

LSC User Guide

For LSC v1.0

(This guide can also be found within LSC.

Hit Escape, and click “Click here to look at the guide” at the top of the screen)

Welcome to Hesterry's Wonderful Life Skill Calculator! This tool was designed from the ground up to make calculating the profit of crafting various items incredibly fast and easy. While LSC can be a little bit daunting at first, it's actually quite easy to use, and requires very little setup to get started. This guide will take you through just about every feature it has to offer, starting with a quick-start guide to cover the basics.

Before we dive in, keep in mind that any time a “database” is mentioned, it's usually referring to the “ItemDatabase.csv” file in the LSC sub-folder, unless explicitly noted otherwise. You can quickly open this folder by going to LSC's Main Menu > Settings > Show Database Control > Open Database Folder.

If you get stuck, or are running into other issues, please check the help page:

<https://github.com/Hesterry/LSC/wiki/Help-and-FAQ>

Or ask for help in the Discord server here:

<https://discord.gg/V5vWSsu>

Lastly, while this tool does provide links to the bdocodex website, I am not associated with them in any way. This simply seemed like a convenient feature, and will be removed should the owner(s) of the website request it.

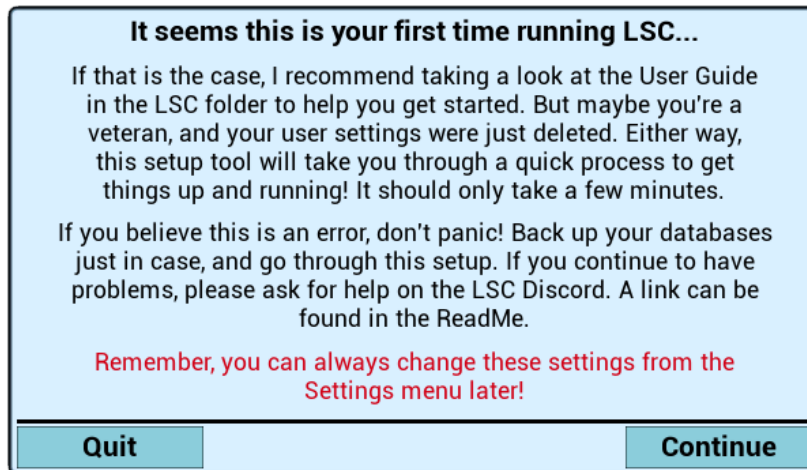
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Section 0 – Quick-Start Guide

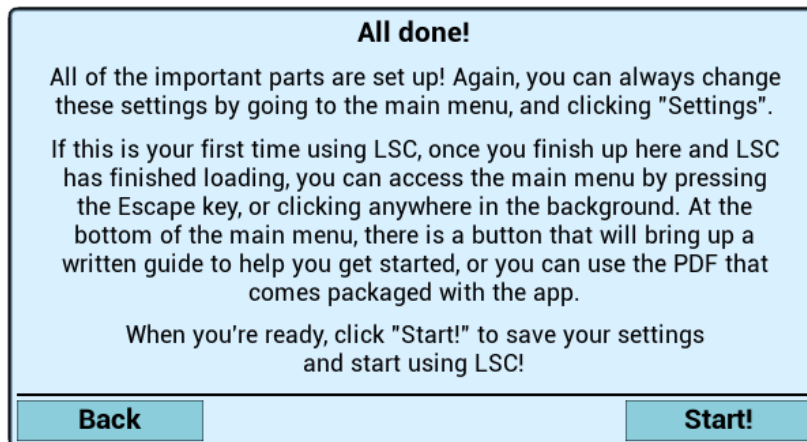
This section will go over the most basic steps to start using LSC. If you're already somewhat familiar with how to use it, or if you're looking for information on its more advanced functionality, you can probably skip ahead to Section 1. Otherwise, let's get started from the very beginning...

If you've never run LSC before, run LSC.exe now, and you should see this pop up in the LSC window:



This will walk you through the basic setup of LSC. Simply follow the instructions provided on screen, and mouse over the various settings to see what they do.

After a handful of steps, you should come to this screen:

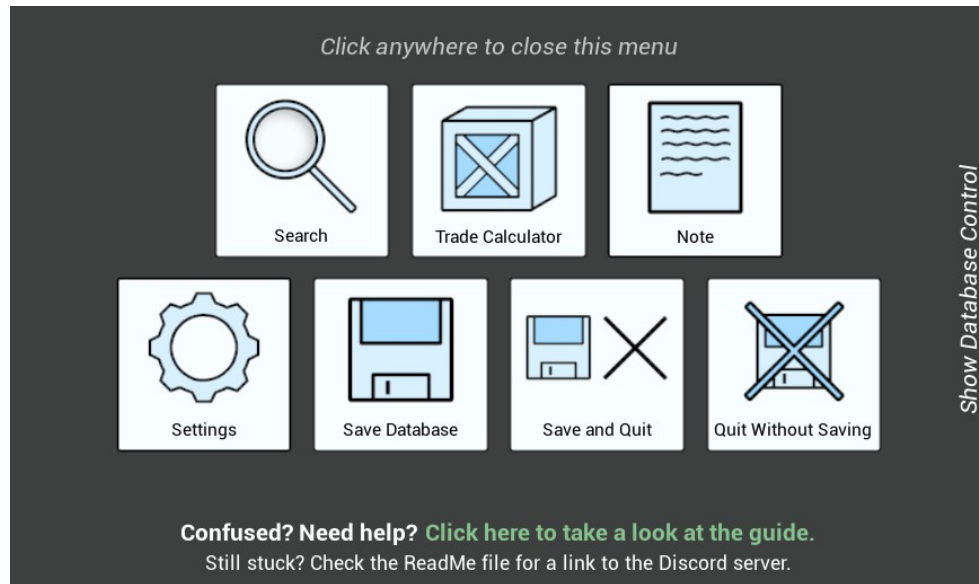


If you've configured all of your settings correctly, press "Start!" and let LSC finish loading.

After a few moments, you should see the splash screen appear:



At this point, LSC is loaded and ready to go! Start by either clicking the background, or pressing escape to bring up the main menu.



While all of these things are explained in detail in the later sections of this guide, let's focus on the most basic functionality of LSC: The search tool and the item inspector. So, click "Search".

Item Search					
Profit Mode		Search for...		Show Filters	Show Favorites
Item	Cost	Value	Profit	Return	Scratch
Flashbang	57,853s	44,361s	-13,492s	-23.32%	-3,121s
Fire Shot	21,715s	44,361s	22,646s	104.29%	33,017s
Poison Shot	48,017s	51,755s	3,738s	7.78%	11,651s
Flare	54,397s	14,874s	-39,523s	-72.66%	-29,152s
HP Potion (Small)		80s			
HP Potion (Medium)		200s			
MP Potion (Small)		80s			
MP Potion (Medium)		200s			
Whale Tendon Potion	926,690s	231,572s	-695,118s	-75.01%	-695,118s
[Party] Elixir of Amity	48,578s	61,261s	12,683s	26.11%	16,540s
[Party] Improved Elixir of Amity	146,568s	91,897s	-54,671s	-37.30%	-100,264s

This tool pulls data from the ItemDatabase.csv, and compiles it into a searchable list. It also estimates the material cost, value, profit, return on investment, and the profit of making a given item from scratch. It can also sort by these values by clicking the corresponding button at the top.

