# FloraPARK

A Supply Chain Collaboration and Contracts Simulation

## Instructors' Manual

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# Live as One or Die as Two!

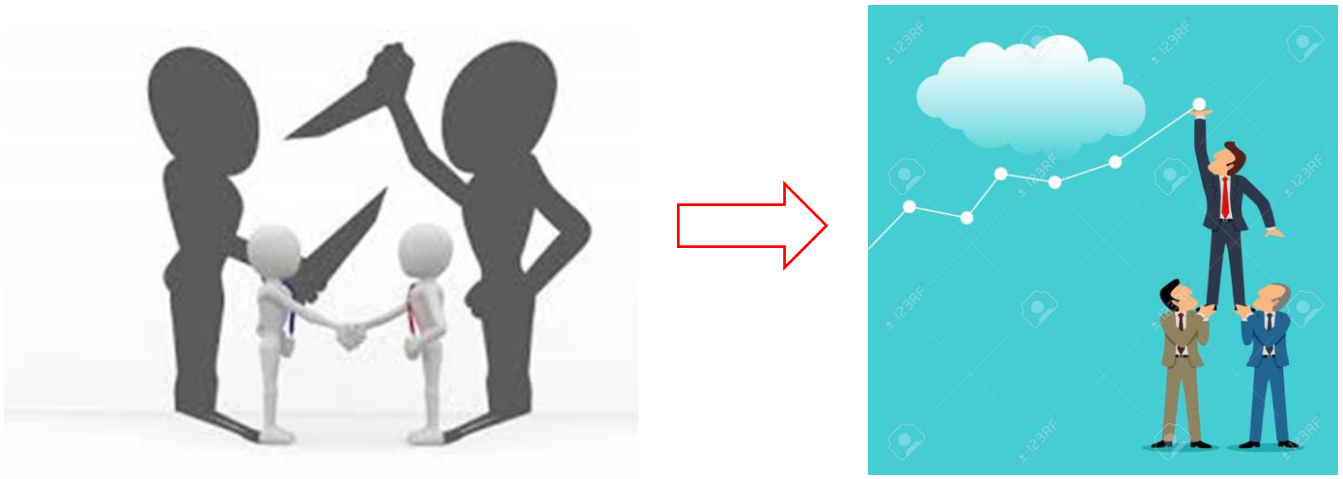
Flora PARK

How to collaborate to beat other supply chains while depending yourself against the “worst” enemy: Your trading partner?

A Supply Chain Collaboration and Contracts Simulation

# Agenda

- Game overview
- Impact & learning outcomes
- Instructor game instructions



From back-stabbing to win-win

# Game Overview

Beer Game vs. FloraPark Simulation
Teaching objectives & key lessons
Game setup, metrics, and trade-offs
Screen play and teaching slides.

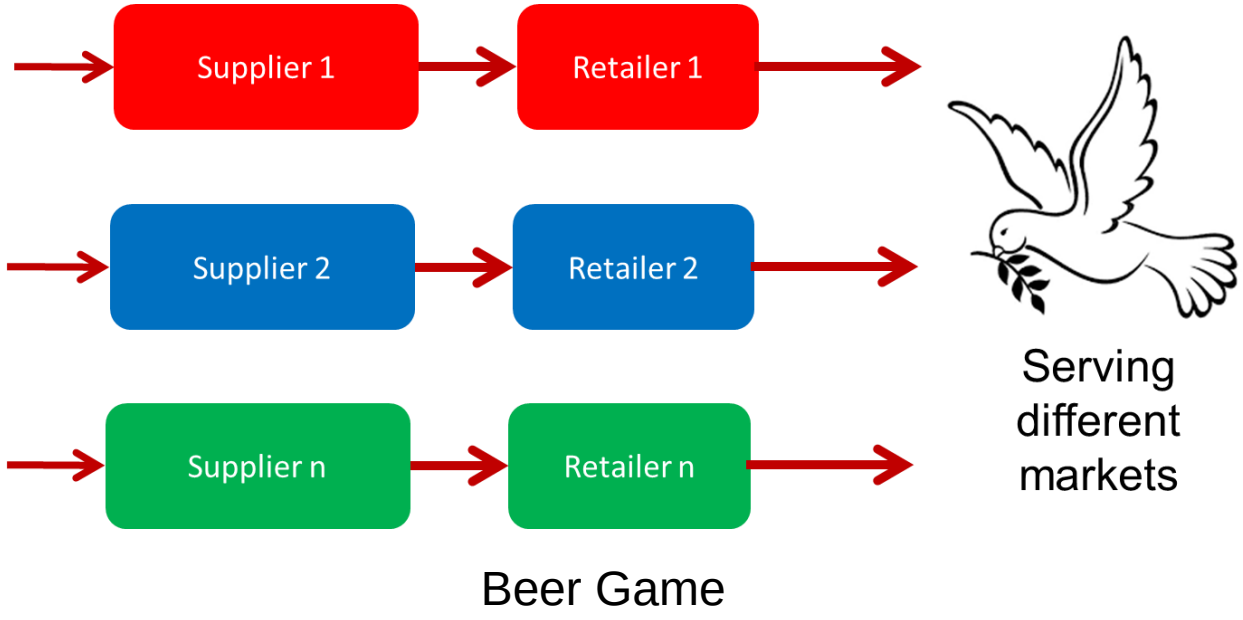
# Beer Game vs. FloraPark Simulation

**Beer Game**

**FloraPark Simulation**

# The Beer Game

- Includes only order quantity but not price.
- Ignores the competition among supply chains.



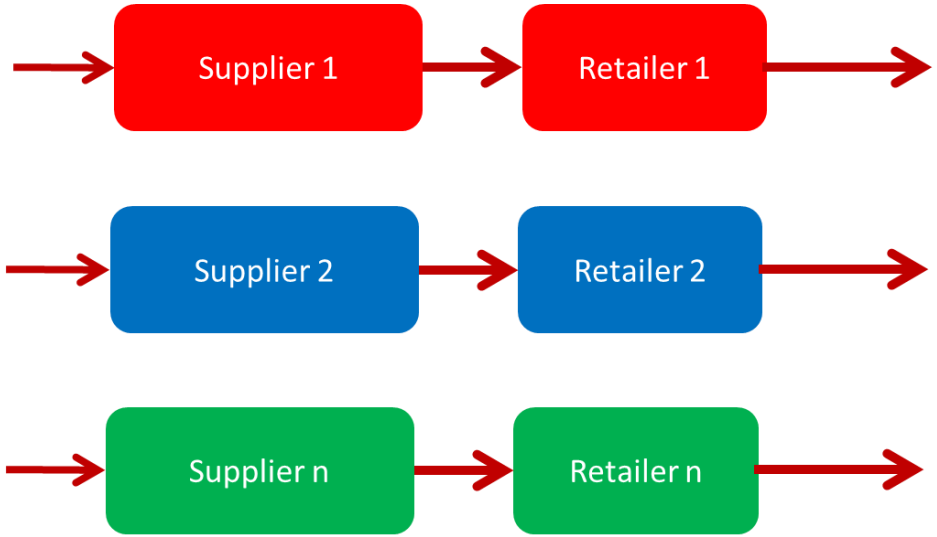

Beer Game



Serving different markets

# The FloraPark Simulation

- Includes both order quantity and price → capture the conflict of interest among trading partners when they compete, as one, against other supply chains.
- **Trading partners must collaborate with & fight each other simultaneously!**




FloraPark

Competing in one market

# A Supply Chain Strategy Game

- **Supply chain contracts**: Students experiment on various price & quantity supply contracts.
- **Total business game**: Students play c-suite team perspective, make strategic decisions on supply chain strategy, marketing, competitive strategy, product strategy, and negotiation.
- **Integrate multiple business disciplines**: Supply chain, marketing, management strategy, negotiation, teamwork.

# Teaching Objective

How to collaborate to win the competition against other supply chains while defending yourself against your “worst” enemy: Your trading partner?

# Key Lessons

- If you fight your partner, your supply chain cannot win.

**Live as one or die as two**

- Even if your supply chain wins, you may not.

**You may sacrifice yourself**

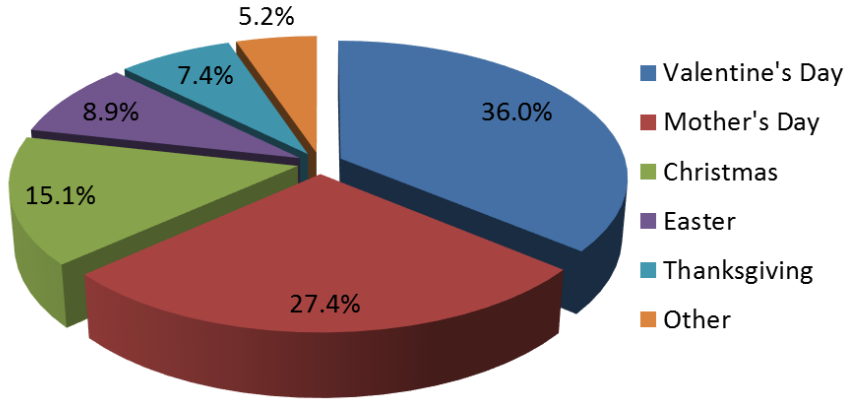
**for your partner's success**

# Subjects / Topics Covered

- Supply chain collaboration and contracts
- Supply chain and marketing interfaces
- Supply chain competition
- International supply chains
- Negotiation and teamwork
- Product strategies
- Strategic thinking

