MWC3 2023

ScrimmageSIM
BUSINESS SIMULATIONS

What is ScrimmageSIM?

ScrimmageSim is designed to be like an Enterprise Resources Planning (ERP) system. ERP Systems are used by most medium and large companies to run their businesses efficiently.

Arborcrest Ale Studios is a fictional company that represents a small regional brewery. There are multiple steps in the brewing process that are done by outside companies, for example, malting the grain. In the brewery, there are processes like mashing, lautering, and brewing that convert the grain to a sugar-water mixture called wort.

Yeast is added to the wort so that as the yeast grows, it converts the sugar in the wort into alcohol and carbon dioxide. In these simulations, we will be managing the fermentation process to control the production of beer.

Once the fermentation process is complete, the beer must be bottled before it can be sold. This process will take one day.

Brewing Process

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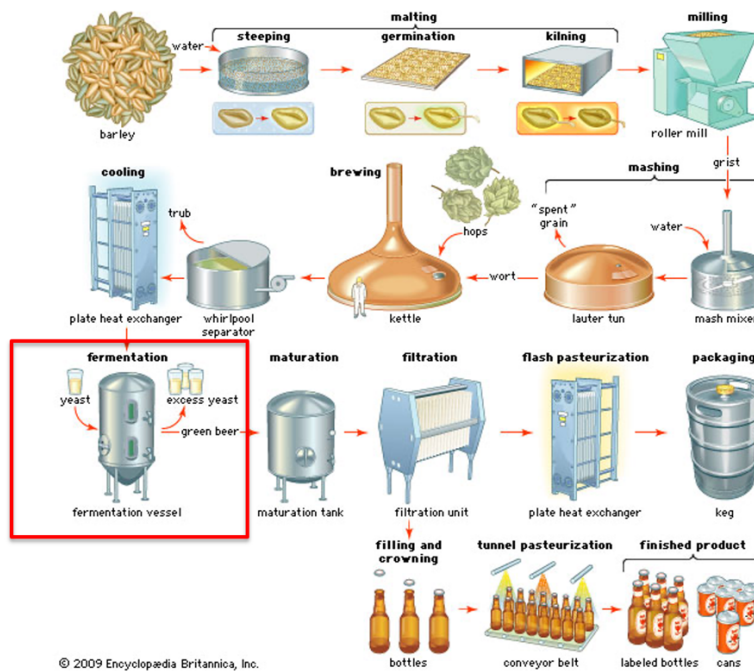
Quick Facts about Arborcrest Ale Studios

- The company has 4 fermenters
- Each fermenter holds 100 barrels of beer, which will produce 1,240 cases of beer
- It takes 14 days to ferment the beer plus one day for bottling

Arborcrest Sells 3 products:

Product	Selling Price / case	Cost / case	Gross Profit / case	Annual Sales (cases)	Seasonality
AliCat	$15.50	$10.08	$5.42	43,000	Summer Product
Edgar Ale	$14.40	$9.34	$5.06	16,000	Winter Product
Taj Mahal	$17.50	$10.43	$7.07	24,000	Year-Round

Simulation And Time

The simulation will run from January 1, 2024, to January 1, 2025

~8 seconds real-time = 1 Simulated Day

Logging In

1. Enter the URL **scrimmagesim.com** in your web browser.
2. Click **LOGIN** in the upper right corner of the page.

3. Select **MWC3** from the University drop-down.
4. Select **Student Competition** from the course drop-down.
5. Select **Bret Wagner** from the instructor drop-down. Your screen should look like the following:

Login: Select Class

University: MWC3

Course: Student Competition

Instructor: Bret Wagner

Next

6. Click the **next** button. This will take you to the following screen:

Login to ScrimmageSIM

Tenant: 2023 ← Enter **2023** for Tenant

UserId: ← Enter the UserID assigned to you

Password: ← Enter **password** for the password

Language: EN

Login

7. Next, you will need to reset your password. The only requirement is that it needs to be six characters long.

ScrimmageSIM
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Reset Password
Password: [   ]
Repeat PW: [   ]
[New PW]

Enter the new password twice.