Lets take a look at the bread and butter of LSC - the item inspector. Type “Valencia” in the search box, then either double-click “Valencia Meal”, or right-click it and select “Open in Inspector”

Valencia Meal			
Recipe Mode		Adaptive Mode	Scratch Mode
▶	24,525s	1x	Teff Sandwich
▶	18,999s	1x	King of Jungle Hamburg
▶	16,221s	1x	Couscous
▶	1,184s	2x	Fig Pie
▶	1,148s	2x	Date Palm Wine

Number of Crafts:	x1
Total Material Cost:	64,409s
Total Sell Value:	68,070s
Net Profit:	3,661s
Goal Profit:	0
List Price Required:	22,692s

Show additional settings

This is the item inspector. It takes the item values from the database and calculates the material cost cost, sell value (after tax), and profit of a given item. You can easily update the price of an item's material by clicking one of the blue buttons on the left, or you can update the value of the item itself by clicking “Show Additional Settings” and clicking the current value. You can also adjust for batch crafting by changing the “Number of Crafts” value.

That's it! Using LSC's core functionality is that easy. Of course, there is much more to it, so I recommend working your way through the rest of this guide when you have the time.

Warning for new users: Do not adjust the other values under "Show Additional Settings" until you are familiar with their functionality. It can lead to some confusing profit calculations, and be tedious to fix later! Of course, if you do cause irreparable damage to your database, you can always reset it by either closing LSC and deleting your databases from the LSC subfolder, or go to Main Menu > Database Control > Reset Databases.

Quick-Start Tips

- The item database does not save automatically! Unless you enabled auto-save in the settings, it will only save if you save it from the menu - and even then, it will only save periodically. While price changes will affect other tools during your session, they will be lost when you close LSC if you don't save.
- Update the item prices before you craft! The default values (especially for crafted items) are old, and possibly out of date. While base materials (like meat and milk) rarely fluctuate in price, anything crafted can change from day to day, or even hour to hour. To help with this, you can use the search tool's price mode, which automatically sorts items by the last time they had their prices updated (oldest to most recent). Simply bring up the search tool and click “Profit Mode” in the top-left to switch modes.
- Make sure your settings are configured correctly! Especially the Value Pack, and those relating to production time (Alchemy, Cooking, Processing Rate), as well as Trade Skill Level and Transport Path (if you do any trading, anyway).

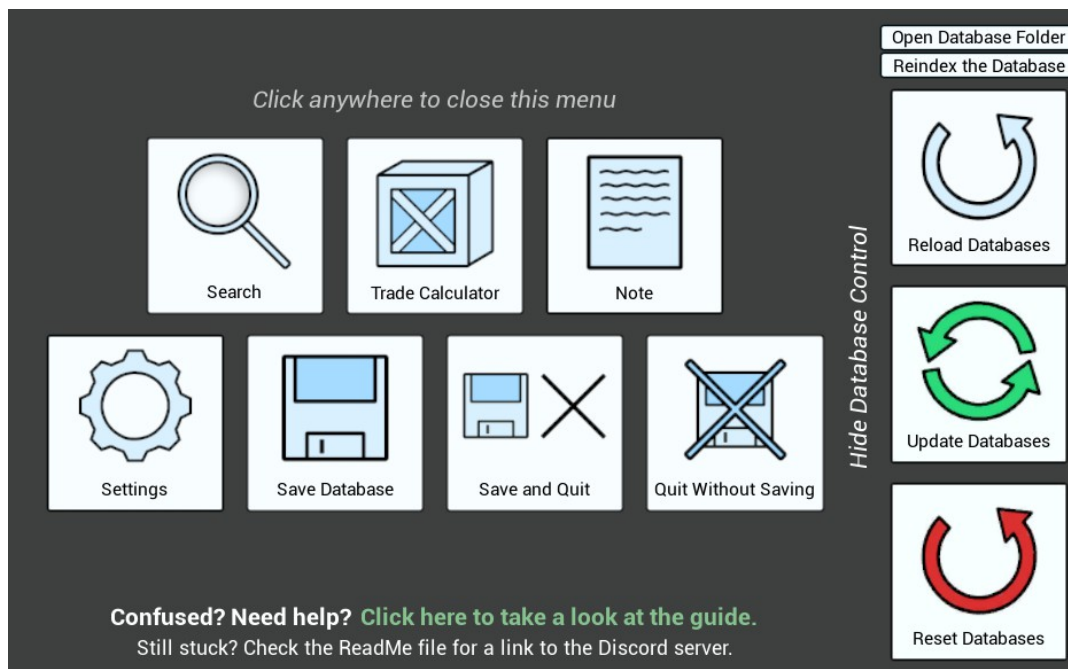
Section 1 – The Workspace and Main Menu

Once LSC has loaded, you will be greeted by a mostly blank screen. This is the workspace, and LSC's various tools will be placed here as they are loaded up. There are also two buttons here:

“Show/Hide Note List” in the top left will toggle the display of a list of stored notes, which are saved between sessions. A note can be added to this list by clicking “Store Note” at the bottom of a note.

“Show/Hide Watchlist” in the top right toggles the display of an item watchlist, making it easy to bring up information on items you look up frequently. Items can be added to the watchlist using the interaction menu (which is brought up by right-clicking an item name; see Section 3).

Now, lets take a look at the Main Menu. Either click anywhere in the background of the workspace, or press escape. You should see something like this:



Lets briefly go over what these buttons do, then we'll go over each aspect of LSC in detail.

“Search” allows you to search through items stored in the database file. It also provides various profit estimates, and can sort by these values.

“Trade Calculator” brings up a trade item profit calculator, much like what you've probably seen on various websites on the internet.

“Create Note” creates a simple text note that you can edit. These notes can also be saved between sessions using the “Store Note” button at the bottom of the note.

“Settings” allows you to adjust the various settings of LSC.

“Save Database” saves any changes you've made to the various databases (such as an item's market value) to their respective CSV files. Remember, changes to the databases are not automatically saved, unless you enable auto-save in the settings!

“Save and Quit” saves any changes to the databases, then quits LSC.

“Quit Without Saving” will simply close LSC without saving the database.

“Show/Hide Database Control” will toggle whether the following buttons are displayed or not:

“Open Database Folder” will open the folder where the database CSVs are stored in a Windows explorer window.

“Reindex the Database” will forcefully reindex the database. These indexes are used to speed up and sort the search tool. When an item's value is updated, these indexes are not automatically changed, so the values shown in the search tool will not automatically updated. Reindexing the databases will bring them up to date. This can be set to run automatically whenever a new search tool is opened by enabling “Auto Reindex the Database” in the settings menu. Indexes are only used by the search tool, so this has no effect on the other tools.

“Reload Databases” will reload all databases from their CSV files, overwriting any changes made in LSC since the databases were last saved or loaded.

“Update Databases” will update the database CSVs using the internal databases in LSC. This won't overwrite prices, but will add missing entries, fix broken entries, and so on. It can be configured before it runs, and it's recommended that you make backups before doing so.

“Reset Databases” will erase all of the databases, and replace them with LSC's internal databases, returning everything to their default values. You will have to confirm before this runs - and always make backups before doing so!

Whew! Now lets get to the good stuff by taking a look at the Search tool...

Section 2 – Search

Click the “Search” button in the Main Menu, and you should see something like this pop up:

The screenshot shows a 'Search' window with a light blue header and a white body. The header contains a minimize button (1), the title 'Search', and a close button (2). Below the header is a toolbar with a 'Profit Mode' button (3), a search input field (4), a 'Show Filters' button (5), and a 'Show Favorites' button (6). The main area is a table with columns: Item, Cost (7), Value, Profit, Return, and Scratch (8). The table lists various items with their respective costs, values, profits, returns, and scratch values.