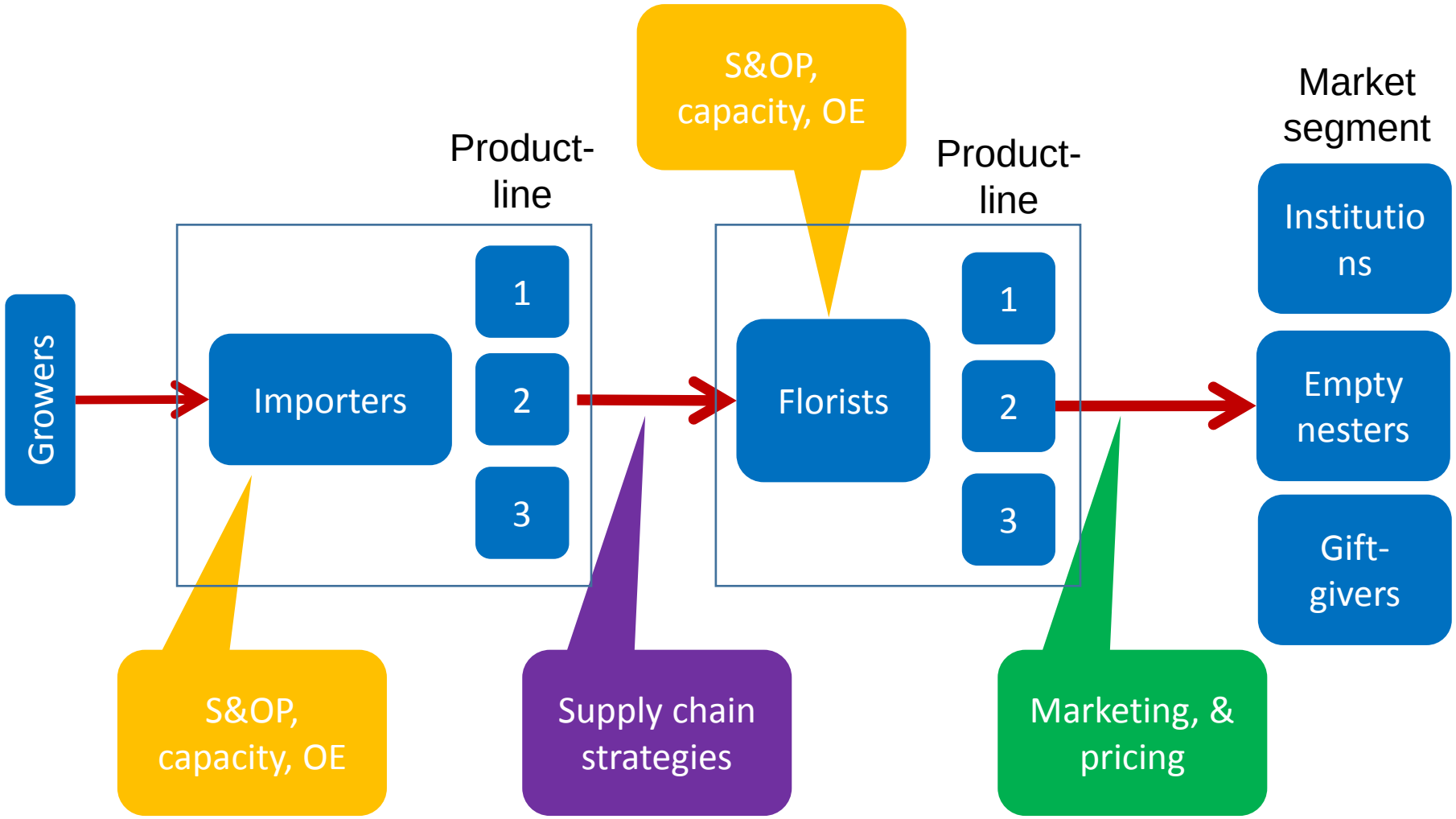
# Simulate Int'l Flesh Flower Supply Chains

- Perishable items
- Long lead times and significant yield losses
- Highly seasonable and unpredictable demand

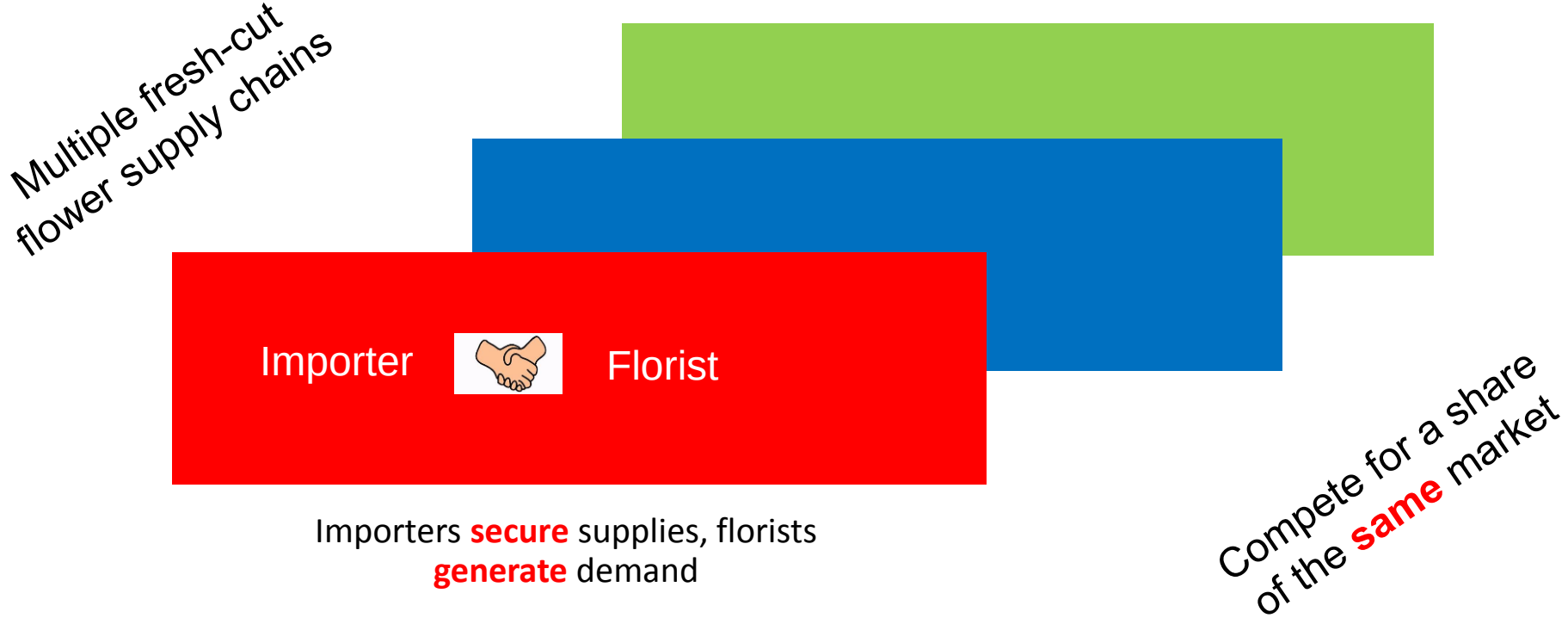



- Relates to everyone
- Intensive market competition
- In each supply chain, importers and retail florists have a conflict of interests