8. Next, you will need to enter your:
   - First name
   - Last name
   - email address

Enter User Data
First: [   ]
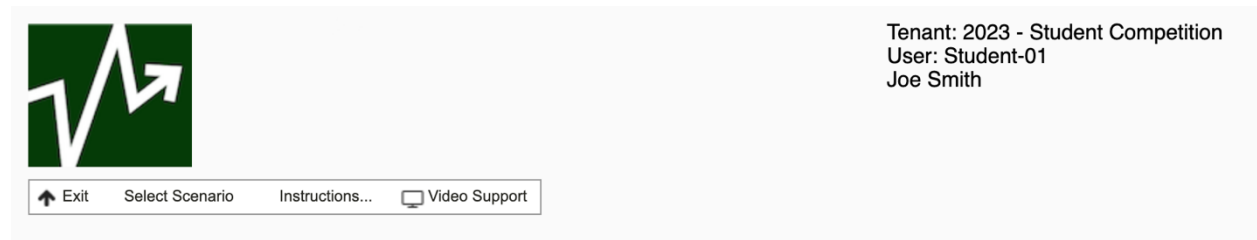Last: [   ]
e-mail: [   ]
[Enter]

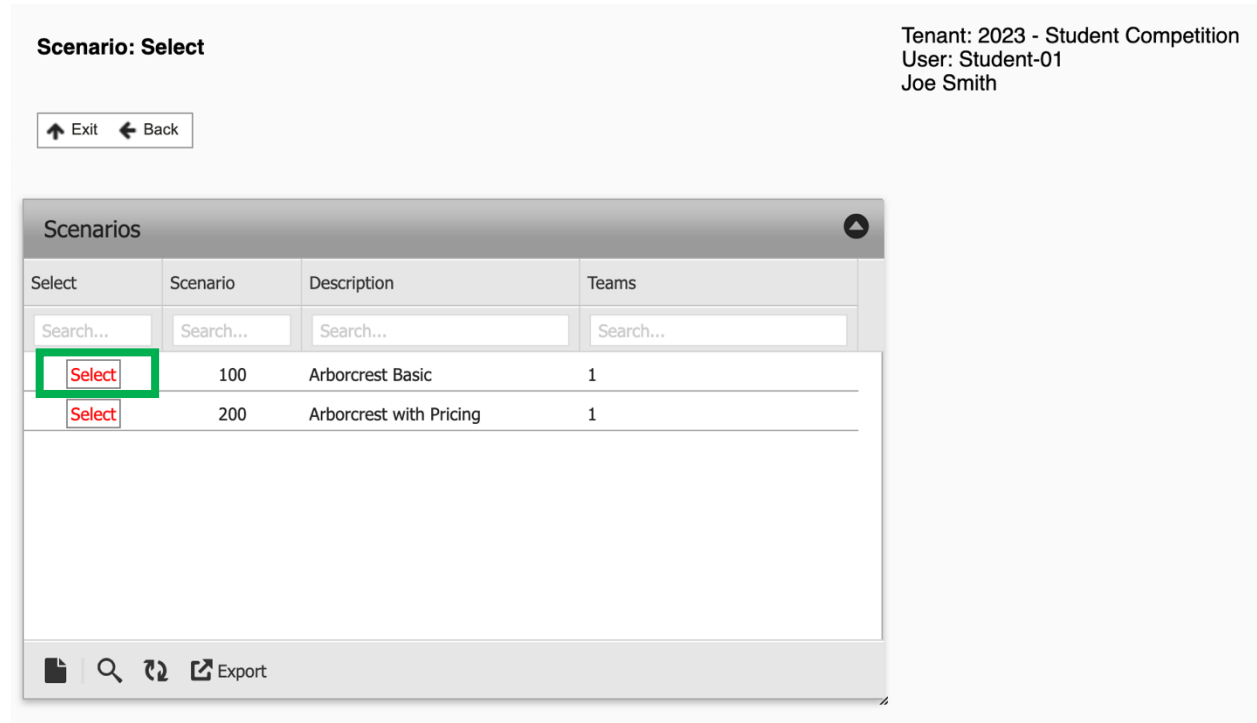9. Click enter and you will be taken to the main menu.