Item	Cost	Value	Profit	Return	Scratch
Flashbang	57,853s	44,361s	-13,492s	-23.32%	-3,121s
Fire Shot	21,715s	44,361s	22,646s	104.29%	33,017s
Poison Shot	48,017s	51,755s	3,738s	7.78%	11,651s
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HP Potion (Small)		80s			
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MP Potion (Small)		80s			
MP Potion (Medium)		200s			
Whale Tendon Potion	926,690s	231,572s	-695,118s	-75.01%	-695,118s
[Party] Elixir of Amity	48,578s	61,261s	12,683s	26.11%	16,540s
[Party] Improved Elixir of Amity	146,568s	91,897s	-54,671s	-37.30%	-100,264s

Pretty straightforward, but lets look at what each part does...

- 1) This minimizes the window. Every tool has this button.
- 2) This will close the window. Every tool also has this.
- 3) This button switches between “Profit Mode” and “Price Mode”. Profit mode displays the various costs and estimated profits for crafting items. Price mode lists an item's current and historical prices, and when the price was last updated. Price mode is always sorted by date updated, from oldest to most recently updated.
- 4) This is the text entry box for searching.
- 5) This brings up a list of filters for including/excluding various items.
- 6) This will bring up a favorites menu, letting you save your search settings for later use.
- 7) Not only do these labels note what the numbers below them mean, but the search list can be sorted and reverse-sorted by clicking them. Mat cost is the total material cost of the item, based on the current prices in the item database file. Value is the currently set market value of the item. Profit is calculated using a formula which accounts for the item's value, production multiplier, the value of any crits, tax, and material costs (we'll be going over specifics of this formula in the next section). Return is simply what percentage of the material cost is gained as profit. Scratch is the estimated profit for crafting the item from scratch.
- 8) This area will populate with a list of items that fit your search criteria.

Section 2.1 – Filters

Click the “Search Filters” button, and an additional window will pop up:



The image shows a window titled "Filters" with a light blue background. Inside the window, under the heading "Search by...", there are seven radio button options. The first two options, "Item name" and "Item source", are selected, indicated by a purple fill in their radio buttons. The remaining five options, "Hide base materials", "Hide items with a 'free' material", "Hide trade items", "Hide party elixirs", and "Hide crit food and elixirs", have unselected radio buttons with a light beige fill.

Filters	
Search by...	
<input checked="" type="radio"/>	Item name
<input checked="" type="radio"/>	Item source
<input type="radio"/>	Hide base materials
<input type="radio"/>	Hide items with a "free" material
<input type="radio"/>	Hide trade items
<input type="radio"/>	Hide party elixirs
<input type="radio"/>	Hide crit food and elixirs

“Item name” and “Item source” determine how items are searched - either by the item's actual name, or by its source (such as gathering, cooking, or alchemy).

“Hide base materials” hides items with no recipe, such as animal blood or timber.

“Hide items with a 'free' material” hides items that have a material with no price associated with it, since they often have distorted profit calculations.

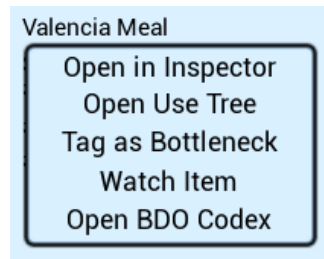
“Hide trade items” hides any item noted as a trade item in the database, such as crates, coins, and similar items.

“Hide party elixirs” hides any item with the [Party] tag in it, such as [Party] Elixir of Shock.

“Hide crit food and elixirs” hides the blue/yellow/orange variants of food and elixirs.

Section 3 – The Interaction Menu

Much of LSC's functionality can be accessed by right-clicking an item's name, such as an item in the search tool, or a material name in the inspector.



What you see above is what's displayed when “Valencia Meal” is right-clicked in the search tool. The options shown can vary slightly, depending on what is being right-clicked. In this case, we have the following:

“Open in Inspector” will open the item in the item inspector (see Section 4). If the right-clicked item is a trade item, this will instead say “Open in Trade Calc”.

“Open Use Tree” will show what items can be crafted with the given item (see Section 5).

“Tag as Bottleneck” will tag the item as a bottleneck for crafting, which will highlight it in red in the material list of the item inspector.

“Watch Item” will add the item to the watchlist in the workspace (see Section 1).

“Open BDO Codex” will open the bdocodex.com webpage for the item.

What isn't shown here are these two options:

“Open Material Group” will show all items associated with the given material group, such as Meat 1 or Blood 3 - if the given item is associated with one.

“Rename Widget” will appear when right-clicking the top bar of a tool, allowing you to rename it. This can be very useful for renaming and saving notes between sessions, among other things.

Tip: Double-clicking most item names is a shortcut to bring up the item inspector or trade calculator, or the use tree if the item is a base material.

Section 4 – The Item Inspector

Open up an item in the inspector by searching for a non-trade item, and either using the interaction menu to open it in the inspector, or simply double-click the item name. You should see something like this:

The screenshot shows the 'Valencia Meal' item inspector. At the top, the item name 'Valencia Meal' is labeled with a red '1'. Below it are three tabs: 'Recipe Mode' (labeled with a red '2'), 'Adaptive Mode', and 'Scratch Mode'. To the right of these tabs is an 'Info' button labeled with a red '3'. The main area contains a list of materials with their quantities and costs, labeled with a red '4'. At the bottom, there is a section for 'Number of Crafts' (labeled with a red '5'), 'Total Material Cost' (labeled with a red '6'), 'Total Sell Value' (labeled with a red '7'), and 'Net Profit' (labeled with a red '8'). There is also a 'Goal Profit' field (labeled with a red '9') and a 'List Price Required' field. At the very bottom is a button labeled 'Show additional settings' with a red '10'.

Quantity	Item	Cost
1x	Teff Sandwich	24,525s
1x	King of Jungle Hamburg	18,999s
1x	Couscous	16,221s
2x	Fig Pie	1,184s
2x	Date Palm Wine	1,148s

Number of Crafts:

Total Material Cost: 64,409s

Total Sell Value: 68,070s

Net Profit: 3,661s

Goal Profit: List Price Required: 22,692s

Show additional settings

This is the Item Inspector – it's likely the tool you're going to use the most. It's exceptionally powerful, but definitely takes some explaining.

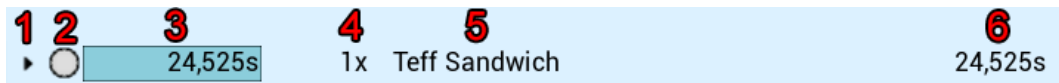
- 1) The item's name – clearly I needed to tell you that.
- 2) These buttons switch between the various material list modes. We'll go over what these do in the next section.
- 3) This toggles the display of an additional info panel, giving a variety of other useful, though non-essential data (see Section 4.3).
- 4) This is the material list itself, showing what items are required to craft the given item. Again, we'll go over this in detail shortly.
- 5) This is a simple, temporary craft multiplier, used for calculating batch crafting.
- 6) This is the total cost to craft the item, calculated by tallying up the cost of the item's materials above.
- 7) This is the total sale value of the item, which is calculated by multiplying the item's value by it's production multiplier, plus the value of any critical crafts multiplied by crit chance. This is then multiplied by tax rate. Or if you prefer a formula: $\text{Total Sell Value} = (\text{Item Value} * \text{Production Multiplier}) + (\text{Crit Value} * \text{Crit Chance}) * \text{Tax Rate}$

- 8) This is the net profit of the item, calculated by subtracting the total material cost from the total sell value. Note that this is also how the search tool calculates profits for non-trade items.
- 9) This allows you to enter a goal profit for this item. The required list price of the base item to meet this goal will be output on the right. Note that this assumes any crit items are sold at their current market value.
- 10) This toggles the display of additional settings for the inspector tool (see Section 4.2).