# Supply Chain Players & Actions

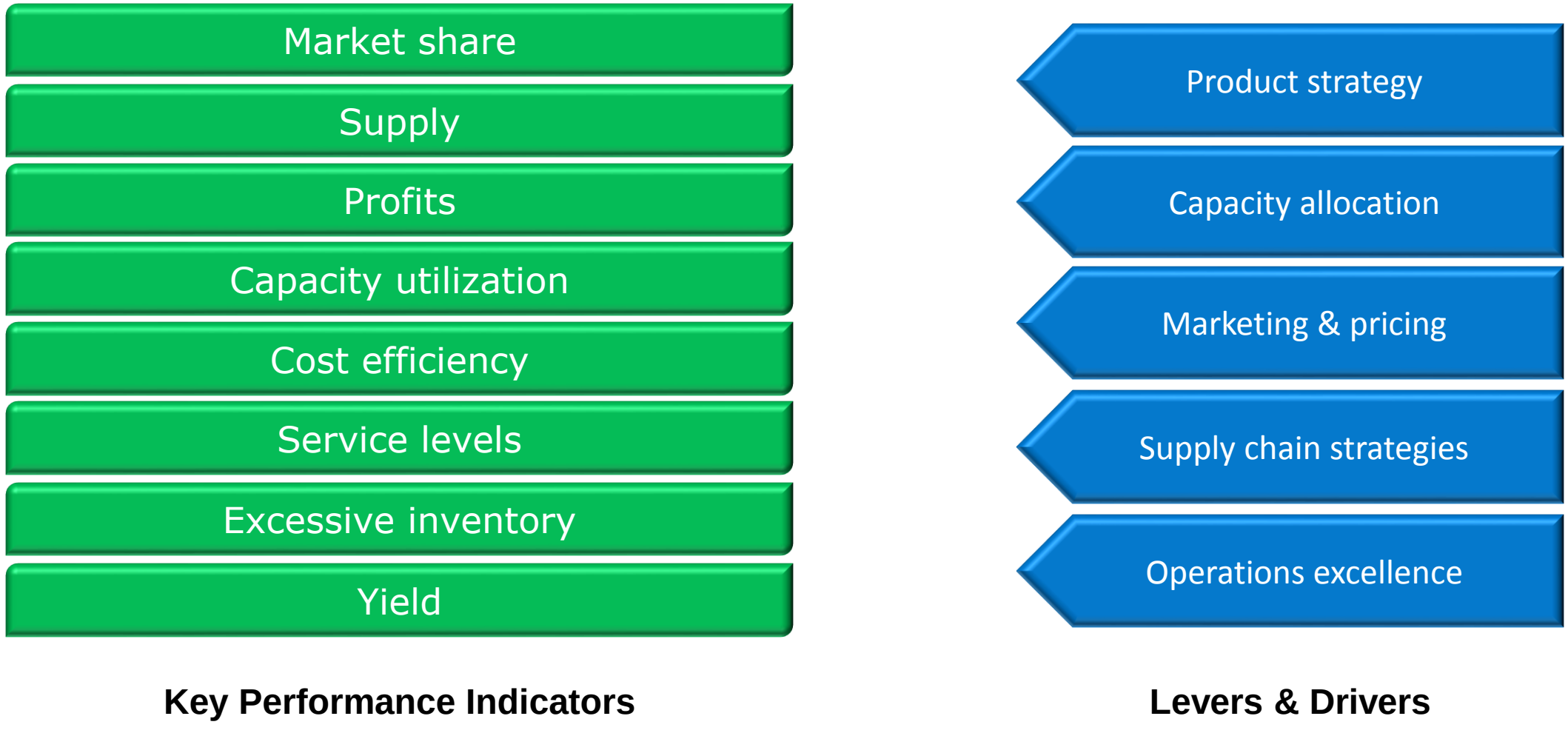


# Game Setup: A Competitive Environment




Importers **secure** supplies, florists **generate** demand

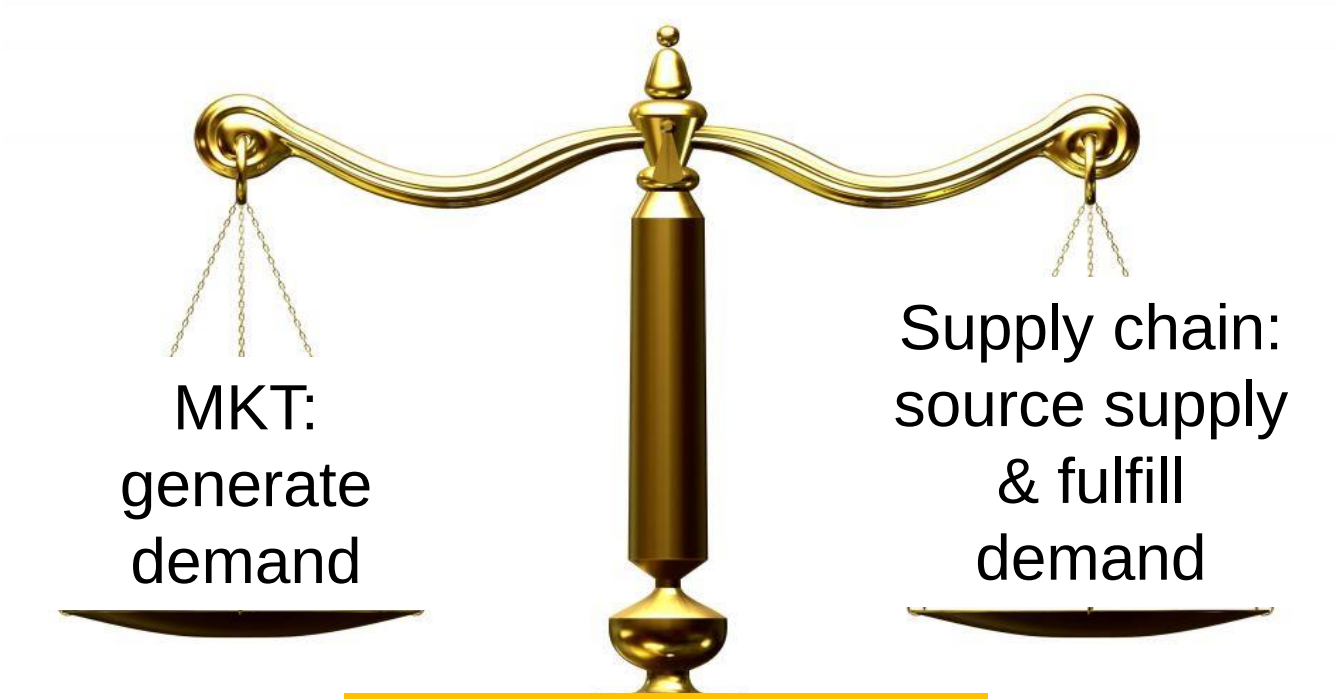
# Game Metrics




**Key Performance Indicators**

**Levers & Drivers**

# Balance Supply Chain & Marketing Spending




**Limit budget**

It is a disaster if we bought a lot of supply but there is no demand for it. It is equally disastrous if a huge demand is generated but there is no supply to satisfy it.

# Sequence of Events

Florist places the 1st order in advance at a discounted wholesale price. Importer then secures the supply from growers

If needed, florist may place the 2nd order at the regular wholesale price. Importer fulfills as much as inventory is available




* Gérard P. Cachon (2004), Management Science 50 (2); Lingxiu Dong, Kaijie Zhu (2007), M&SOM 9 (3)

# Supply Chain Collaboration via Contracts

- Advanced order (push contract): florist holds inventory and waits for demand.
- Last-minute order (pull contract): florist pushes inventory to importer, orders as needed in season.

| | **Advanced order (Push)** | **Last-minute order (Pull)** |
|---|---|---|
| Pros | Price discount & guaranteed supply | Less budget required,<br>No inventory risk |
| Cons | High inventory risk,<br>High budget requirement | Short supply & higher cost |

- Hybrid strategy (advanced-purchasing discount contract): florist buys the sure amount before the season and raises the regular wholesale price to encourage the importer to hold additional inventory just in case.

# Screen Play and Teaching Slides

| Slide File # / Lecture or Interactive Session | Before Game Round |
|---|---|
| 1. Supply chain challenges & key lessons | 1st |
| 2. Strategic thinking, supply chain and marketing interfaces | 2nd |
| 3. Teamwork and group decisions | 3rd |
| 4. Coordinate supply chain via price & quantity contracts | 4th |
| 5. Competitive supply chain strategies | 5th |
| 6 & 7. Negotiation, game trajectory | 6th |
| 8. Reflections – From Game to Reality | Reality-show |

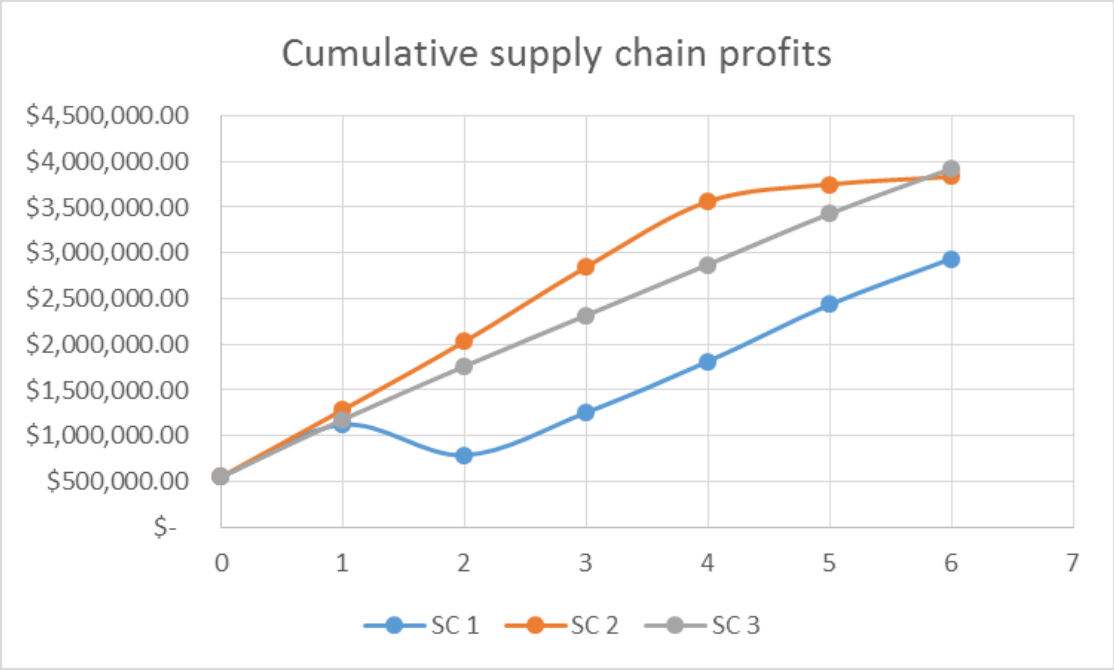
Expected duration for 6 rounds: 6-9 hours, in or off-class. Contract negotiation takes time!

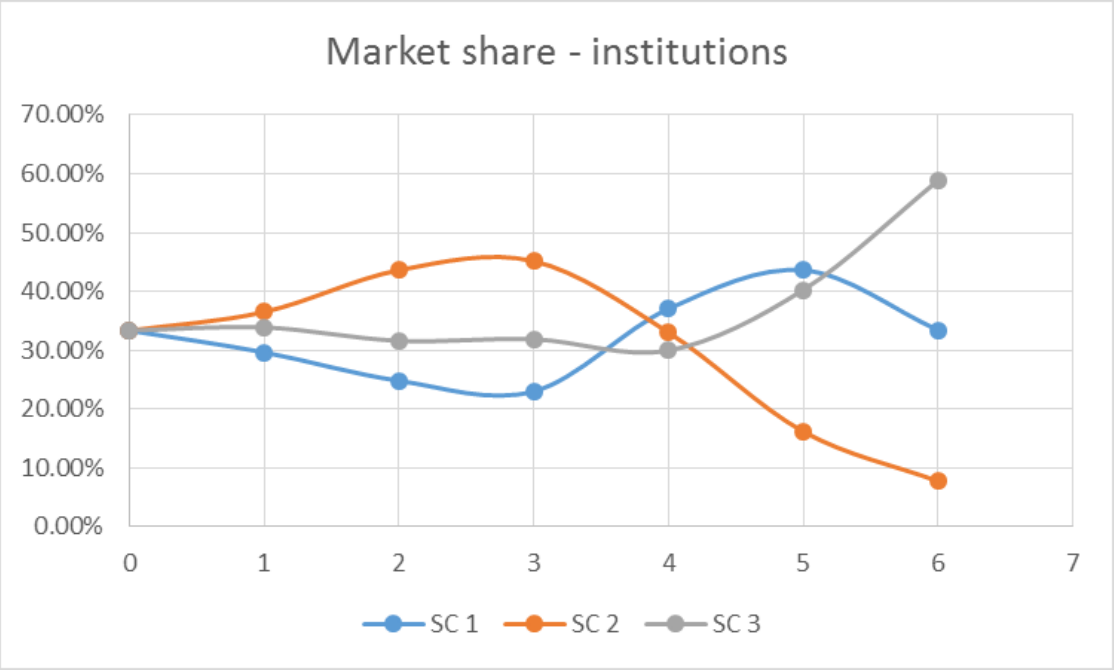
# Impact & Learning Outcomes

Sample game results, students' feedback, teaching effectiveness assessment.

Game stats as of 10/2022: > 100 games, ~ 30 instructors, > 10 universities (US, Singapore, Hong Kong, China), ~ 400 student teams.

# Sample Game Trajectory




Supply chain 3 over-took the once leading supply chain 2 and won at the end by the advanced purchasing discount contract!

# Reality Show – Tell The Ugly Truth

- Florists & importers
  - Most compelling insight
  - Collaboration & competition
  - Strategic thinking
  - Negotiation
  - Teamwork

- How did you collaborate with your trading partner while defending your own interest?
- What would you do differently next time?
- What suggestions do you have for your trading partner?

