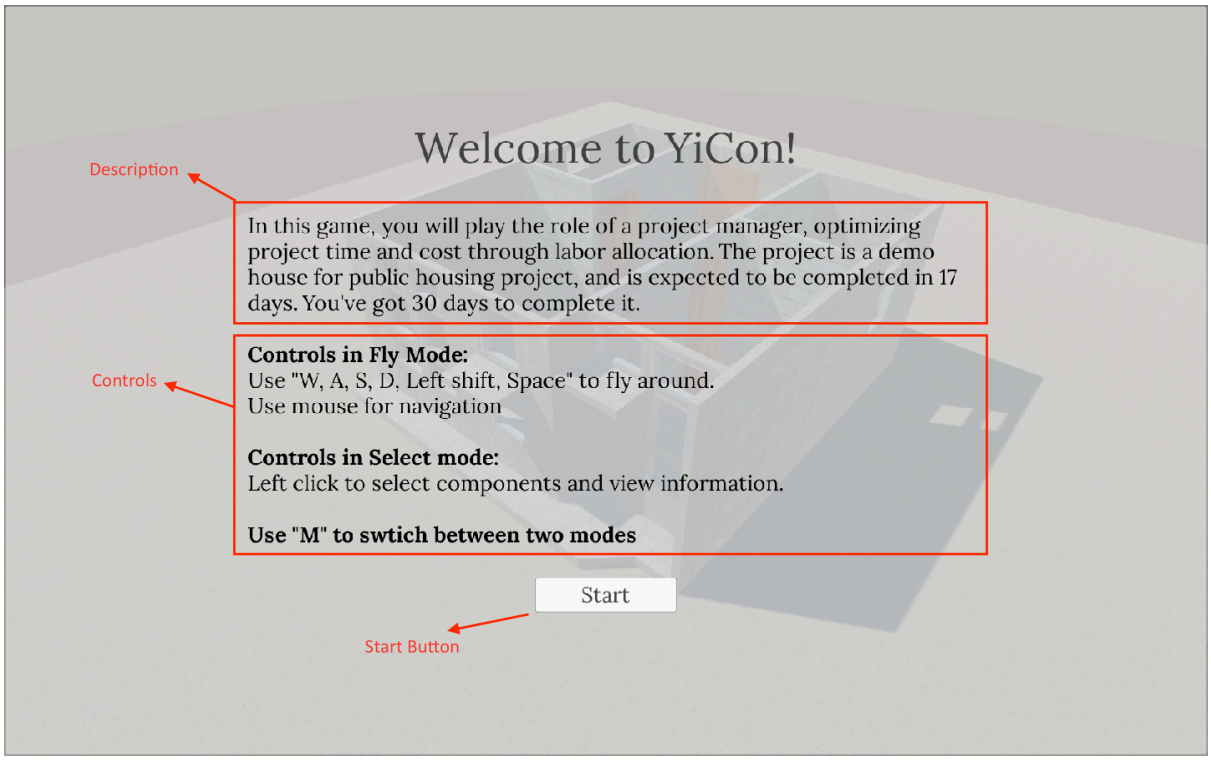
Then, select "1680 x 1050" for "Screen resolution", select "Fantastic" for "Graphics Quality", uncheck all checkboxes, and click "Play!" to run the game.