Next, lets take a deeper look at the material list.

Section 4.1 – Material List

First, lets look at a single material – the Teff Sandwich.



- 1) This arrow allows you to expand recipes to view their materials. We'll go over this in a moment.
- 2) This button is an “Override” toggle. Normally, the price (#3) is based on the current market value of the item according to the database. However, you can temporarily override this value and set a new one, without messing with an item's value history (more on value history in section 4.2), or without messing with how item profit is calculated in the search tool. Override values are saved, but separately from its actual prices. Check the tooltip for more details.
- 3) By default, this is the current market value for the material according to LSC's databases. You can click here to set this value, which will update that item's current and, if necessary, historical values. Note that if the override toggle is checked, this box will instead display/edit the override value. If no override value is currently set, this will display the current market value in green, until a custom override is set.
- 4) The quantity of the material required for a single craft.
- 5) The material's name.
- 6) The total cost of the material, calculated by multiplying its value by its quantity.

Note: You may have also noticed a small arrow to the right of “Fig Pie” and “Date Palm Wine” in the material list. That is used to swap in alternate materials from the AltRecipeDatabase.csv - simply click the arrow, and a menu with alternate materials will pop up, then click an item to swap it in. While there are a couple of example entries in this database, it otherwise needs to be configured manually. Fortunately, it's very easy to use. Details for manually adjusting the databases can be found at the end of this guide.

Tip: You can right-click a material's name, and tag it as a bottleneck. This tag is saved in the database, and will cause the item to be highlighted in red in the material list.

That's pretty much it! Lets take a look at the modes for the material list next.

As you can see, there are three modes in the Item Inspector: recipe, adaptive and scratch. The “Recipe Mode” is default, and offers the simplest view of the item's various recipes. Notice these materials here have a little arrow next to them. If you click this arrow, the recipe for that item will be displayed. Try clicking the arrow to the left of “Teff Sandwich”.

▼	24,525s	1x	Teff Sandwich	24,525s
▶	462s	1x	Teff Bread	462s
▶	10,778s	1x	Grilled Scorpion	10,778s
▶	10,710s	1x	Freekeh Snake Stew	10,710s
▶	1,181s	3x	Red Sauce	3,543s

Notice this gives us the exact recipe for Teff Sandwich, and has no effect on how Valencia Meal's profit is calculated. This is very useful if you quickly want to see how a particular sub-item is made, without having to open a new window – and notice you can keep expanding recipes, as long as there is a recipe to view. Lets move on to the next mode...

The second, and possibly most useful mode, is the “Adaptive Mode”. Click this button now to switch modes. Notice the recipe looks the same. Well, it should... for the moment. Try expanding the Teff Sandwich recipe again.

Valencia Meal					X
Recipe Mode		Adaptive Mode		Scratch Mode	Info
▼	24,525s	1x	Teff Sandwich	10,196s	
▶	462s	0.4x	Teff Bread	184s	
▶	10,778s	0.4x	Grilled Scorpion	4,311s	
▶	10,710s	0.4x	Freekeh Snake Stew	4,284s	
▶	1,181s	1.2x	Red Sauce	1,417s	
▶	18,999s	1x	King of Jungle Hamburg	18,999s	
▶	16,221s	1x	Couscous	16,221s	
▶	1,184s	2x	Fig Pie	2,368s	
Number of Crafts:				x1	
Total Material Cost:				50,080s	
Total Sell Value:				68,070s	
Net Profit:				17,990s	
Goal Profit:		0	List Price Required:		15,909s
Show additional settings					

Notice how the recipe shows 0.4 Teff Bread, Scorpion, and Snake Stew, and 1.2 Red Sauce. Also, the price of the Teff Sandwich has dropped from 24,525s to 10,196s. Additionally, the total cost and net profit for the Valencia Meal has updated to reflect this change in cost, as well as the goal profit!

Unlike recipe mode, adaptive mode accounts for the production multiplier of an item when determining the ingredients required. Since most cooking produces 2.5 products, it divided each material amount by 2.5 to give an approximation of how many materials you'd need for a single sandwich.

Additionally, adaptive mode re-calculates the cost of the item being expanded (in this case, Teff Sandwich), based on its actual material cost, and then updates the cost and net profit of the item we're inspecting (the Valencia Meal).

This makes it incredibly easy to see exactly what amounts of materials you need to craft an item, as well as adjust for which items you wish to craft vs those you simply wish to purchase.

However, note that adaptive mode does NOT account for critical crafts on the materials. In reality, you would potentially need even less materials, but since critical crafts vary wildly in value and usefulness, LSC ignores them when calculating material costs and requirements.

Last is the “Scratch Mode”. Click the button now, and lets take a look...

The screenshot shows a window titled "Valencia Meal" with three tabs: "Recipe Mode", "Adaptive Mode", and "Scratch Mode" (which is selected and highlighted in green). There is also an "Info" tab. The main area displays a list of materials with their respective quantities and costs. Below this list, there are summary statistics for the craft.

	Recipe Mode	Adaptive Mode	Scratch Mode	Info
<input type="radio"/>	287s	1.92x	Teff	551s
<input type="radio"/>	30s	5.76x	Mineral Water	172s
<input type="radio"/>	20s	1.73x	Salt	34s
<input type="radio"/>	20s	5.95x	Leavening Agent	119s
<input type="radio"/>	1,983s	0.48x	Scorpion Meat	951s
<input type="radio"/>	1,944s	0.05x	Milk	99s
<input type="radio"/>	20s	4.72x	Sugar	94s
<input type="radio"/>	560s	2.88x	Nutmeg	1,612s

Number of Crafts:	x1
Total Material Cost:	22,527s
Total Sell Value:	68,070s
Net Profit:	45,543s
Goal Profit:	0
List Price Required:	2,866s

Show additional settings

Scratch mode simply breaks down the item into its most basic materials, similar to adaptive mode, and adds them all up into a simple list. This lets you see just how many items you need to make a single craft of the item in question. Additionally, the total cost and net profit for the item is adjusted accordingly.

Note: You may notice that standard flour and dough is not broken down into its base material – cereal. This may change in the future, but for now, I found it far more useful to know specifically what amounts of cereal, flour, and dough I need to craft something, rather than just seeing a chunk of cereal every time one of these materials is required.

Lets go back to the recipe mode, and take a look at the additional settings the inspector has to offer.

Section 4.2 – Additional Settings

Okay, click the “Show Additional Settings” button, and lets have a look.

Hide additional settings

1 ☐ Use Low ☒ Use Current ☐ Use High ☐ Use Override

2 24,426s 24,426s 24,426s 0s

Production Mutliplier: 3 x2.5

Include critical crafts in profits? 4 ☒

Crit Chance: 5 x0.2

Value of "Special Valencia Meal": 6 97,464s

Force disable tax? 7 ☐

Toggle Value Pack for... 8 Base Results: ☒ Crit Results: ☐

A little daunting at first, but I assure you, it's pretty simple.