# Student Feedback

- The most compelling insight:
  - *"The best part about the FloraPark simulation was the conflicting motivations between the firms in the supply chain. … There must be a careful balance between self-interested actions to capture the maximum amount of value from the supply chain and collaboration to compete against the other supply chains. …"*

- What do you like best about this course:
  - *"The supply chain strategy games [FloraPark] in second half of the course were exceptional learning experience"*

# The Winning Strategy (by Students)

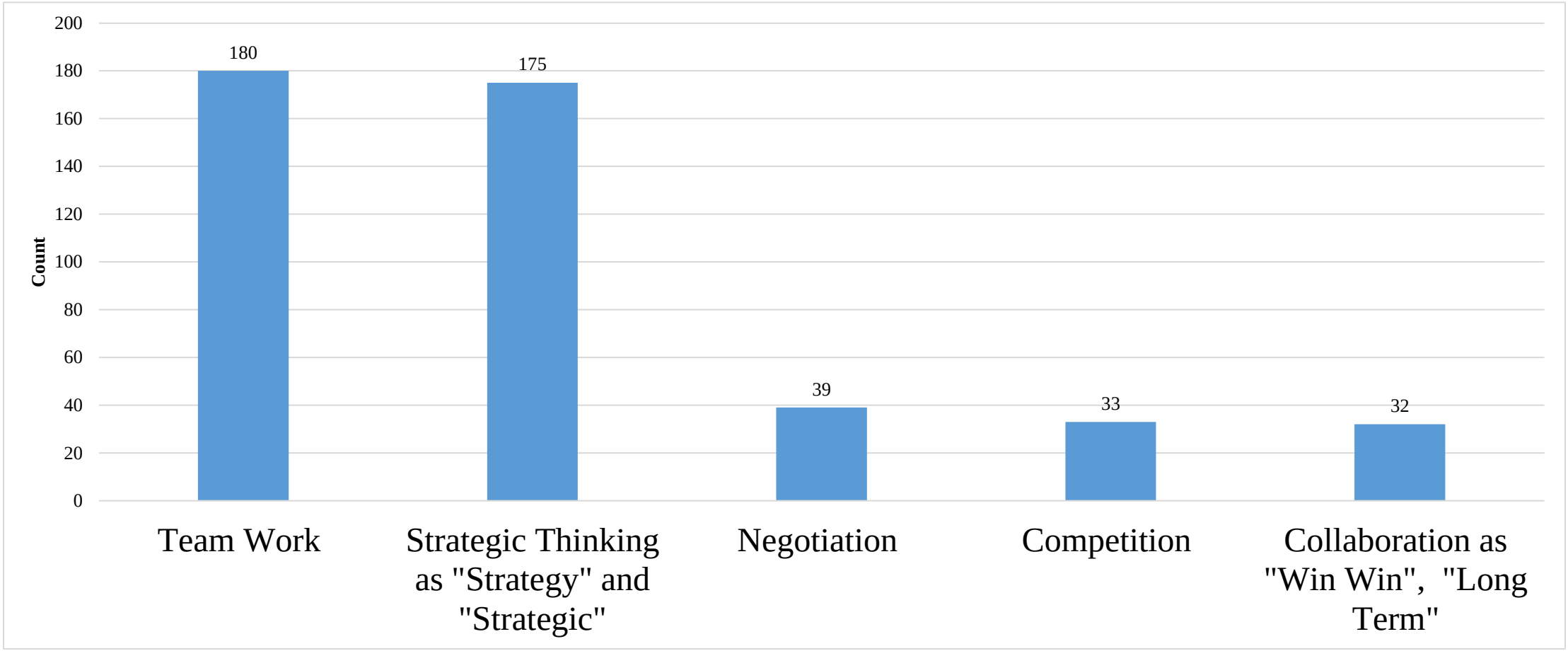
- *"Part of our supply chain strategy was for the importer to carry most of the inventory risk. Since we were carrying this risk, we were able to negotiate better x2 prices in order to be compensated for the risk. This was beneficial for the entire supply chain as it allowed the retailer to invest more in marketing. Their investment in marketing allowed them to obtain a significant percentage of the market share and to become extremely profitable. Since our retailer was profitable, there were able to pass on some of the profitability to us for holding their inventory. We were critical to each other's success and our strategy would not work if both of us didn't participate. Our combined strategy was greater than any individual strategies we could have."*

# Student Feedback Text Mining Analysis


Bigram Word Cloud


Five-gram Word Cloud

# Student Top Learnings From the Game



# Teaching Effectiveness Assessment

| | Very difficult | Difficult | Neutral | Easy | Very easy |
|---|---|---|---|---|---|
| 1. Understanding and playing the FloraPark game in one lecture was… | 2 (6.67%) | 9(30%) | 9(30%) | 7(23.3%) | 3 (10%) |
| | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
| 2. The FloraPark game has increased my understanding of supply chain collaboration and contracts. | 0 (0%) | 6(20%) | 6(20%) | 11 (36.67%) | 7 (23.33%) |
| 3. The FloraPark game has improved my understanding of supply chain competition. | 1 (3.3%) | 4 (13.3%) | 4 (13.3%) | 14 (46.7%) | 7 (23.3%) |
| 4. The FloraPark game has improved my understanding of teamwork, communication, and negotiation. | 1 (3.3%) | 3 (10%) | 4 (13.3%) | 11 (36.7%) | 11 (36.7%) |
| 5. The FloraPark game has improved my understanding of the integration of marketing and supply chain decisions. | 1 (3.3%) | 3 (10%) | 7 (23.3%) | 8 (26.7%) | 11 (36.7%) |
| 6. Thanks to the FloraPark game, I'm more convinced that real-life problems can be modeled and studied with educational games. | 1 (3.3%) | 4 (13.3%) | 2 (6.7%) | 9 (30%) | 14 (46.7%) |

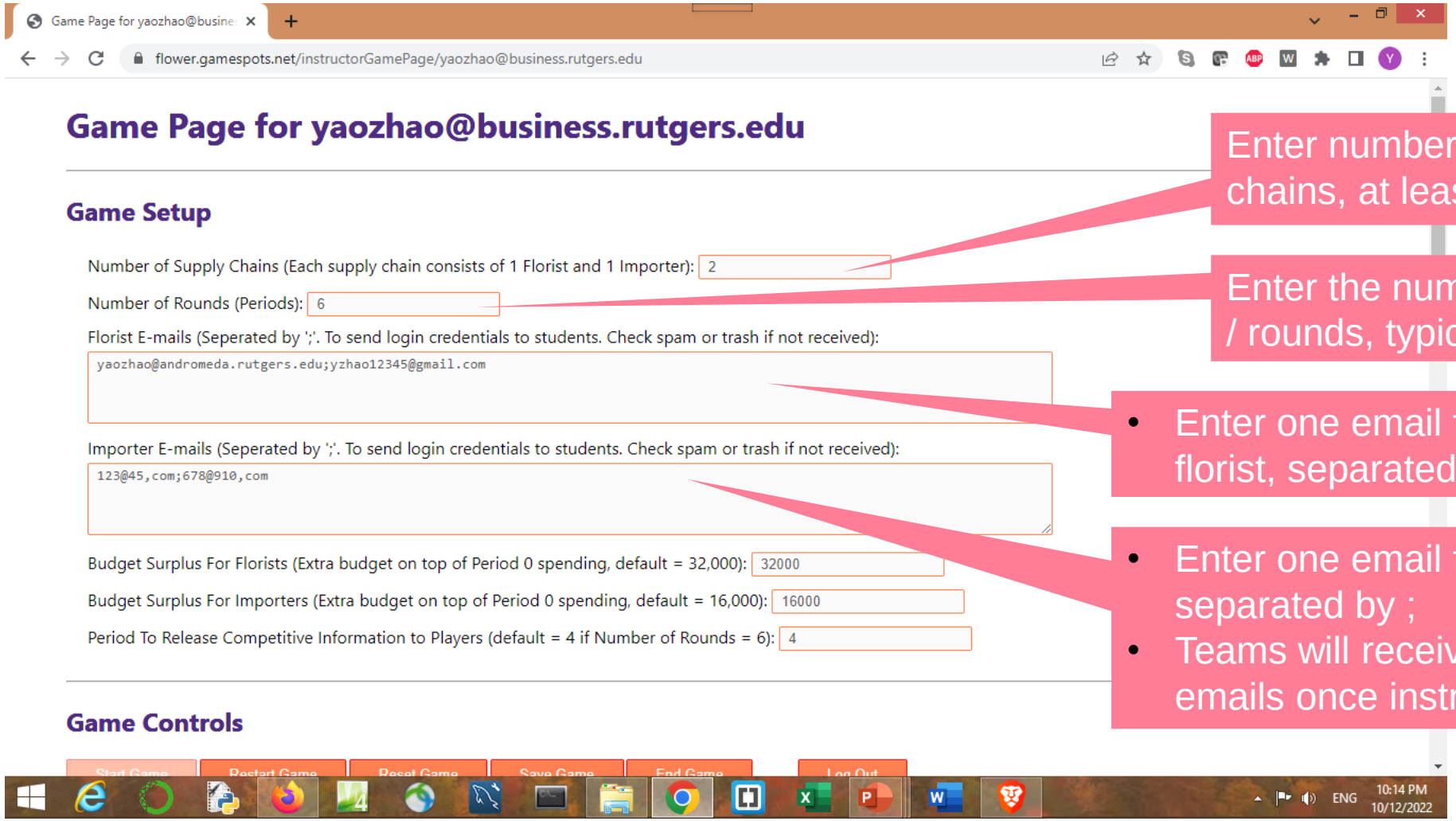
# Instructor Game Instructions

How to play?

# Instructor Account and Login

Email yaozhao@business.rutgers.edu for instructor access

# Instructor Sets Up Game



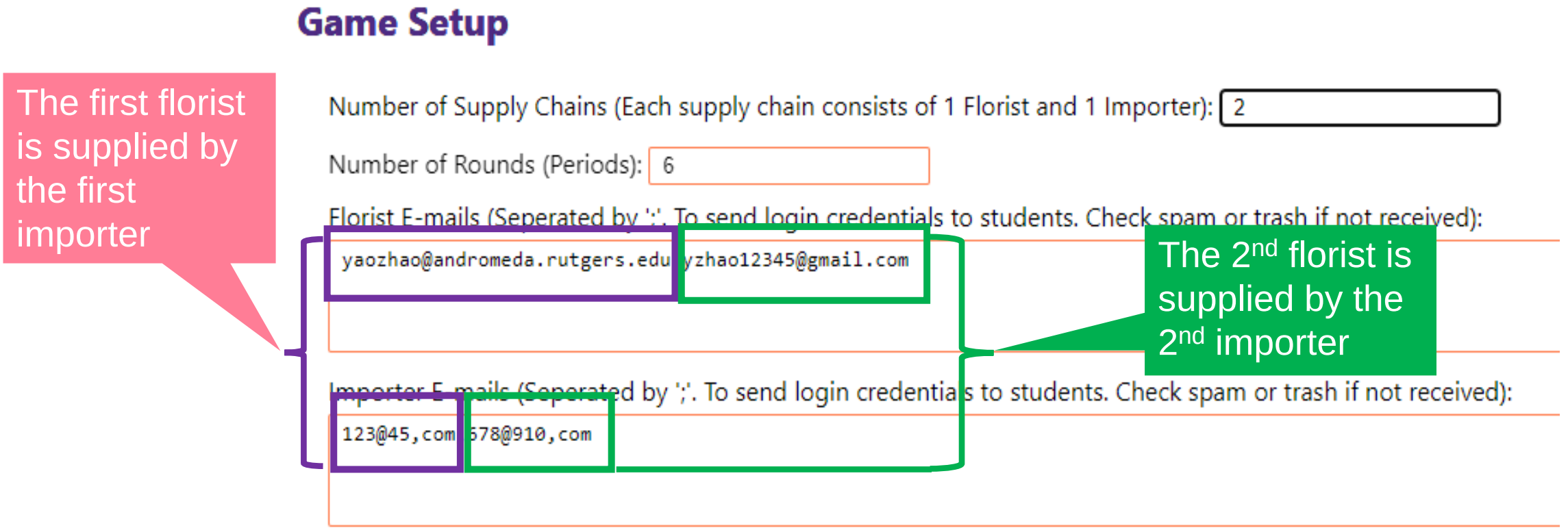

Enter number of supply chains, at least 2

Enter the number of periods / rounds, typically 6 periods

- Enter one email for each florist, separated by ;