This game is part of Zhu Yidi's disseration

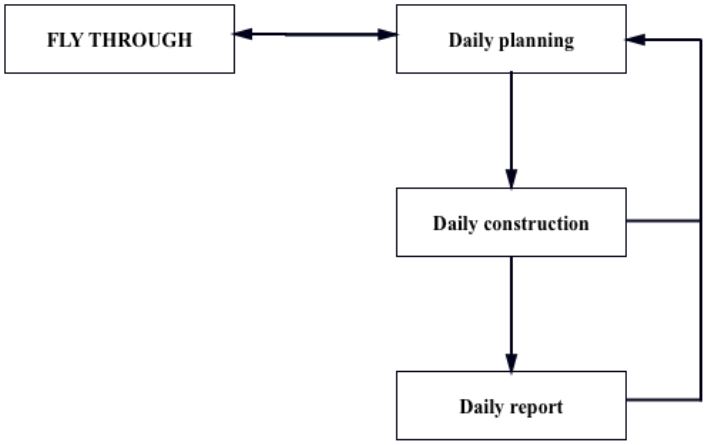



**User interface and game flow**

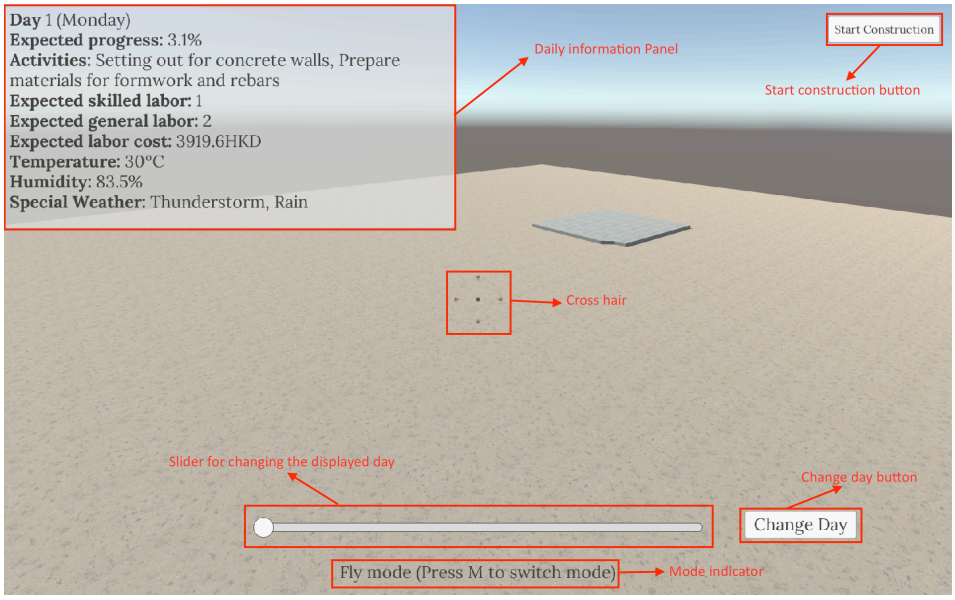
A welcome screen will appear first. Read the description and click on the "Start" button to start.



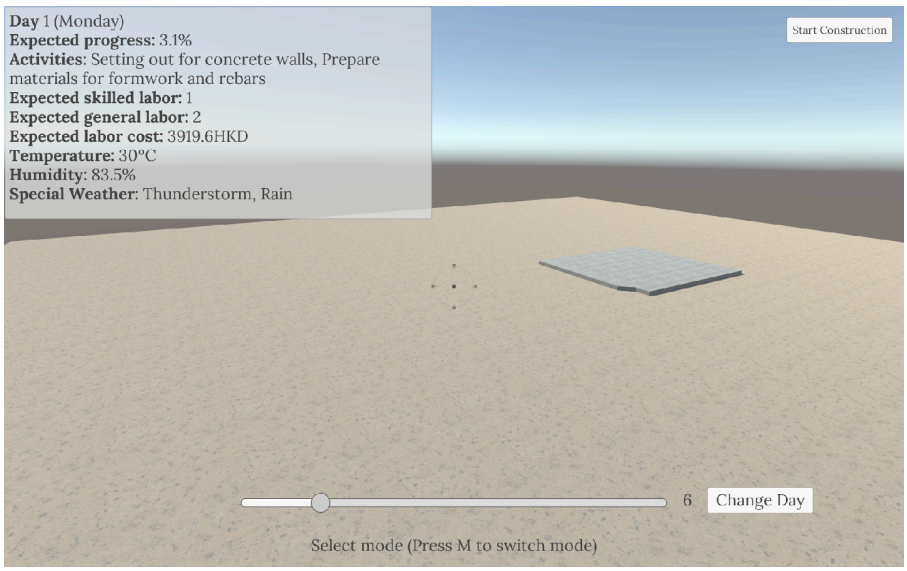

This game is separated into four phases as shown in the picture below.