- 1) These four options determine whether profit calculations are performed using the item's low, current, high, or override value. By default, LSC always uses the current values for profit calculations. Additionally, this is a temporary setting, and won't affect other tools or calculations.
- 2) Just below that, you can see the item's low, current, high, and override values. By clicking the current value, you can adjust the item's current market value. This will update the item's value in the database, as well as noting if it goes above/below the historical values, adjusting the high/low values accordingly. Clicking the record low or record high values will let you reset them and their “last seen” date to the current value of the item. You can also set and use the item's override value, similar to how a material's override toggle works (see section 4.1).
- 3) This is the production multiplier for the item – the average number of items produced per craft – and is used to calculate the “Total Sell Value” of the item. Updating this value will update the database as well.
- 4) This check box determines whether critical crafts (such as the Special Valencia Meal) are included in the sell value of the item. This is another temporary setting.
- 5) Crit chance determines the overall chance of getting a critical craft. In this case, the crit chance is 0.2, so if we did 100 crafting runs of the Valencia Meal, we would get 20 Special Valencia Meals. Much like the Production Multiplier, this will affect the Total Sell Value of the item, and will update the database.
- 6) This is the market value of the critical craft. Just like the current value of the base item, this can be updated, and doing so will update the database (and thus the sell value of this item).
- 7) This makes it possible to forcefully disable all tax on the item. It's mostly used for seeing how much money you'd save crafting things you use yourself, such as beer. This is another temporary setting.
- 8) This last setting is yet one more temporary setting. It allows you to override the use of the value pack, independently for both the base item (Valencia Meal) and crit item (Special Valencia Meal). This is mostly used by people who don't consistently have a value pack, and choose to stockpile their critical crafts for selling during the times they do.

Section 4.3 – Additional Info Panel

By clicking the “Info” button in the top right of the inspector, a panel like this will pop up:

Additional Info	
Return on Investment	202.17%
Total Crafting Time	27.85 seconds
Cooking	9.14 seconds
Processing	18.7 seconds
Profit Per Hour	5,887,888s
Sell Value Per Hour	8,800,222s
Total Tool Costs	1,666s

Above is what is displayed for the Valencia Meal with the inspector in scratch mode. The values are as follows:

“Return on Investment” percentage, just as displayed in the search tool.

“Total Crafting Time” is the total time required to craft the item, based on your crafting time and processing success rate (which can be configured in LSC's settings). In adaptive and scratch mode, this is further broken down into separate crafting times for alchemy, cooking and processing.

“Profit Per Hour” is what you'd expect - profit based on crafting time.

“Sell Value Per Hour” is also self explanatory, displaying the sell value of the item(s) after tax, but before accounting for materials.

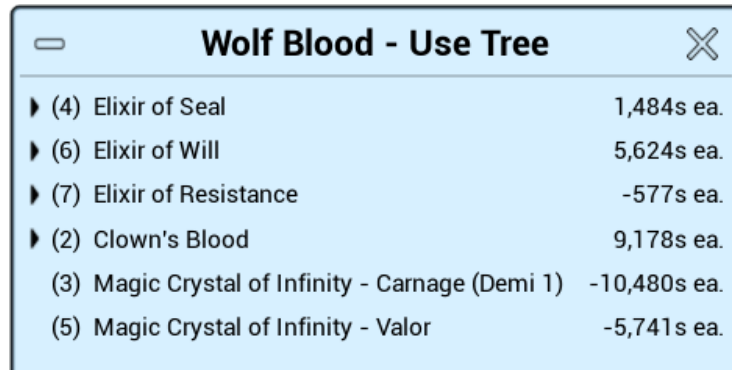
In adaptive and scratch mode, if the item involves cooking or alchemy, it will also display “Total Tool Cost”, based on the tool values in LSC's settings.

Note that all of these values will update appropriately based on what mode the inspector is in, and how recipes are broken down.

Well, there you have it! Everything the inspector has to offer... For now :)

Section 5 – Use Tree and Material Groups

The Item Inspector is great for calculating things involving a crafted item – but what about sorting through stockpiled materials you want to use? Well, LSC can do that too! Bring up the search tool, and make sure “Search by Item name” checked, and “Hide base materials” is unchecked. Now, search for “Wolf Blood” and double click the result.

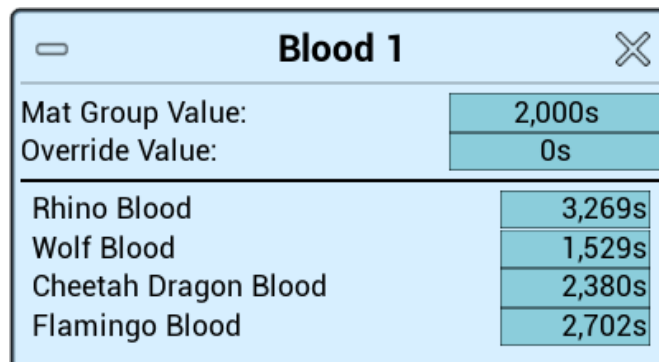


Wolf Blood - Use Tree	
▶ (4) Elixir of Seal	1,484s ea.
▶ (6) Elixir of Will	5,624s ea.
▶ (7) Elixir of Resistance	-577s ea.
▶ (2) Clown's Blood	9,178s ea.
(3) Magic Crystal of Infinity - Carnage (Demi 1)	-10,480s ea.
(5) Magic Crystal of Infinity - Valor	-5,741s ea.

This is the use tree. It functions a lot like the adaptive mode of the Item Inspector, but in reverse. On the left, the arrow allows us to expand and collapse recipes. Next to that is the number of the use tree item (in this case, Wolf Blood) required for the recipe in question. Then on the far right is a rough estimate of the profit per item for that recipe.

As you can see, a single craft of the Elixir of Seal uses four wolf blood, and Elixir of Will uses six. Not only that, but if we click the arrow for Elixir of Seal, we can see that the Skilled Alchemist's Elixir of Seal Alchemy Box uses 16 wolf blood. We can also right-click any of these items to bring up the interaction menu, letting us open them up in the inspector!

However, we know that there are other bloods that can make these things... Lets take a look at those, shall we? Right-click “Wolf Blood” at the top of the window, and click Material Group.



Blood 1	
Mat Group Value:	2,000s
Override Value:	0s
Rhino Blood	3,269s
Wolf Blood	1,529s
Cheetah Dragon Blood	2,380s
Flamingo Blood	2,702s

This displays not only the individual items in the material group, but it also allows us to edit the values for those items, and the values of the group as a whole!

Caution: The profit per item in the use tree, while technically accurate, assumes the item is being crafted from scratch and requires no other bottlenecks - so these values can be very misleading! Also note that many “off-brand” bloods require MORE than the standard recipe suggests to function. LSC doesn't account for this in the use tree or the inspector, so be careful!

Section 6 – Trade Items

Lets take a look at trade items! Bring up the main menu again by hitting escape, or clicking on the background, then click “Trade Calculator”.

This tool functions much like other trade tools out there, except it's integrated with the same database that the the rest of LSC uses. Lets take a look...

Click the button to the right of “Trade Item”, and select “Mediah Timber Crate”.

Trade Calculator

Trade Item:

Transport Path:

Trade Skill:

☒ Desert Buff

Mediah Timber Crate

Trent to Valencia (99.84%)

Artisan 2

▶ ☐ 12,600s

▶ ☐ 19,000s

☐ 2,719s

5x White Cedar Plywood

5x Acacia Plywood

1x Black Stone Powder

63,000s

95,000s

2,719s

Number of Crafts:

Total Cost to Craft:

Total Sell Value

Total Profit:

x1

160,719s

151,947s

-8,772s

As you can see, the material list is identical to the inspector (when looking at a crafted trade item, anyway). In fact, it functions identically to the inspector in adaptive mode. So, clicking the arrow to the left of a crafted material will expand its recipe, and recalculate it's cost based on its materials, and adjust the profit values accordingly.