Main Menu

You should now be at the main screen. It should look like this.

Scenarios

For this competition, we will be using two scenarios. From the main menu, click on **Select Scenario**. This will produce the following screen:

In Scenario 100, you will try to maximize your company's Earnings Before Tax (EBT) by scheduling the beer production. Scenario 200 is the same, except you will be able to change the price you charge for your beer.

Select Scenario 100 and you will be at the following screen:

We will only be doing one run of this simulation, so click on Select to select the first (only) run. This will bring you to the main menu of the simulation:

On every screen you can see the simulation date and time

Menu Options
Sales

1. Click the first option (⊞ Sales) under **Sales** in the menu bar:

Here we get information on sales for Arborcrest's three products for the last 3 years

You can filter each column by clicking on the pull-downs under the headings

In all scenarios, demand comes from a distributor every Wednesday

If you have enough stock on hand, you will complete the sale. If not, the distributor will buy what you have and will not backorder.
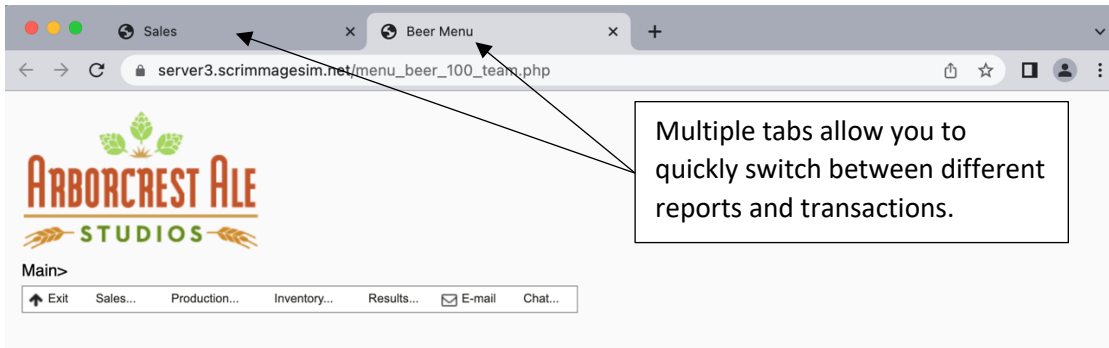
If you click export, the data in this screen will be exported to an Excel spreadsheet that you can use for further analysis.

2. Click on **Open Window** to open a new browser tab:

Multiple tabs allow you to quickly switch between different reports and transactions.

3. Select the Sales Graph (📊 Sales) from the drop-down menu:

- This provides a graph of the sales history for all beers for the last three years:
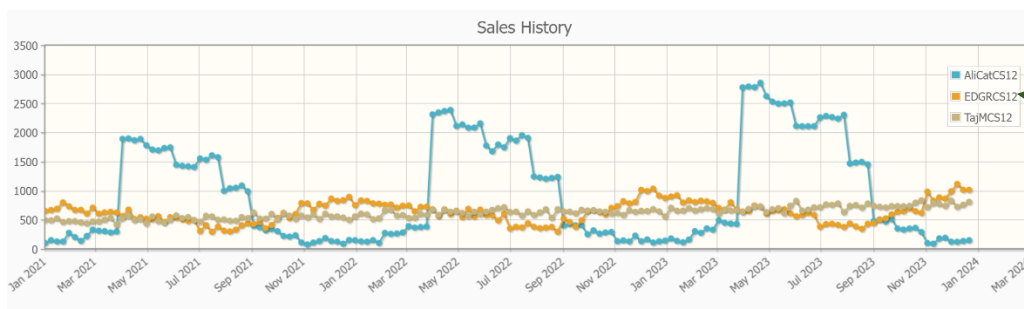
You can remove a beer from the graph by clicking on the legend

Important note:
You will not have enough production capacity to meet all of the demand in the summer. You will want to build up the inventory of AliCat Ale as much as possible before the demand increases in April. You will also want to make sure that you do not run out of Taj Mahal beer as it has the highest gross margin.