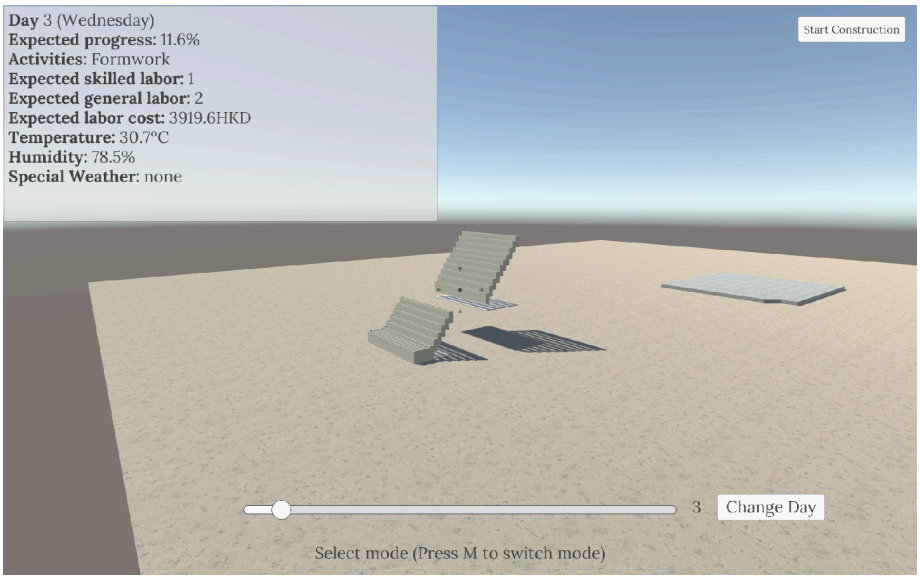

After clicking start, you will be directed into the "FLY THROUGH" phase. In this phase, you start with "Fly" mode. In this mode, you can use "W, A, S, D, Left Shift, Space" keys to fly around and use the mouse for navigation, but the cursor is hidden. You can press "M" key to change to "Select" mode, and press "M" key later to switch between the two phases. In "Select" mode, the cursor will be shown, so you can click on buttons and use sliders.




In this phase, information about construction will be displayed in the "Daily information panel" according to current the displayed day. You can drag the handle on "Slider for changing the displayed day" to select your desired day for display, and click on "Change day" button to change to that day.




After clicking "Change day" button, the information displayed in the "Daily information panel" will change according to the day you selected. Also, an animation will start to indicate the construction activities. The components which should have been completed on that day will fly in from above, and the components which should have been removed on that day will fly out.




In "fly through" phase, you can also click on different components in "select mode". The select component will be highlighted with "yellow color", and the information about this component will be displayed in the "Component information panel". Press "Esc" key to un-select the component and dismiss the information.