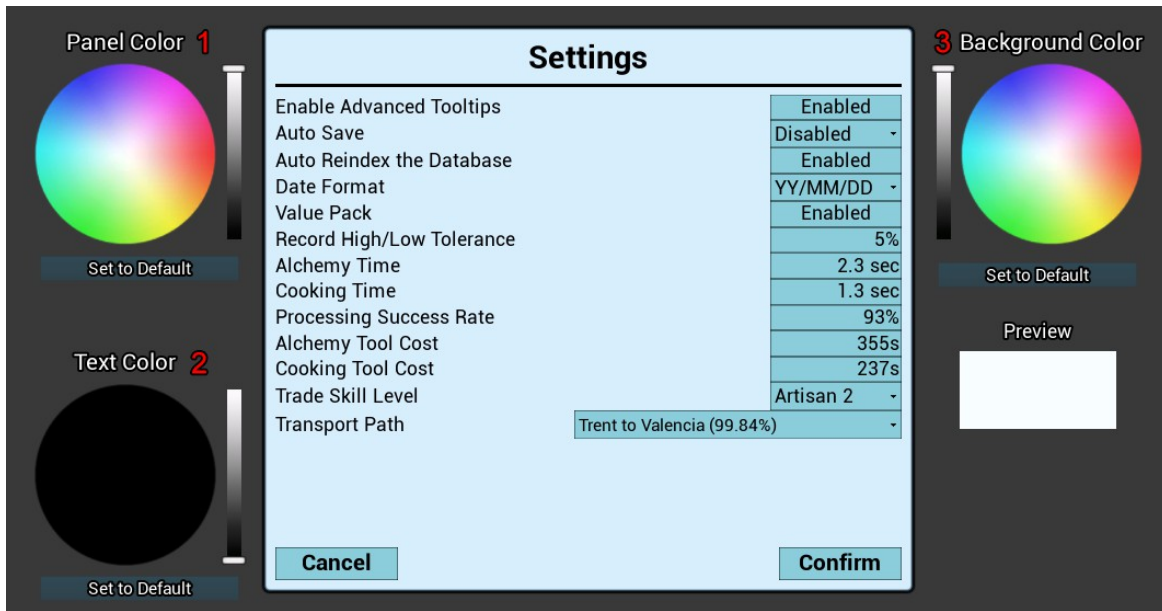
Of course, the sell and profit values are based on your transport path, trade skill, and the use of the desert buff, as set above.

Note: You can freely adjust your trade skill and transport path in this calculator, without it changing your default skill and path. These defaults can only be changed from LSC's settings, and those values are used to calculate the profits displayed in the search tool.

Section 7 – Settings

Before we dive into this, first thing's first... If you irreparably mess up your settings, go to “C:\Users*YourUsername*\AppData\Local\LSC\Saved\SaveGames”, and delete the “UserSettings.sav” file. This will NOT affect your databases – just the settings you see below.

Now, bring up the main menu, and click “Settings”.



- 1) This allows you to set the background color for the various panels. Note that the setting panel acts as a preview.
- 2) This allows you to adjust the text color. The setting panel will also act as a preview for this.
- 3) This adjusts the color for the workspace/background of the app. A little “Preview” box is provided. You may also notice the main settings panel changing color slightly - this is intended to simulate what the panels will look like on a different background, as they are slightly translucent.

As for the rest of the settings, from top to bottom...

“Enable Advanced Tooltips” enables or disables informative tooltips - things that explain functionality of LSC. This won't disable things that provide additional information and stats. {Default: Enabled}

“Auto Save” adjusts the auto-save period for the database. If this is disabled, you MUST save the database manually from the main menu, otherwise changes you make to item values will not be recorded. {Default: Disabled}

“Auto Reindex the Database” will cause the database to automatically be reindexed whenever a new search tool is opened. Otherwise, the search tool's displayed profit values can quickly become out of date, or otherwise misleading. If this is not done automatically, users can forcefully trigger a reindex by either restarting LSC, or going to Main Menu > Database Control > Reindex the Database. {Default: Enabled}

“Date Format” determines how dates are displayed in LSC. {Default: YY/MM/DD}

“Value Pack” determines tax rate when calculating the sell value of an item. Disabled, tax is the standard 35%. Enabled, tax is 15.5%. {Default: Enabled}

“Record High/Low Tolerance” determines how close the current price needs to get to the record high/low before it updates the “Last Seen” date. In other words, if this is set to 5%, and the record low for an item were 10,000s, the current price would have to dip below 10,500s for LSC to update the last seen date. {Default: 5}

“Alchemy Time” is used to determine crafting time. To calculate this accurately, total up your alchemy speed bonuses from clothes, food, and other buffs, and subtract the value from ten. Minimum 1. {Default: 10}

“Cooking Time” also used to calculate crafting time. Calculated the same as Alchemy Time, except using cooking time reductions. Minimum 1. {Default: 10}

“Processing Success Rate” is how often you succeed at a processing attempt. Calculated by tallying all of your processing success rate bonuses, and adding that value to 65. Maximum 100. {Default: 65}

“Alchemy Tool Cost” is used to calculate total tool costs for crafting. Calculated by taking the value of your alchemy tool of choice, and dividing it by its durability. {Default: 355}

“Cooking Tool Cost” is used to calculate total tool costs for crafting. Calculated by taking the value of your cooking tool of choice, and dividing it by its durability. {Default: 237}

“Trade Skill Level” is used to estimate the profits of trade items in the search tool, as well as what the default setting should be when bringing up a fresh trade calculator tool. {Default: Artisan 2}

“Transport Path” is used to estimate profits of trade items in the search tool, as well as what the default setting should be when bringing up a fresh trade calculator tool. {Default: Trent to Valencia}

That's it! Make sure to click “Confirm” to save your settings.

Section 8 – The Databases

This section is recommended for advanced users only! A typo as small as a misplaced space can completely break LSC - so be careful, and back up your database before making changes. Also, NEVER use a comma or carriage return (new line, “enter”, etc) anywhere in the database!

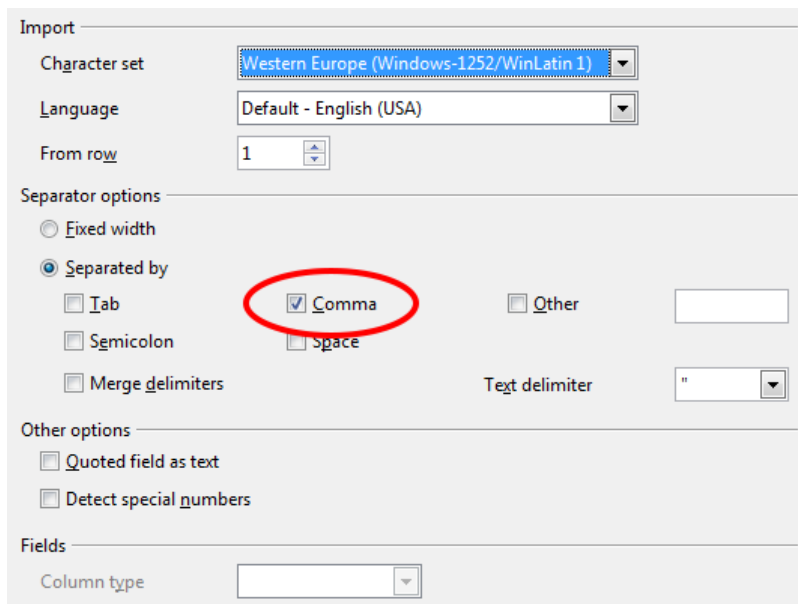
One key feature of LSC is that the databases are human-readable - not hidden away in code within the app. Unlike many apps and websites which keep this information protected, LSC provides this data freely. If you want to take this data and use it for your own projects, you are free to do so (though I'd appreciate appropriate credit!).