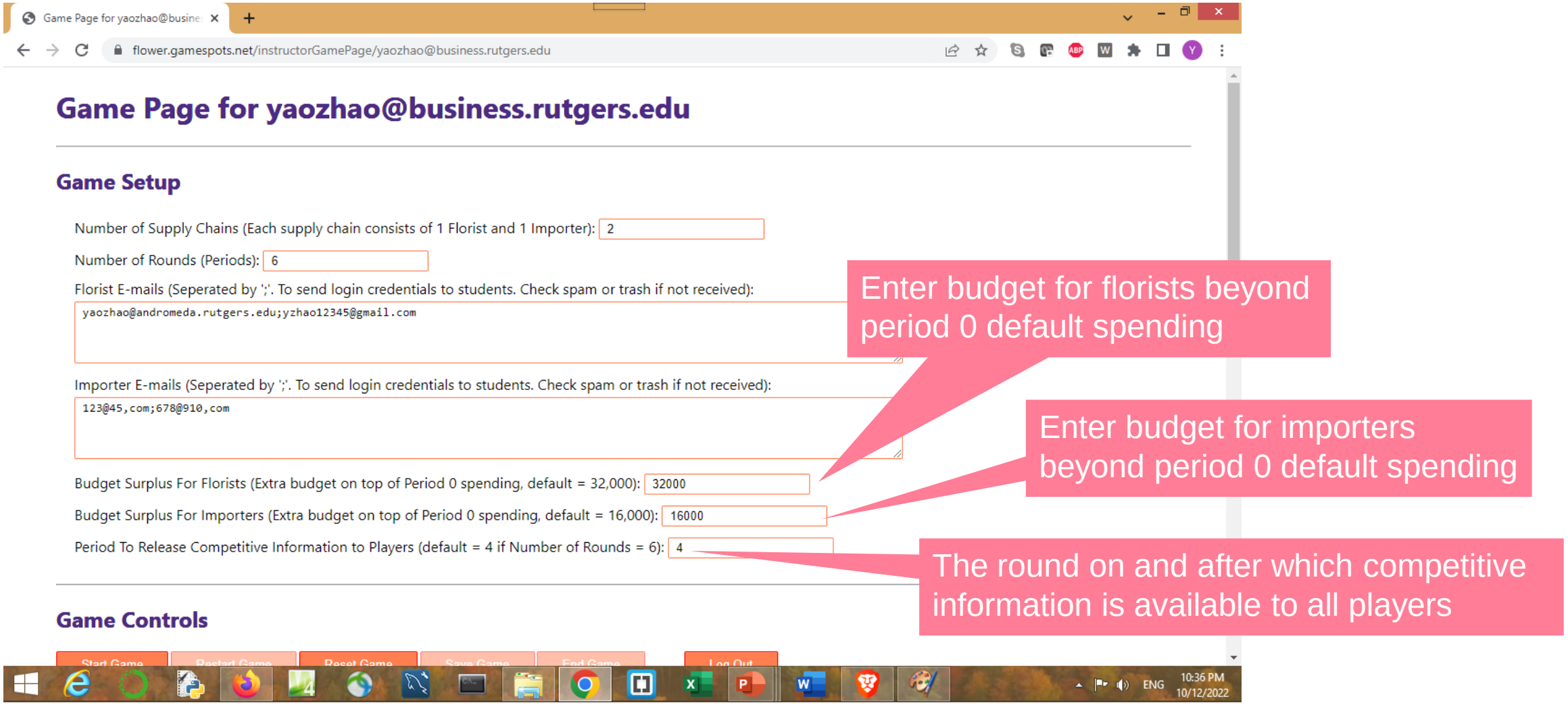
- Enter one email for each importer, separated by ;
- Teams will receive password via these emails once instructor starts game

# Instructor Pairs Florist and Importer




**Attention: if students cannot find the login email, please check their spam. You can collect teams' emails and start the game before class to save time.**

# Instructor Sets Game Parameters



# Florists Period 0 Default Spending

**Input**

| Period | Item | Baseline | | Feature | | Exotic | | Sum | Total Capacity |
|---|---|---|---|---|---|---|---|---|---|
| 0 | Processing Capacity | 400000 | + | 280000 | + | 120000 | = | 800,000 | = 800,000 |
| | Retail Price $ | 0.25 | | 2 | | 8 | | | |
| | x1 (Advanced Order) | 200000 | | 140000 | | 60000 | | | |
| | | ✖ | | ✖ | | ✖ | | | |
| | w1 $ (Discounted Wholesale Price) | 0.05 | | 0.3 | | 0.9 | | | |
| | w2 $ (Regular Wholesale Price) | 0.0575 | | 0.345 | | 1.035 | | | |

Florist advanced-purchasing cost

| Period | OE Spend | Mkt-Relationship Spend | Mkt-Pro/Ads Spend | Total Spend | Budget |
|---|---|---|---|---|---|
| 0 | 10000 | 1000 | 1000 | $118,000.00 | <= $150,000.00 |

Check Budget | Submit Input | Cancel Submission

Total Spend = florist advanced-purchasing cost + operations excellence (OE) + Mkt-Relationship + Mkt-Pro/Ads

# Importers Period 0 Default Spending

**Input**

| Period | Item | Baseline | Feature | Exotic | Sum | Total Capacity |
|---|---|---|---|---|---|---|
| 0 | Processing Capacity | 500000 + | 350000 + | 150000 = | 1,000,000 | = 1,000,000 |
| | y (Grower Supply) | 250000 | 175000 | 75000 | | |
| | x1 (Advanced Order) | 200000 | 140000 | 60000 | | |
| | w1 $ (Discounted Wholesale Price) | 0.05 | 0.3 | 0.9 | | |
| | w2 $ (Regular Wholesale Price) | 0.0575 | 0.345 | 1.035 | | |

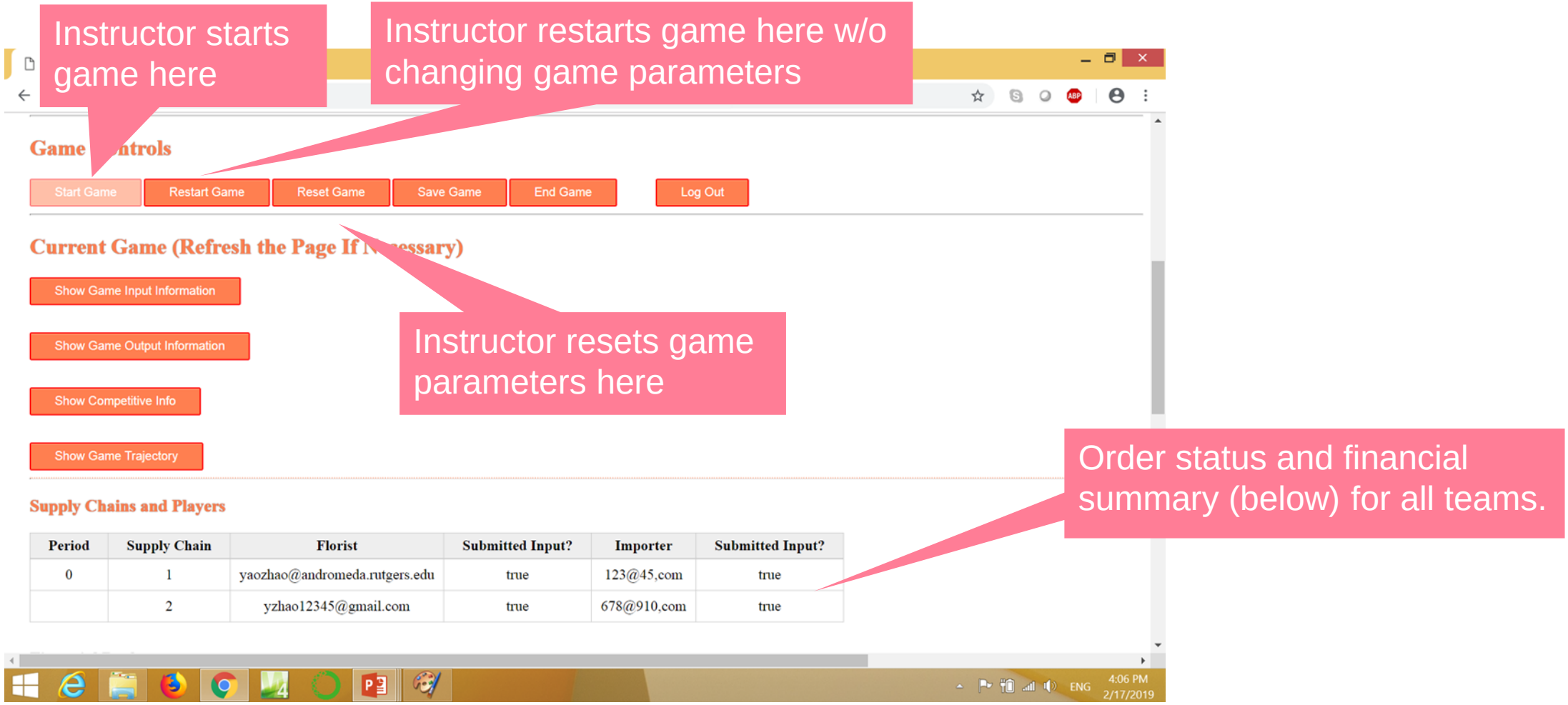
| Period | OE Spend | Total Spend | Budget |
|---|---|---|---|
| 0 | 5000 | $22,000.00 | <= $38,000.00 |

Check Budget | Submit Input | Cancel Submission

Importer purchase cost = Grower supplies × grower prices (exogenous)

Total Spend = importer purchase cost + operations excellence (OE)