Production

1. Click on **Open Window** in the sales history graph screen, then click on **Create Production Order** under **Production** in the main menu:

This will produce the following screen:

To create a production order, select the product from the drop-down list, then click **Create Production Order**. Do not change anything else on the screen.
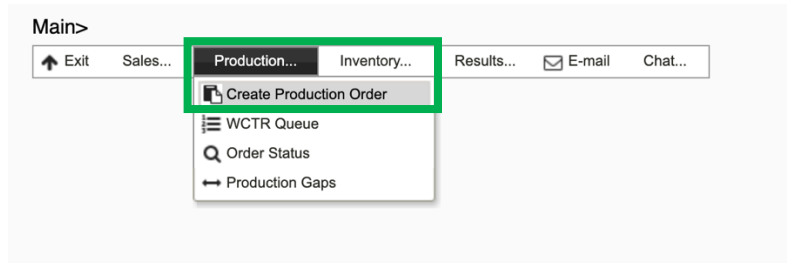
Production Order: Create

Tenant: 2023 - Student Competition
Scenario: 100 - Arborcrest Basic
Team 1
Run: 11 - Test Run 1
User: Student-01
Joe Smith
Simulation Time: 01/01/2024 12:00:00 AM

← Back ↻ Refresh   Open Window

Material ✓ AliCatCS12 – AliCat Ale 12oz bottle case
Quantity   **EDGRCS12 – Edgar Ale 12oz bottle case**   ∨ Plant: [100 - Brewery ∨] BOM: [100 - Basic BOM ∨] Routing: [100 - AliCat Basic Routing ∨]
          TajMCS12 – Taj Mahal 12oz bottle case

01/01/2024 🗓

◉ Start ○ End [Create Production Order]

> Select the product from the pull-down list, then click on **Create Production Order**

The production order will be listed in the table:

Production Order: Create   Production Order 300006 created

Tenant: 2023 - Student Competition
Scenario: 100 - Arborcrest Basic
Team 1
Run: 11 - Test Run 1
User: Student-01
Joe Smith
Simulation Time: 01/01/2024 12:00:00 AM

← Back ↻ Refresh   Open Window

Material: [EDGRCS12 - Edgar Ale 12oz bottle case ∨]

Quantity: [1240]   Unit of Measure: [CS ∨] Plant: [100 - Brewery ∨] BOM: [100 - Basic BOM ∨] Routing: [100 - Edgar Basic Routing ∨]

01/01/2024 🗓

◉ Start ○ End [Create Production Order]

Production Orders   ▲

Order Number	Material_Number	Mat'l Description	Plant	Routing	Start Date	Quantity	Q Complete	UofM	Actions
Search	∨	∨	Search	Search	Search	Search	Search	Search	Sea
300006	EDGRCS12	Edgar Ale 12oz bottle case	100	100	01/01/2024	1,240	0	CS	

Notes:

A. You will want to create production orders in groups of four as there are four fermenters.
B. There is enough inventory of each product to meet the demand for approximately **1 ½ months**, so it is not critical **what** you make in the very beginning as long as you are making something. One good production option is:
   a. Two orders of AliCat
   b. One order of Edgar
   c. One order of Taj Mahal
C. Orders take 14 days to ferment and 1 day for bottling.
D. Before the 14 days is complete, you want to have four more orders in the **Workcenter Queue** waiting to start. The **Workcenter Queue** is discussed in the next section.