Since pretty much all of the data that LSC uses is stored in a set of spreadsheets, it's very easy to edit, add, or remove anything you wish - as long as you follow the appropriate methodology for doing so. This means that you can add things that I've missed, and adjust values, recipes, material groups, and so on.

First, you'll need something that can edit spreadsheets. Personally, I use OpenOffice, since it's free and easy to use. If you're using something else, the appearance of the following images may vary.

Once you have such an application, open up the LSC app folder, then open the LSC sub-folder. You should see a set of files named “ItemDatabase.csv”, “MatGroupDatabase.csv”, and “AltRecipeDatabase.csv”. CSV stands for “Comma Separated Values”, which as you'll see in a moment, is significant.

To edit one of these files, simply open it up in your editor, and you should be greeted by a window like this:



The image shows a dialog box titled "Import" with several sections. The "Character set" is set to "Western Europe (Windows-1252/WinLatin 1)". The "Language" is set to "Default - English (USA)". The "From row" is set to "1". Under the "Separator options" section, the "Separated by" radio button is selected. The "Comma" checkbox is checked and circled in red. The "Tab", "Semicolon", "Space", and "Other" checkboxes are unchecked. The "Merge delimiters" checkbox is also unchecked. The "Text delimiter" is set to double quotes. Under the "Other options" section, the "Quoted field as text" and "Detect special numbers" checkboxes are unchecked. The "Fields" section at the bottom has a "Column type" dropdown menu.

This determines how the CSV is read by the application. The important part here is that the “Separated by” section only has “Comma” checked. Essentially, CSVs are just text files, and (in this case) commas are used to determine the separations between different cells.

Click okay, and you should see a pretty ordinary spreadsheet. If it looks odd, close it and try again.

Also, a few general notes about database editing:

- 1) While you can edit databases while LSC is open, LSC will not be able to save or load them while they're open in an editor. LSC will continue to function normally otherwise, using the data that it has from the last time it saved/loaded.
- 2) I don't recommend adding completely new entries to a database, or changing recipes while LSC is open - weird things may happen. Though, if you want to try, it shouldn't have a negative impact on the databases themselves - just close and reopen LSC if you run into problems.
- 3) If you make a change in the database while LSC is open, you will need to save the database in your editor (NOT in LSC), close the editor, then click "Reload Database" within LSC's main menu for LSC to reflect the changes. Note that if you had made changes to the database from within LSC since you last saved it, this will overwrite those changes.

Now, let's go look at how these databases are set up...

Section 8.1 - ItemDatabase.csv

Lets start by taking a look at the core database - the item database. Once opened, you should see something like this:

	A	B	C	D	E
1	DB Ver.	1_180716			
2	ItemID	ItemName	CurrentValue	LastUpdated	LowValue
3	206	Flashbang	52499	2018/05/13	52499
4	207	Fire Shot	52499	2018/05/13	52499
5	208	Poison Shot	61249	2018/05/13	61249
6	215	Flare	17603	2018/05/13	17603
7	517	HP Potion (Small)	80	2018/05/13	80
8	518	HP Potion (Medium)	200	2018/05/13	200
9	520	MP Potion (Small)	80	2018/05/13	80
10	521	MP Potion (Medium)	200	2018/05/13	200
11	575	Whale Tendon Potion	94500	2018/05/13	94500
12	576	Superior Whale Tendon Potion	126000	2018/05/13	126000
13	601	[Party] Elixir of Amity	40277	2018/05/13	40277
14	602	[Party] Improved Elixir of Amity	60419	2018/05/13	60419
15	605	[Party] Resurrection Elixir	13103	2018/05/13	13103
16	606	[Party] Strong Resurrection Elixir	19655	2018/05/13	19655
17	607	[Party] Elixir of Human Hunt	31392	2018/05/13	31392
18	608	[Party] Elixir of Perfect Human Hunt	57563	2018/05/13	57563
19	609	[Party] Elixir of Frenzy	83183	2018/05/13	83183
20	610	[Party] Elixir of Endless Frenzy	124781	2018/05/13	124781
21	611	[Party] Golden Hand Elixir	21354	2018/05/13	21354
22	612	[Party] Glorious Golden Hand Elixir	115497	2018/05/13	115497
23	613	[Party] Elixir of Draining	70769	2018/05/13	70769

This databases houses nearly all item data - everything from ID, to recipe - and is the cornerstone for LSC's functionality.

Here are some rules for editing this database:

- 1) Never add a new line above the “DB Ver” row, or above the categories row. Also, never edit these values.
- 2) When adding a new item, the “ItemID” and “ItemName” categories for an item MUST be filled in. I also recommend filling in the “Taxed”, “Bottleneck”, “ProductionMultiplier”, and “Source” values, as some things will probably break without them.
- 3) Items must be sorted by ID. While it won't necessarily crash LSC to do otherwise, it will eventually cause issues - especially when trying to use LSC's updater to update the database.
- 4) Be careful to NEVER add duplicate item IDs or item names. Note that some items share the same name, but not ID – even in this case, you must use different item names. For example, “Magic Crystal of Crimson Flame – Carnage” has three variants. To keep this from breaking things, I had to change the item names to something different. In this case, I gave each variant a small tag at the end of the item name: “Magic Crystal of Crimson Flame – Carnage (Demi 1)”, “... Carnage (Human)”, and “... Carnage (Demi 2)”.
- 5) Regardless of what your setting is in LSC, dates must ALWAYS be in YYYY/MM/DD format in the database. LSC will reformat them automatically before displaying them. Changing their format in the database will break things.

Now, lets take a look at the categories...

“ItemID” refers to the in-game ID for the item. If you're unsure of what this is, look up the item on BDO Codex or similar, but make sure you're looking at the item entry, and not it's recipe, design, or whatever else. The URL should look something like “<https://bdocodex.com/us/item/9609>”. That number at the end of the URL is the ID.

“ItemName” is self explanatory.

“CurrentValue” is the current market value of the item. Like everything in this database, this must be manually input.

“LastUpdated” is when the item's price was last updated. By default, this will generally be when the item was added to the database, but it will update as prices are updated in LSC. To prevent (minor) issues, I highly recommend manually updating this date if you manually update the current value of an item in the spreadsheet. It shouldn't cause any bugs if you don't, but it may give LSC some trouble when it tries to auto-update the LowValue and HighValue when you launch LSC.

“LowValue” is the lowest recorded value for the given item. You can either input this in yourself, or let the app handle it itself. To be clear, even if you update the current value here, the app will automatically update the low value as needed when the app is launched.

“LowSeenDate” is the date the low value was seen last. Again, the app should take care of this on it's own.

“HighValue” and “HighSeenDate” - see previous.

“Override” is the override value set for the item. Essentially, this has zero bearing on the current/low/high values, and no bearing on profit calculations outside of the item inspector – and only then, when it's explicitly enabled for a given material.

“Taxed” determines whether the item is subject to tax or not. This should pretty much always be “Yes”, unless the item is a trade or imperial crate.

“Bottleneck” is just a tag that will highlight a material in red within the item inspector if it's enabled. It has no bearing on calculations or anything – it's just a convenience tool.