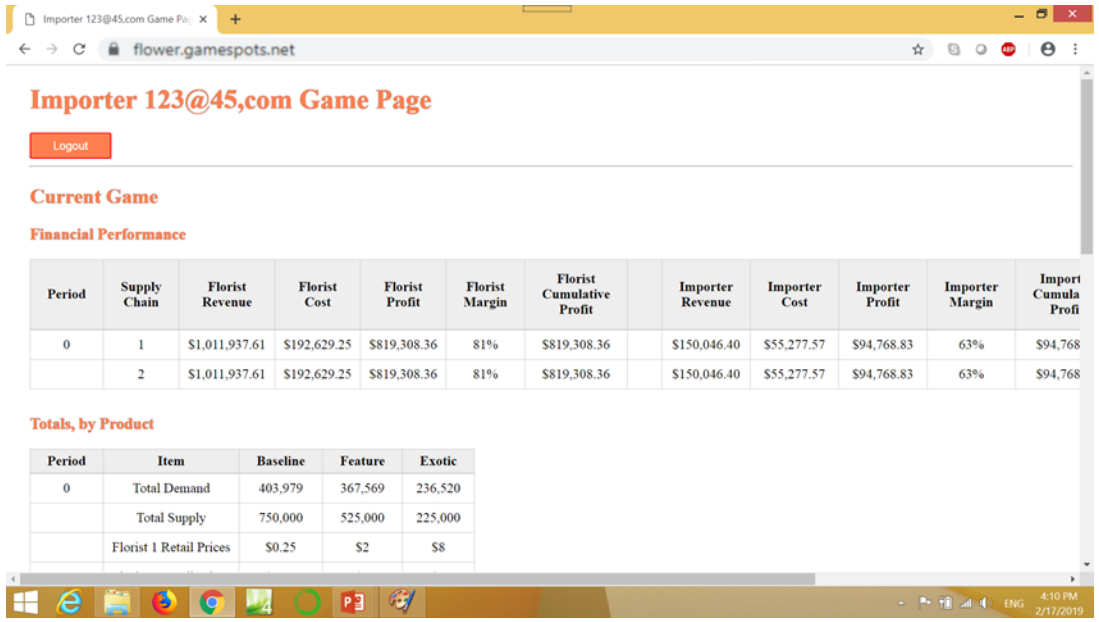
# Instructor Starts / Restarts / Resets Game



# Students Received Results

Florists

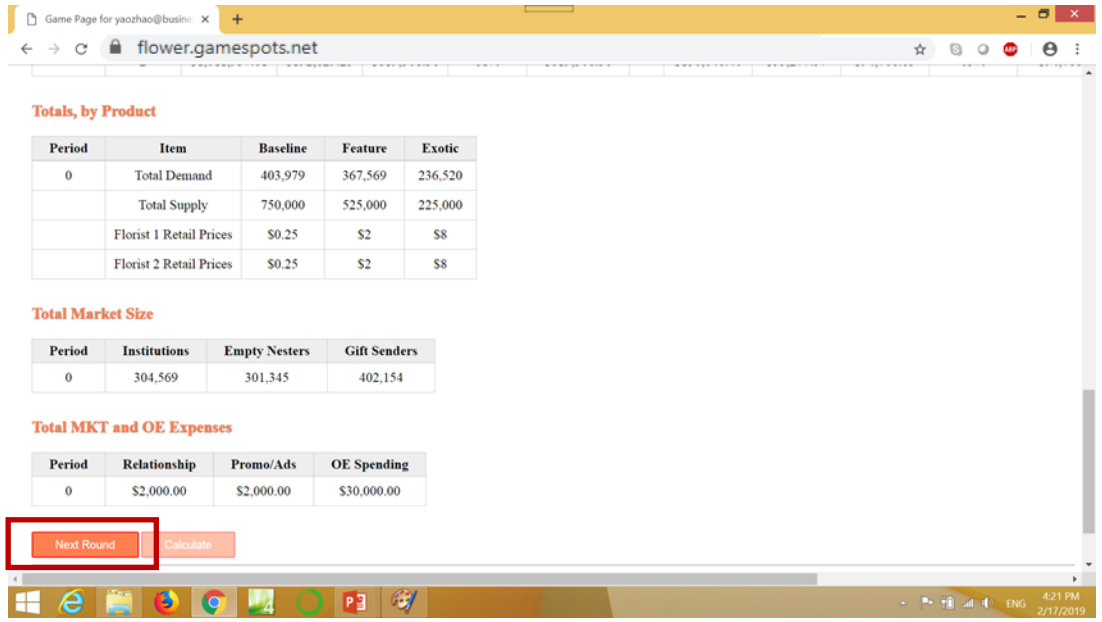

Importers



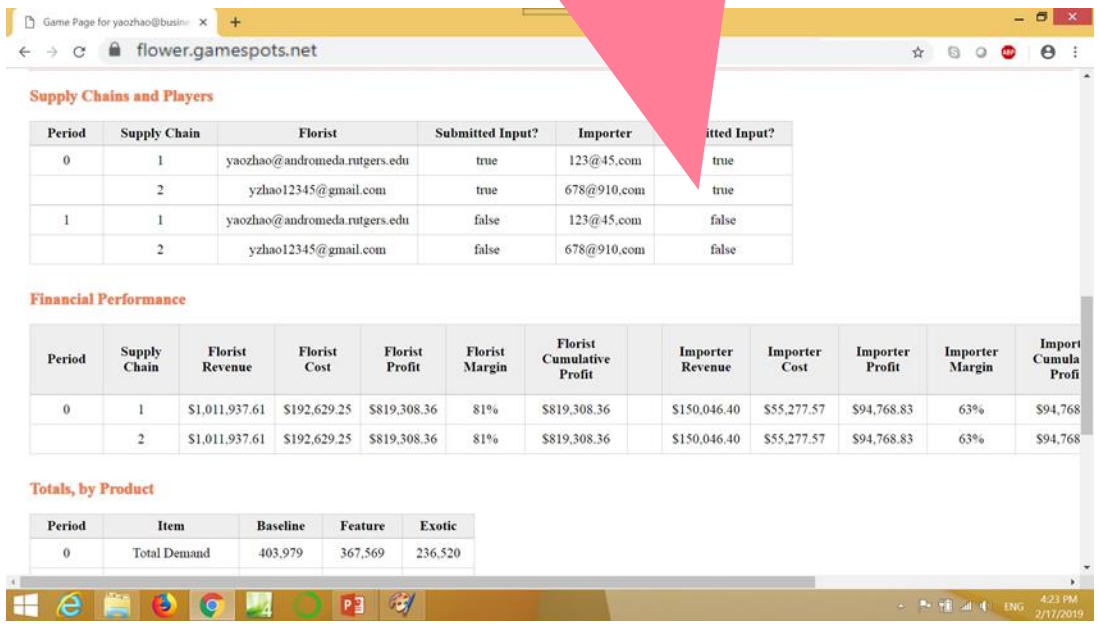

Financial summary, total product / market information for all teams.

# Instructor Clicks “Next Round”

Game status: “true” (submitted), “false” (not submitted).

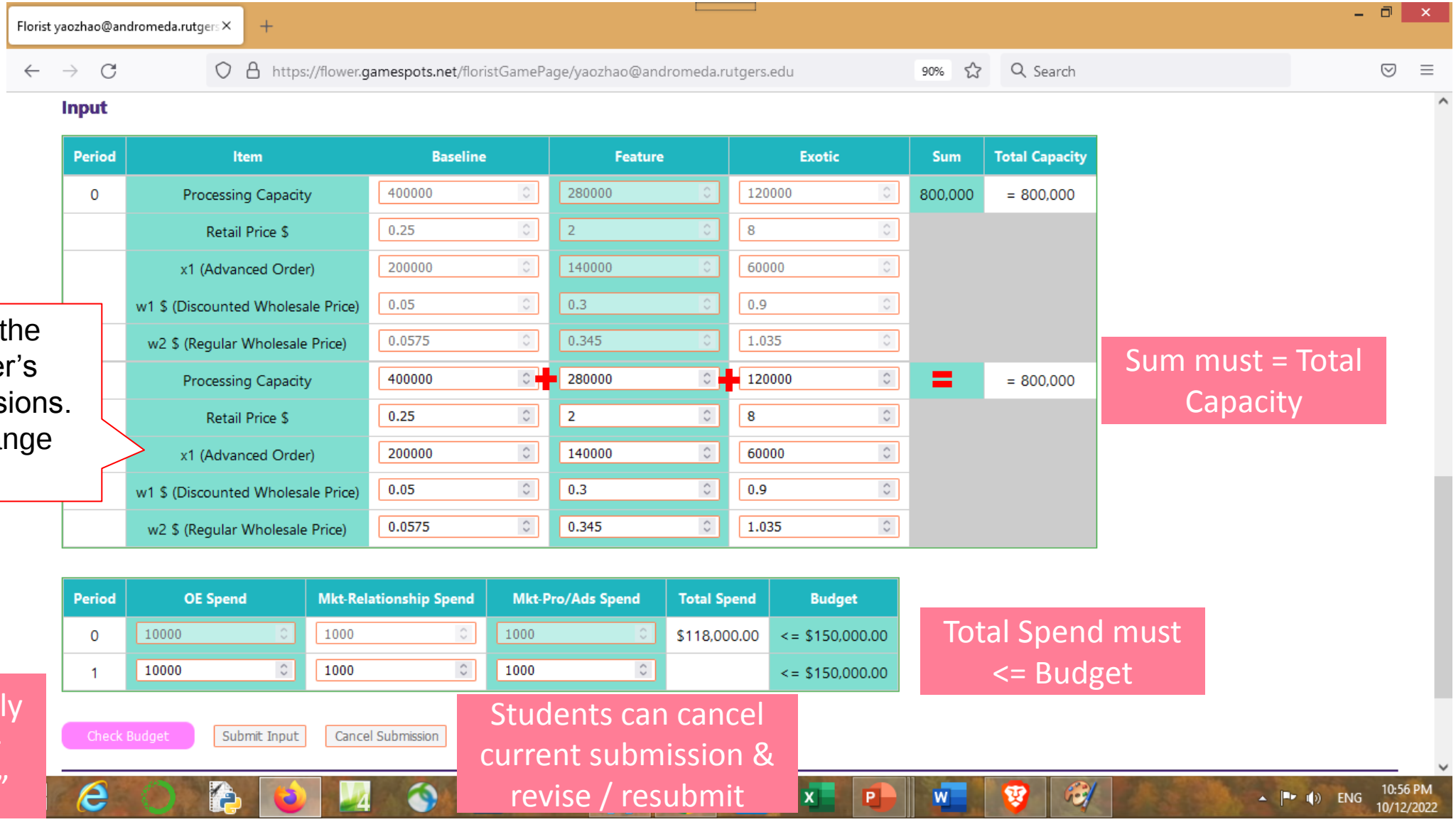



Before clicking “Next Round”




After clicking “Next Round”

# Florists “Submit” Input




System auto-fills the input by the player’s last period’s decisions. Students can change and submit.