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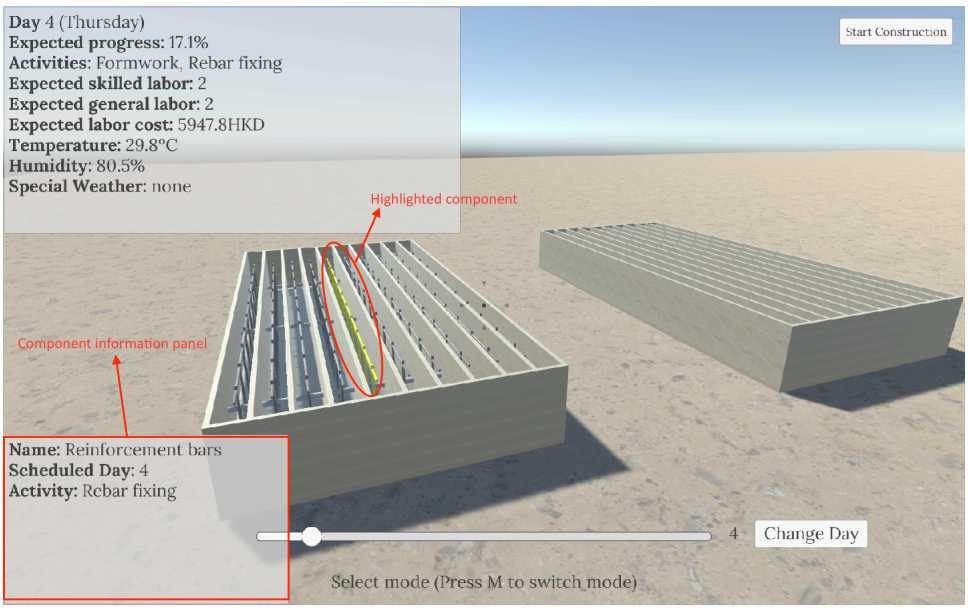
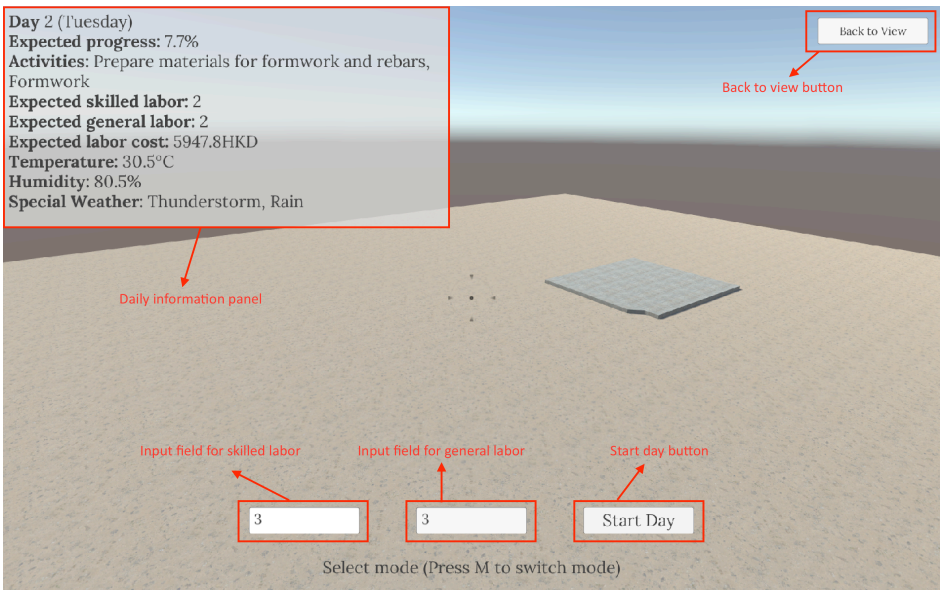
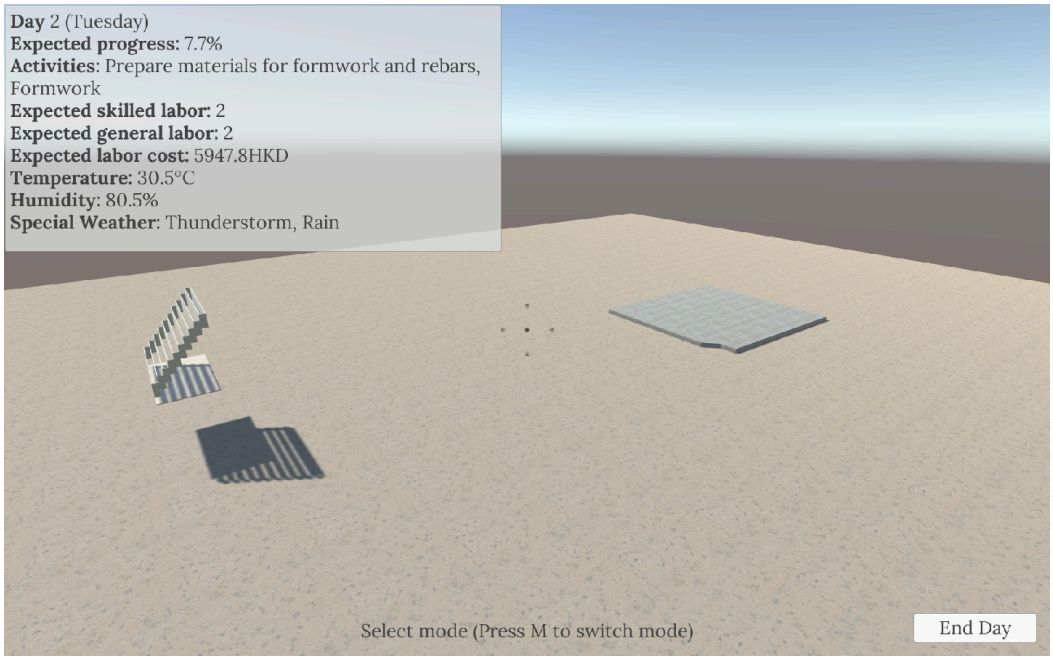



You are advised to go through the whole construction process day by day from day 1 to day 17. Also, you can fly to a position where you can get an overview of the construction site, so you do not need to change your position to see particular animations. After getting yourself familiar with the construction process, you can click on the "Start Construction" button to go to "Daily planning" phase.