“Mat1Qty”, “Mat1”, and so on are the given item's recipe. Note that you should always fill this in from left to right – never leave blanks between materials, as it WILL break LSC. Note that spelling is especially important here. The spelling of a material MUST match the spelling of the material's entry elsewhere in the database. For example with the Carnage crystals I mentioned earlier, even though the item isn't actually called “Magic Crystal of Crimson Flame - Carnage (Demi 1)”, it is entered as such for the material for its upgraded version, “Magic Crystal of Infinity - Carnage (Demi 1)”, because that's how the former item was entered into the database.

“ProductionMultiplier” is how many of the base item is created (average) per craft. This value should always be set for any item with a recipe, even if it's just to 1. Things will break without it.

“CritChance” is how many critical versions of an item (IE, blue elixirs and special meals) are produced (average) per craft. If this has an entry, you must always fill in the “CritProduct”. Leave this blank if there are no crits for the item.

“CritProduct” is what item is produced when a critical occurs. If this is filled out, make sure that “CritChance” is also filled out. Again, leave this blank if there are no crits for the item.

“Experience” currently isn't in use. Eventually it will be used to calculate experience per craft.

“ProductionTime” should either be a number in seconds for processing cycle time, “Alchemy”, or “Cooking”. If it's one of the last two, your input alchemy/cooking time will be used when calculating production time and profit per hour.

“Source” is simply a tag used by the search tool for finding items by source.

“MaterialGroup” is used to tag items as part of a given material group. Refer to the MatGroupDatabase.csv to see what valid material groups are. If an item is part of multiple material groups, these tags can be separated by two forward slashes // .

“Tag” is mostly used for back-end - currently just to tag trade items so they can easily be handled by LSC. If you aren't sure whether to add a tag to a new item, compare it to similar items already in the database.

“Description” isn't currently used in-app. However, if you want to add a description for the item, this feature will eventually be supported.

That's it for the item database!

Section 8.2 - MatGroupDatabase.csv

Next up is the MatGroupDatabase.csv - where material group data is stored.

	A	B	C	D	E	F
1	DB Ver.	1_0				
2	GroupID	GroupName	CurrentValue	Override		
3	1	Cereal	374			
4	2	Dough	569			
5	3	Fruit	700			
6	4	Meat 1	2500			
7	5	Flour	600			
8	7	Bird Meat	945			
9	8	Dried Fish	1250			
10	9	Flower	800			
11	10	Seafood 1	3000			
12	11	Reptile Meat	2300			
13	13	Vegetable	450			
14	14	Gemstone	25000			
15	15	Blood 4	2300			
16	16	Blood 1	2000			
17	17	Blood 2	1300			
18	18	Blood 3	1400			
19	19	Blood 5	2800			
20	34	Hide 1	800			

This data denotes what valid material groups there are, which are then referenced in the MaterialGroup category of the ItemDatabase.csv. As you can see, it also stores the market value for the group as a whole.

Here are the rules for editing this database:

- 1) Never add a new line above the “DB Ver” row, or above the categories row. Also, never edit these values.
- 2) When adding a new group, the “GroupID” and “GroupName” categories for a group MUST be filled in.
- 3) Groups must be sorted by ID. While it won't necessarily crash LSC to do otherwise, it will likely cause issues.
- 4) Be extremely careful to NEVER add duplicate group IDs OR names.

Now, the categories...

“GroupID” refers to the in-game ID for the material group. If you're unsure of what this is, look up the material group on BDO Codex or similar. The URL should look something like “<https://bdocodex.com/us/materialgroup/15>”. That number at the end of the URL is the group ID.

“GroupName” is the name of the material group. Technically, you can name your groups whatever you want - the names just have to line up with those in the ItemDatabase.csv's “MaterialGroup” category, and in item recipes. For simplicity though, it's recommended to name them the same as what is shown on BDO Codex or similar databases.

“CurrentValue” is the market value of the group. You can set this to whatever you deem appropriate. By default, I simply took a very rough average for the commonly used/available items in that group.

“OverrideValue” functions the same way it does for items.

Section 8.3 - AltRecipeDatabase.csv

Last is the AltRecipeDatabase.csv, where alternate recipe information is stored.

	A	B	C	D
1	DB Ver.	1_0		
2	ItemName	StandardMaterialName	AlternateMaterialQuantity	AlternateMaterialName
3	Tea With Fine Scent	Flower		1 High-Quality Sunflower
4	Valencia Meal	Date Palm Wine		1 Mild Date Palm Wine
5	Valencia Meal	Fig Pie		1 Sweet Fig Pie
6				

This data tracks what materials can be swapped for other materials in a given recipe. As you've probably noticed, there is very little in here by default. This is because it would take months to fill out, as there are literally thousands of items and recipes that can be modified, and these modifications aren't necessarily consistent.

For example, it's possible that Honeycomb Cookie may require less potato dough than it does wheat dough. Even though you wouldn't think this is possible, it most definitely is (though not for Honeycomb Cookie - at least not to my knowledge). So, I've opted to leave this up to the user to do. Fortunately, it's fairly straightforward.

Here are the rules for editing this database:

- 1) Never add a new line above the “DB Ver” row, or above the categories row. Also, never edit these values.
- 2) ALL categories must be filled in, and filled in accurately. All names should line up to those in the ItemDatabase.csv, or a material group in the MatGroupDatabase.csv
- 3) Sorting does NOT matter. You can organize this data however you want, but I recommend keeping things grouped up by “ItemName”, as it will be easier to read and keep track of all of the entries for a single recipe.
- 4) Duplicate “ItemNames” are completely fine. In fact, entire duplicate entries shouldn't cause errors - LSC will simply show two copies of the same entry when looking at the alternate material list. Though, for clarity, I recommend not having two identical rows.

And the categories...

“ItemName” is the name of the item recipe we're putting in an alternate for. Note the distinction here - this is the recipe that contains a replaceable material, NOT the material that can be replaced.

“StandardMaterialName” is the name of the default material that can be swapped out. This can be an actual item name, or a material group (as named in the MatGroupDatabase.csv). Again, note the distinction - this is the default material that can be changed, NOT what it can be replaced with

“AlternateMaterialQuantity” is the quantity of the new material to be used.

“AlternateMaterialName” is the name of the new material, which will replace the standard material. This can also be a material group name.

For example, let's look at row 4. "Valencia Meal" is the recipe we're modifying, "Date Palm Wine" is the material we want to put in an alternative for, "1" is the quantity of the replacement, and "Mild Date Palm Wine" is the replacement itself.

So, in LSC, if you open up the inspector for Valencia Meal, and click the arrow to the far right of Date Palm Wine, then click Mild Date Palm Wine in the menu, the default "2x Date Palm Wine" will be replaced by "1x Mild Date Palm Wine". You can easily swap back to the default, or other alternates, by clicking this arrow again.

Also, notice there are two entries for Valencia Meal - one for Date Palm Wine and one for Fig Pie. This database works differently than the other two, so it's perfectly okay to have similar entries like this. You can even include multiple replacements for the same material. For example, you could add the following two entries:

"Tea With Fine Scent" - "Fruit" - "1" - "High-Quality Strawberry"

"Tea With Fine Scent" - "Fruit" - "1" - "High-Quality Grape"

LSC would display both of these as alternate material options in the inspector, without any issues.

Thank You!

That's it for the user guide! Thank you for taking an interest in LSC! Please see the ReadMe for a link to the Discord, credits, and information. Good luck, and I hope you find LSC as useful as I do! :)