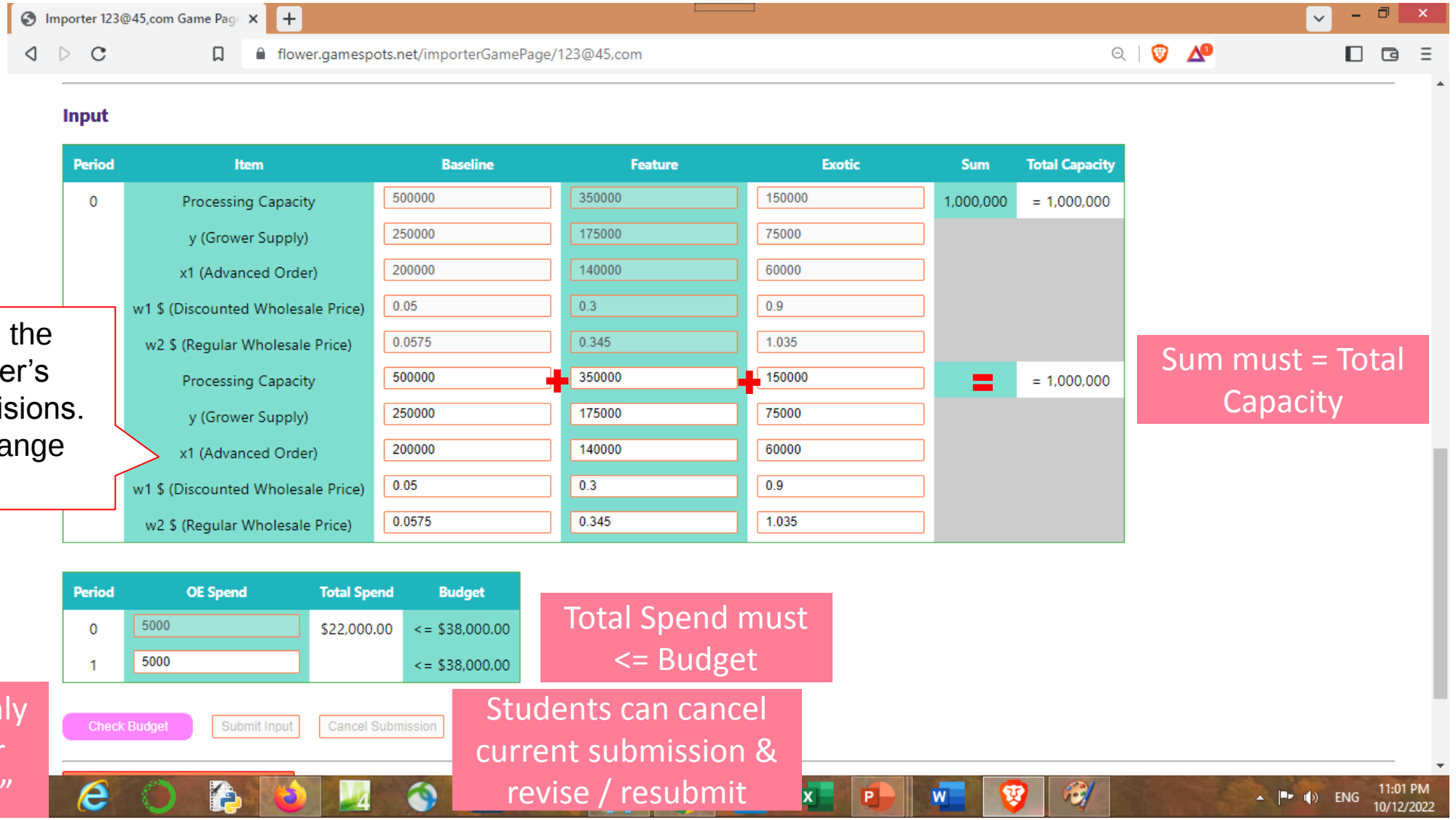
Sum must = Total Capacity

Total Spend must <= Budget

Students can only “Submit” after “Check Budget”

Students can cancel current submission & revise / resubmit

# Importers “Submit” Decisions




System auto-fills the input by the player’s last period’s decisions. Students can change and submit.

Sum must = Total Capacity

Total Spend must <= Budget

Students can only “Submit” after “Check Budget”

Students can cancel current submission & revise / resubmit

# Florist & Importer Must Match (x1, w1, w2)!

Florists

| Period | Item | Baseline | Feature | Exotic | Sum | Total Capacity |
|---|---|---|---|---|---|---|
| 0 | Processing Capacity | 400000 | 280000 | 120000 | 800,000 | = 800,000 |
| | Retail Price $ | 0.25 | 2 | 8 | | |
| | x1 (Advanced Order) | 200000 | 140000 | 60000 | | |
| | w1 $ (Discounted Wholesale Price) | 0.05 | 0.3 | 0.9 | | |
| | w2 $ (Regular Wholesale Price) | 0.0575 | 0.345 | 1.035 | | |
| 1 | Processing Capacity | 400000 | 280000 | 120000 | | = 800,000 |
| | Retail Price $ | 0.25 | 2 | 8 | | |
| | x1 (Advanced Order) | 200000 | 140000 | 60000 | | |
| | w1 $ (Discounted Wholesale Price) | 0.05 | 0.3 | 0.9 | | |
| | w2 $ (Regular Wholesale Price) | 0.0575 | 0.345 | 1.035 | | |

Importers

| Period | Item | Baseline | Feature | Exotic | Sum | Total Capacity |
|---|---|---|---|---|---|---|
| 0 | Processing Capacity | 500000 | 350000 | 150000 | 1,000,000 | = 1,000,000 |
| | y (Grower Supply) | 250000 | 175000 | 75000 | | |
| | x1 (Advanced Order) | 200000 | 140000 | 60000 | | |
| | w1 $ (Discounted Wholesale Price) | 0.05 | 0.3 | 0.9 | | |
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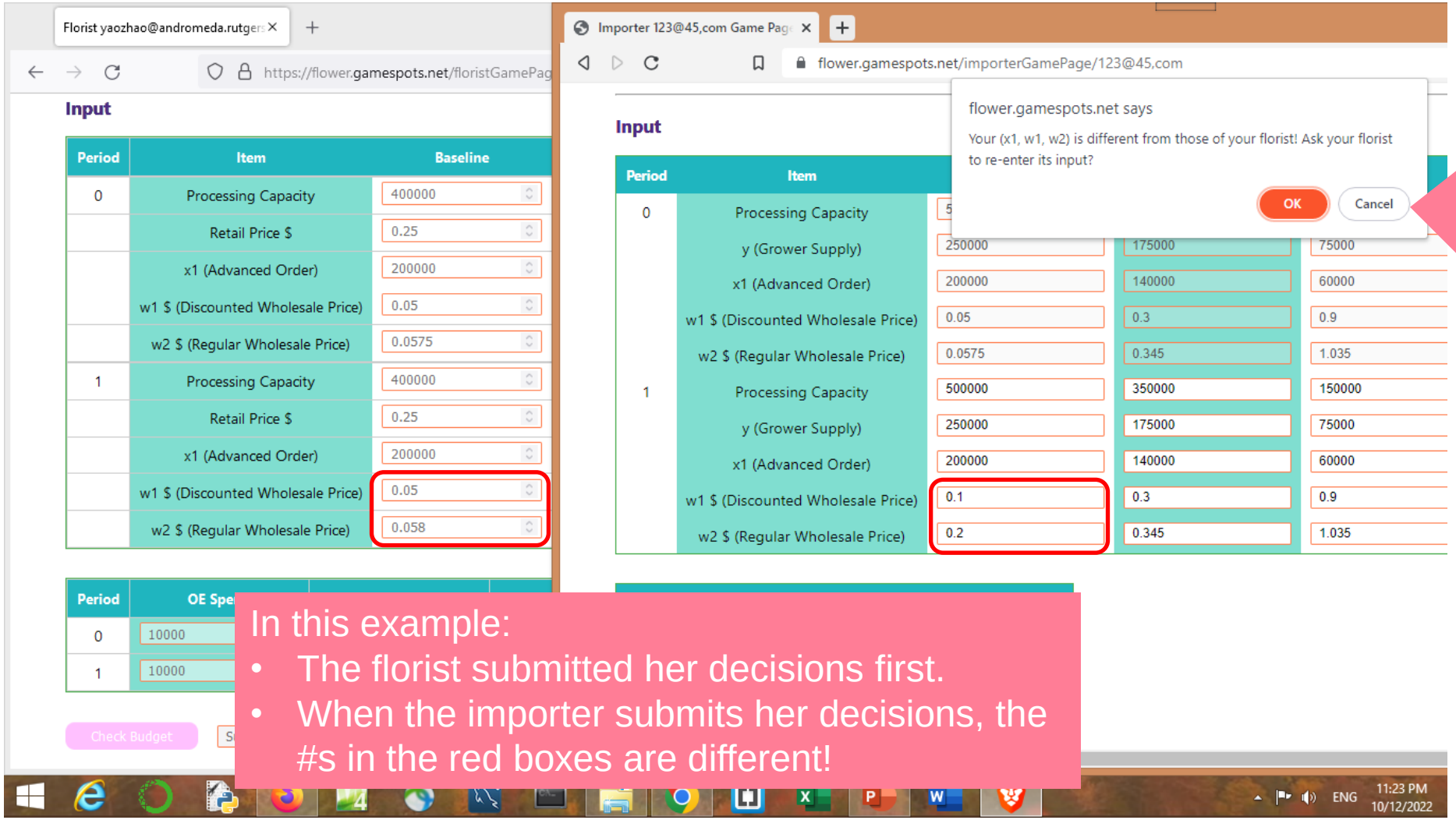
| | x1 (Advanced Order) | 200000 | 140000 | 60000 | | |
| | w1 $ (Discounted Wholesale Price) | 0.05 | 0.3 | 0.9 | | |
| | w2 $ (Regular Wholesale Price) | 0.0575 | 0.345 | 1.035 | | |

(x1, w1, w2) of the florist must match that of its importer!