2. If a production order is created by accident, you can delete it using the pull-down list at the bottom of the screen:

Select the production order, then click Delete Production Order
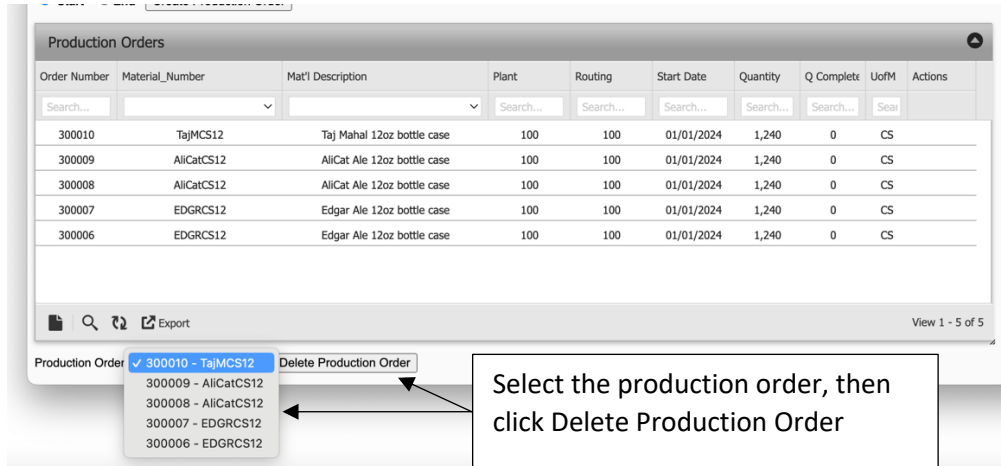
Important: Do not delete a production order that is in process. You will be throwing away all of the ingredients for a batch of beer, which will be costly! You can see if an order is in process using the Workcenter Queue.

Workcenter Queue

The first rule of success in the simulation is that "You must make stuff to make money." As you are short on capacity, any gaps in production are extremely costly. The Workcenter Queue is where you monitor the status of your production orders.

1. Open a new window and select **"WCTR Queue"** from the production menu:
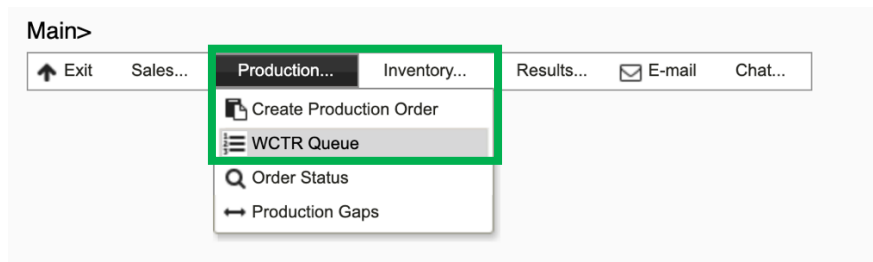
Production orders do not show up on the Workcenter Queue until time starts advancing in the simulation:

WCTR Queue: Status

Tenant: 2023 - Student Competition
Scenario: 100 - Arborcrest Basic
Team 1
Run: 11 - Test Run 1
User: Student-01
Joe Smith
Simulation Time: 01/01/2024 12:00:00 AM

← Back ⟳ Refresh   Open Window

Production Orders   ⬆

WCTR ⬆	Workcenter	Seq	Op	Stage	Order Type	Prod Ord	Lot	Material	Description	Quantity	Time Remain
⌄	Search...	Sear	Sear	Sear	Search...	Search...	Search...	⌄	Search...	Search..	Search...

No records to view

Once the simulation starts, click on Refresh (⟳ Refresh):

WCTR Queue: Status

Tenant: 2023 - Student Competition
Scenario: 100 - Arborcrest Basic
Team 1
Run: 11 - Test Run 1
User: Student-01
Joe Smith
Simulation Time: 01/01/2024 12:00:00 AM

← Back ⟳ Refresh   Open Window

Production Orders   ⬆

WCTR ⬆	Workcenter	Seq	Op	Stage	Order Type	Prod Ord	Lot	Material	Description	Quantity	Time Remain
⌄	Search...	Sear	Sear	Sear	Search...	Search...	Search...	⌄	Search...	Search..	Search...

