CS-GY 9053 Fall 2021 Final Project Description – Crafting Table

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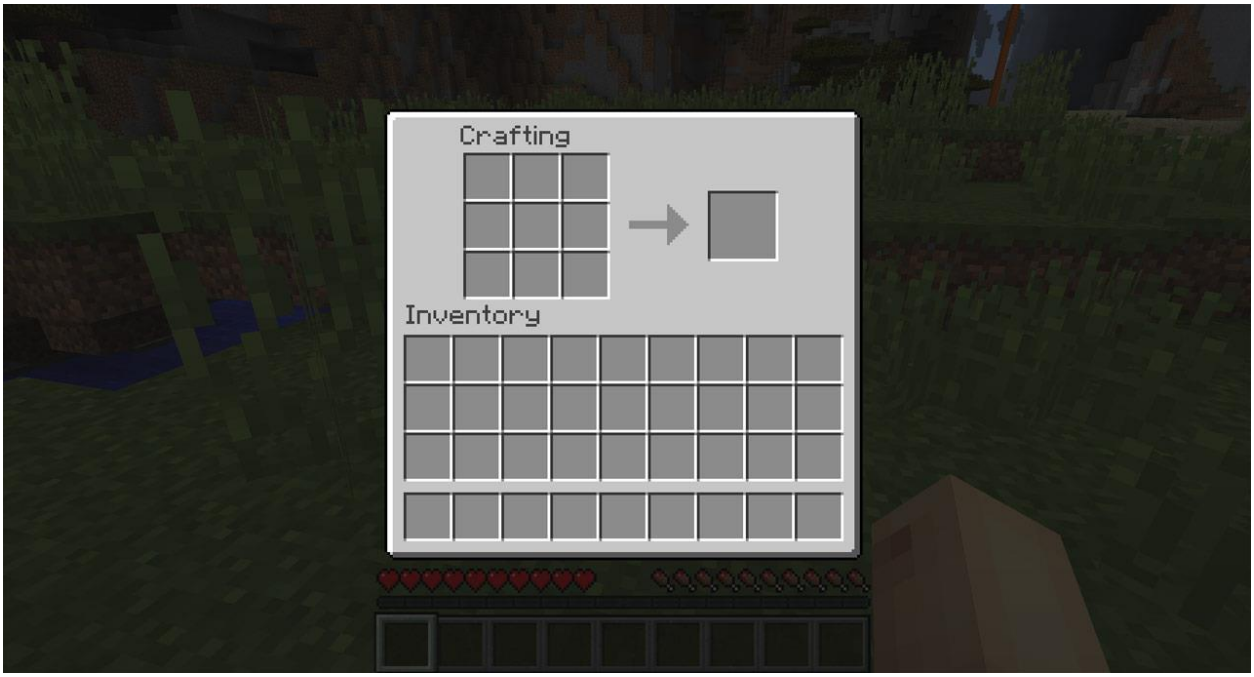
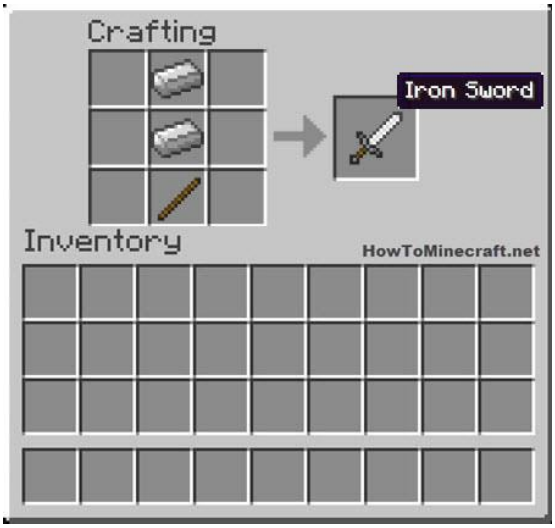
Crafting Table is a project aiming to resemble the crafting system from the Minecraft game. This project consists of a GUI of the crafting table itself, a server as it requires network connectivity to run, and an inventory system that is handled by an online database.



The crafting table itself consists of nine empty slots allowing the user to put in different combinations of raw material (wood, stone, iron, etc.) in designated layouts to create desired items, such as the crafting of an Iron Sword below:



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The user will start out having a supply of raw material existing in the inventory to work with. As with in Minecraft, the user will for example start with raw wood blocks and convert them into planks and then into wood sticks to order to make the tool handle for swords, axes, etc. Exceptions will be handled when there is not enough items required to craft the desired item, or when the inventory is full. Items can be "dropped" which will be deleted from the inventory.

This crafting table is a close replica of the in-game system, minus item stacking and splitting features. This program features 10 raw ingredients and 30 recipes, all of which can be looked up online. Advanced movement options between slots are implemented, such as swapping and deselecting the last item if the currently selected one is of the same type. These implementations allow for a fluid robust inventory management system. The program has been extensively tested for bugs and durability. Common ways to exploit such crafting systems have been addressed for this program.

Changes made to the database are permanent. When the update inventory button is pressed, the content and layout of your current inventory will remain the same when you close the program and reopen. The database comes with one prefilled inventory.

The advanced Java features utilized for this project are:

1. Inner Classes, HashMap, and Parameterization
2. Multithreading for multiple client connections to the server at once
3. JDBC for database interactions
4. JFrame GridBagLayout