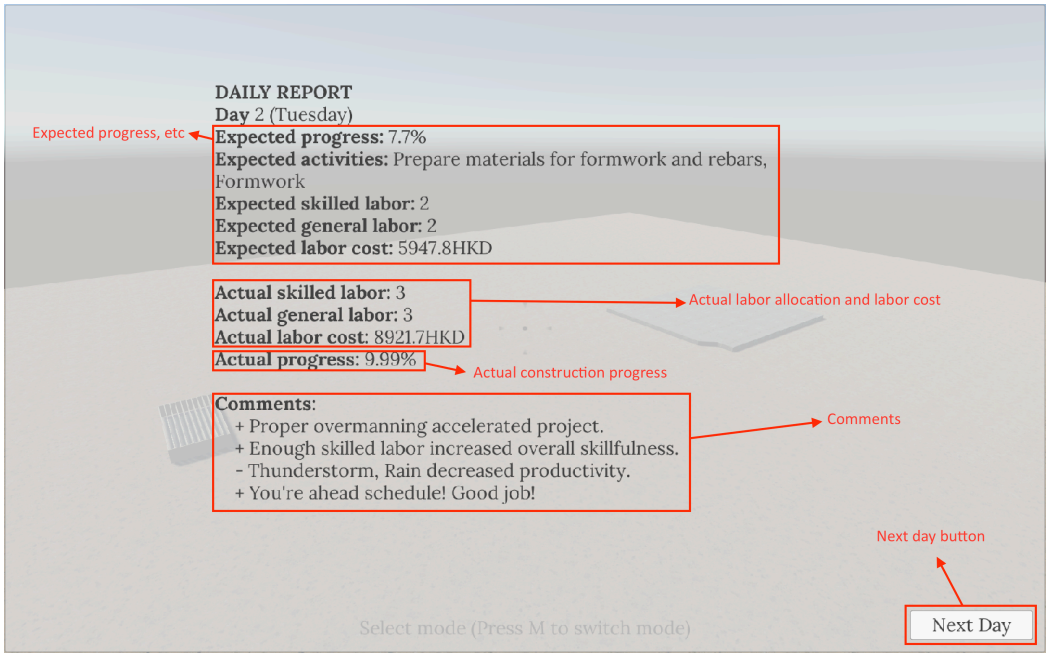
In this phase, the day displayed will be switched to the actual construction day. Two input fields for inputting skilled labor and general labor number will appear at the bottom. You can make the decision according to daily information, and click "Start day" button when you are ready. You can always switch between "Fly through" phase and "Daily planning" phase with the button at the top-right corner.



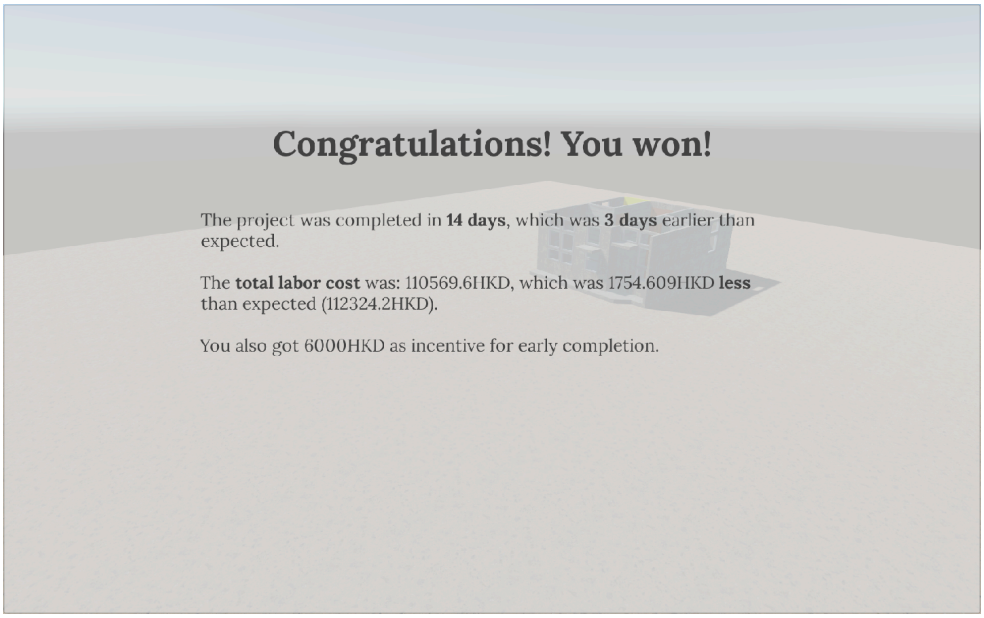
After clicking "Start day", daily construction will begin, which is indicated by an animation. You can click on "End day" button after the animation completes.




Then, you will be presented with a daily report. This report shows both expected and actual factors, and give comments according to your performance. Positive comments are prefixed with "+", while negative comments are prefixed with "-". You may adjust your labor allocation strategy according to the daily report. After examining the daily report, click on "End day" to go to next day, and you will be brought back to "Daily planning" phase.



After you complete the project or run out of days, a result page will be presented. The following pictures show some possible results.



After examining the result, you can take a screen and quit the game. Press "Command + Q" if you are on macOS, or press "Alt + F4" if you are on Windows.