Click on Refresh

No records to view

The status of all production orders will show in the screen:

Production Orders

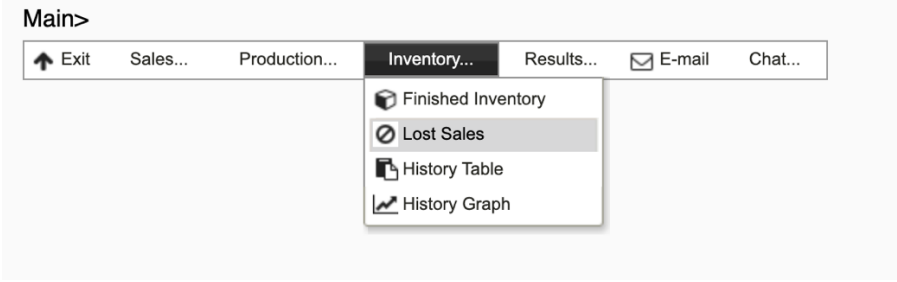| WCTR	Workcenter	Seq	Op	Stage	Order Type	Prod Ord	Lot	Material	Description	Quantity	Time Remain
601	Fermenter #1	0	20	20	Run	300006	500000	EDGRCS12	Edgar Ale 12oz bottl...	1,240	13 days 00 hrs 00 min 00 sec
602	Fermenter #2	0	20	20	Run	300007	500001	EDGRCS12	Edgar Ale 12oz bottl...	1,240	13 days 00 hrs 00 min 00 sec
603	Fermenter #3	0	20	20	Run	300008	500002	AliCatCS12	AliCat Ale 12oz bottl...	1,240	13 days 00 hrs 00 min 00 sec
604	Fermenter #4	0	20	20	Run	300009	500003	AliCatCS12	AliCat Ale 12oz bottl...	1,240	13 days 00 hrs 00 min 00 sec
601	Fermenter #1	1	20	20	Run	300010	500004	TajMCS12	Taj Mahal 12oz bottl...	1,240	14 days 00 hrs 00 min 00 sec
602	Fermenter #2	1	20	20	Run	300011	500005	AliCatCS12	AliCat Ale 12oz bottl...	1,240	14 days 00 hrs 00 min 00 sec
603	Fermenter #3	1					00006				00 sec
604	Fermenter #4	1					00007				00 sec

View 1 - 8 of 8

Orders with Sequence Number (Seq) zero are in production and **should not be deleted**.

Fermentation will be complete after 13 days. After one more day for bottling, they will be in inventory available for sale.

Note: You should have between 8 and 12 production orders in the workcenter queue at all times. Fewer than 8 orders risks having a gap in production, which is very costly when demand exceeds capacity. More than 12 orders means you have made production decisions too far into the future and won't be able to respond quickly enough when inventory of a product is low, risking an unneeded stockout.

Inventory

1. Select **Lost Sales** from the inventory drop-down menu:

Main>

Exit | Sales... | Production... | Inventory... | Results... | E-mail | Chat...

- Finished Inventory
- Lost Sales
- History Table
- History Graph

This will produce the following screen:
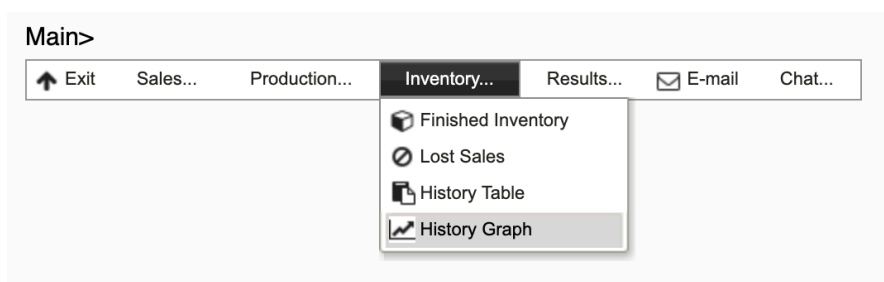
Lost Sales: Status

Tenant: 2023 - Student Competition
Scenario: 100 - Arborcrest Basic
Team 1
Run: 11 - Test Run 1
User: Student-01
Joe Smith
Simulation Time: 01/02/2024 12:00:00 AM

← Back   ⟳ Refresh   Open Window

Lost Sales

Description	Material_Number	Quantity	U of M	SLoc	Date ⬍
⌄	⌄	Search…	Searc	Search…	Search…

No records to view

- You will have lost sales once the simulation is in the summer months as demand will exceed capacity.
- You **do not** want to see Taj Mahal on this list as it has the highest gross margin. Ideally, **only** want to see Edgar Ale on this list as it has the lowest gross margin.

2. Select the **History Graph** from the inventory drop-down menu:

Main>

↑ Exit	Sales...	Production...	Inventory...	Results...	✉ E-mail	Chat...

- 📦 Finished Inventory
- ⊘ Lost Sales
- 📑 History Table
- 📈 History Graph

- As the simulation advances, this graph will show how inventory is changing over time. The inventory increases when production orders are received and decreases when sales are made.
- **This window is critical to understanding your inventory position to determine what products to produce next.**

Inventory: History Graph

Tenant: 2023 - Student Competition
Scenario: 100 - Arborcrest Basic
Team 1
Run: 11 - Test Run 1
User: Student-01
Joe Smith
Simulation Time: 01/16/2024 12:00:00 AM

← Back ⟳ Refresh Open Window

Inventory decrease because of sales to the distributor.

Inventory increase from production.

Results

1. Select **"Financial Statement"** from the Results drop-down menu:

2. This will show the company's income statement and balance sheet:

Name	Acct/Cat	Current	Dr./Cr.
Financial Statements	-	-	-
Income Statement	-	28,972	-
Gross Profit	1010	211,007	-
Expenses	1020	182,035	-
Balance Sheet	-	0	-
Assets	2010	3,732,758	-
Liabilities	2020	1,585,017	-
Owner's Equity	2030	2,147,741	-

Earnings Before Tax (EBT), which you want to maximize.

3. Select **Team Ranking** from the results drop-down menu:
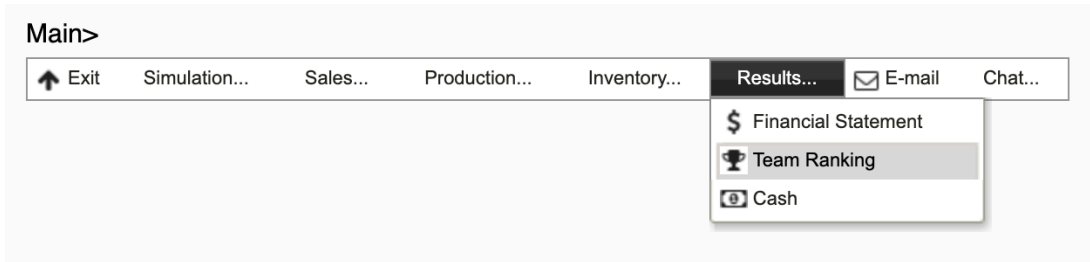
This screen lists the teams in order of Earnings Before Tax (EBT). Your goal is to be at the top of this list when the simulation ends.

Team	Simulation Time	EBT
1	01/01/2025 00:00:00	$140,135.21
2	01/01/2025 00:00:00	$125,650.23
5	01/01/2025 00:00:00	$113,650.38
4	01/01/2025 00:00:00	$110,352.44
3	01/01/2025 00:00:00	$110,240.11
7	01/01/2025 00:00:00	$102,597.35
6	01/01/2025 00:00:00	$98,348.51
8	01/01/2025 00:00:00	$73,256.37
9	01/01/2025 00:00:00	$73,028.70
20	01/01/2025 00:00:00	$-945,809.75

View 1 - 10 of 10

Conclusion

The simulation will run for one simulated year, and you will not be able to keep every product in stock. Maintaining sales of Taj Mahal is important since it makes the most profit. You want to make sure when you lose sales it is of Edgar Ale, since it makes the least profit per case. You very likely will stock out of AliCat as well.

Make sure to work with your teammate to make the most effective business decisions. You need to make decisions together and run the simulation like a real company. Remember, "You have to make stuff to make money!"

Good luck!