# If Not Match, Earlier Input Can Be Scratched!




In this example:

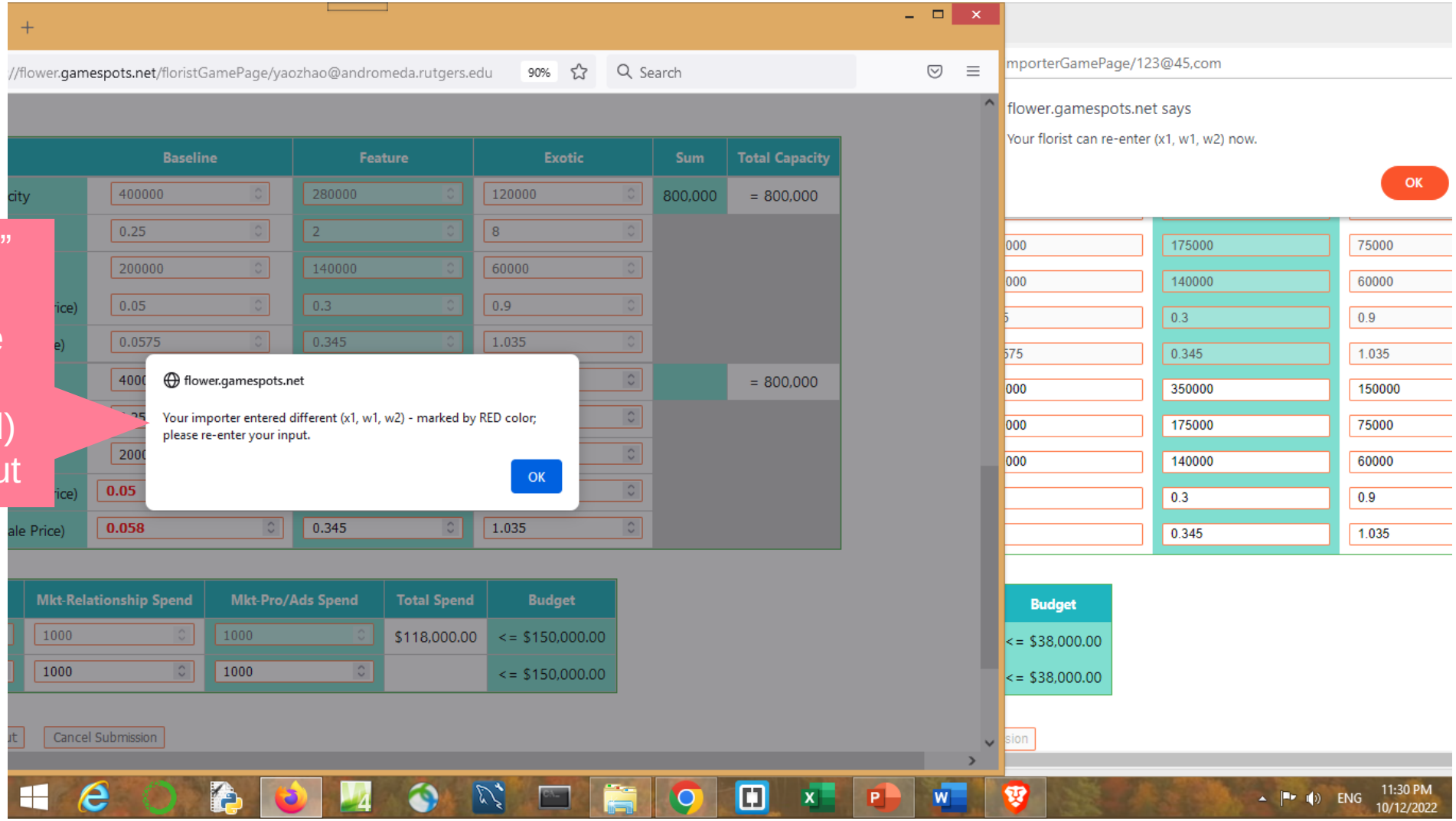
- The florist submitted her decisions first.
- When the importer submits her decisions, the #s in the red boxes are different!

Importer clicks “Cancel” to cancel her submission, and she can revise her decisions.

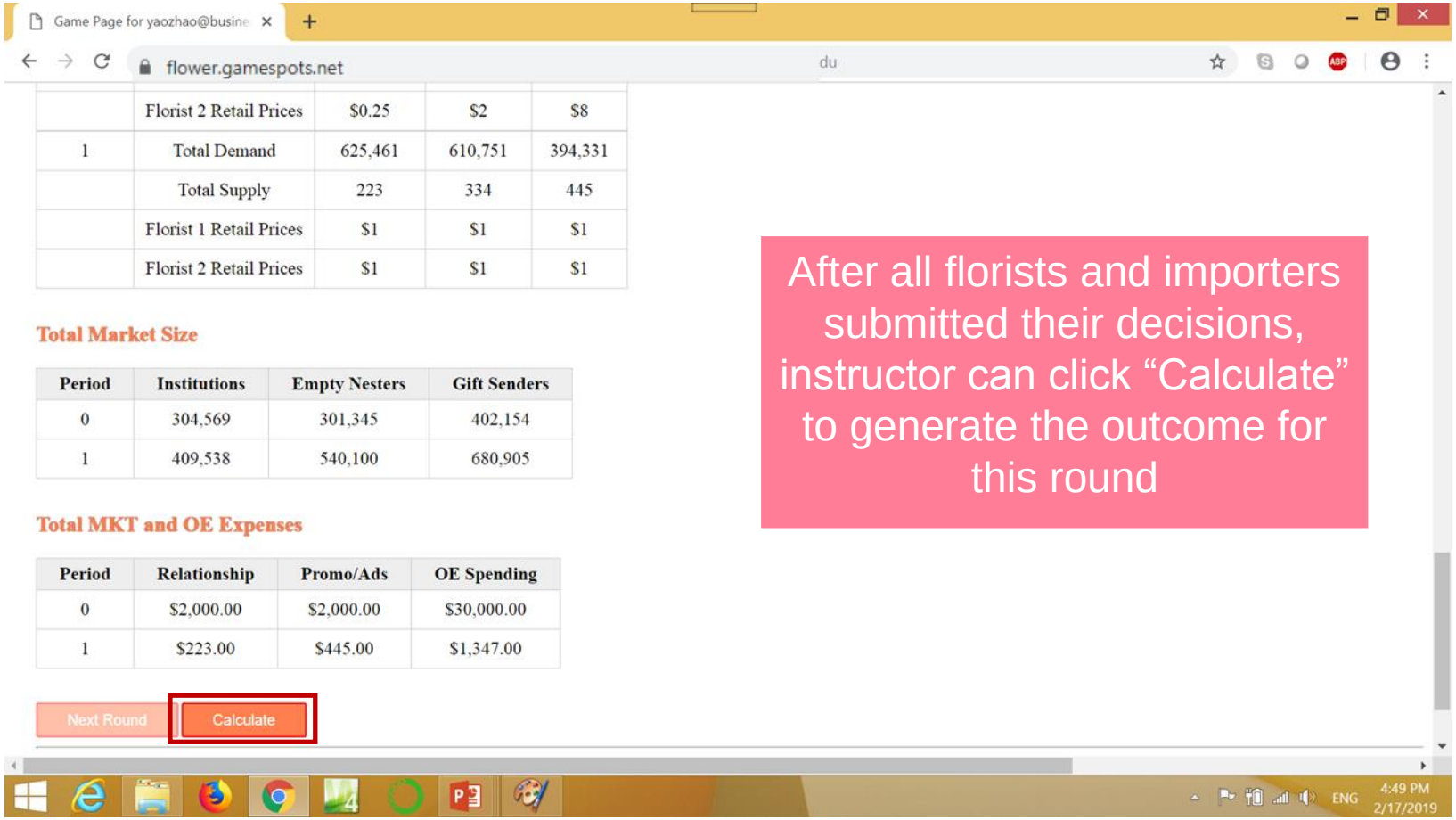
Importer clicks “OK” to scratch the florist’s submission and asks the florist to re-negotiate and resubmit her decisions. The importer needs to click “Submit” again to submit the decisions

# Resolve The Difference & Resubmit

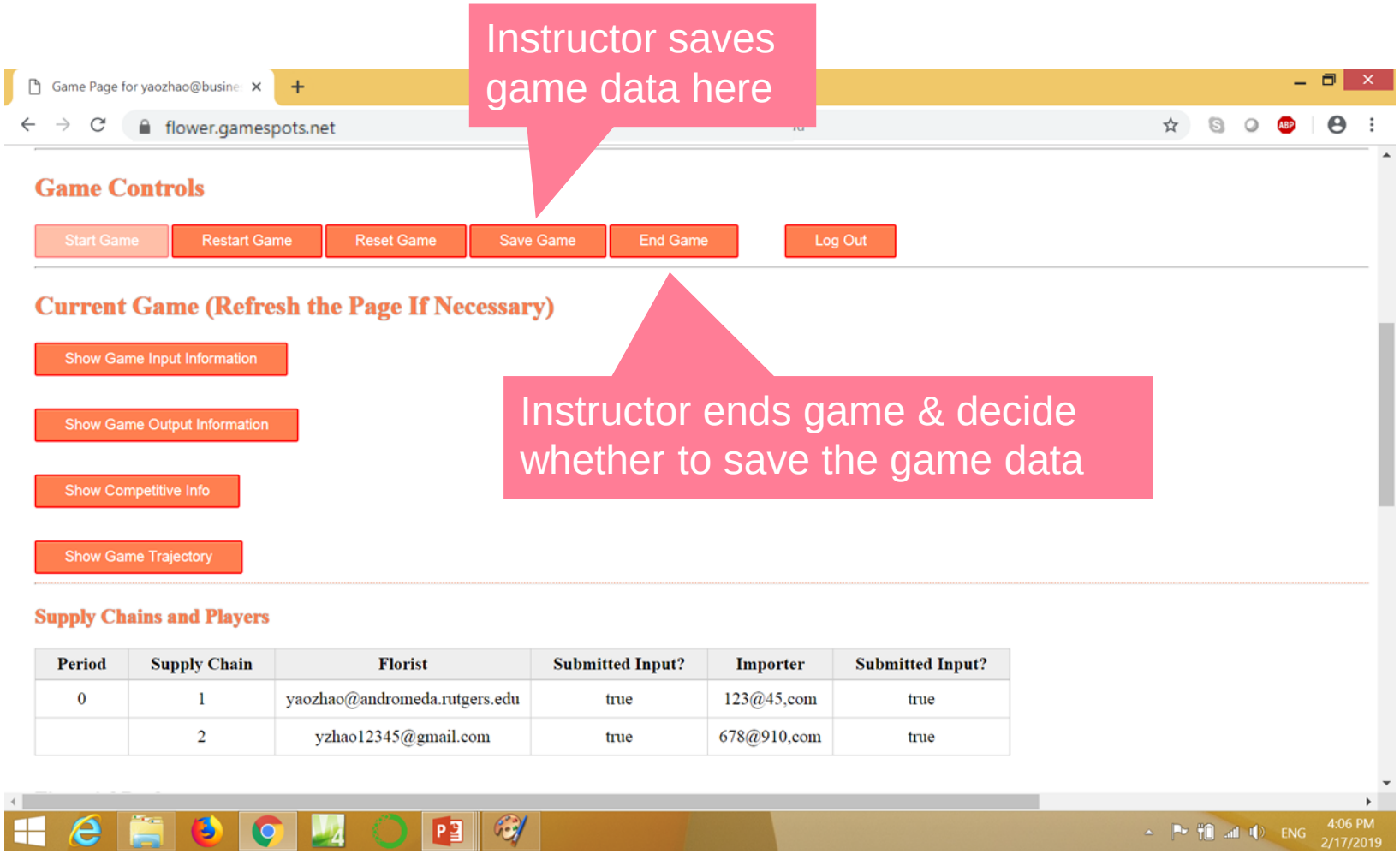
Importer clicked “OK” and now the florist needs to resolve the difference with the importer (marked red) and resubmit her input



# Instructor Generates Outcome



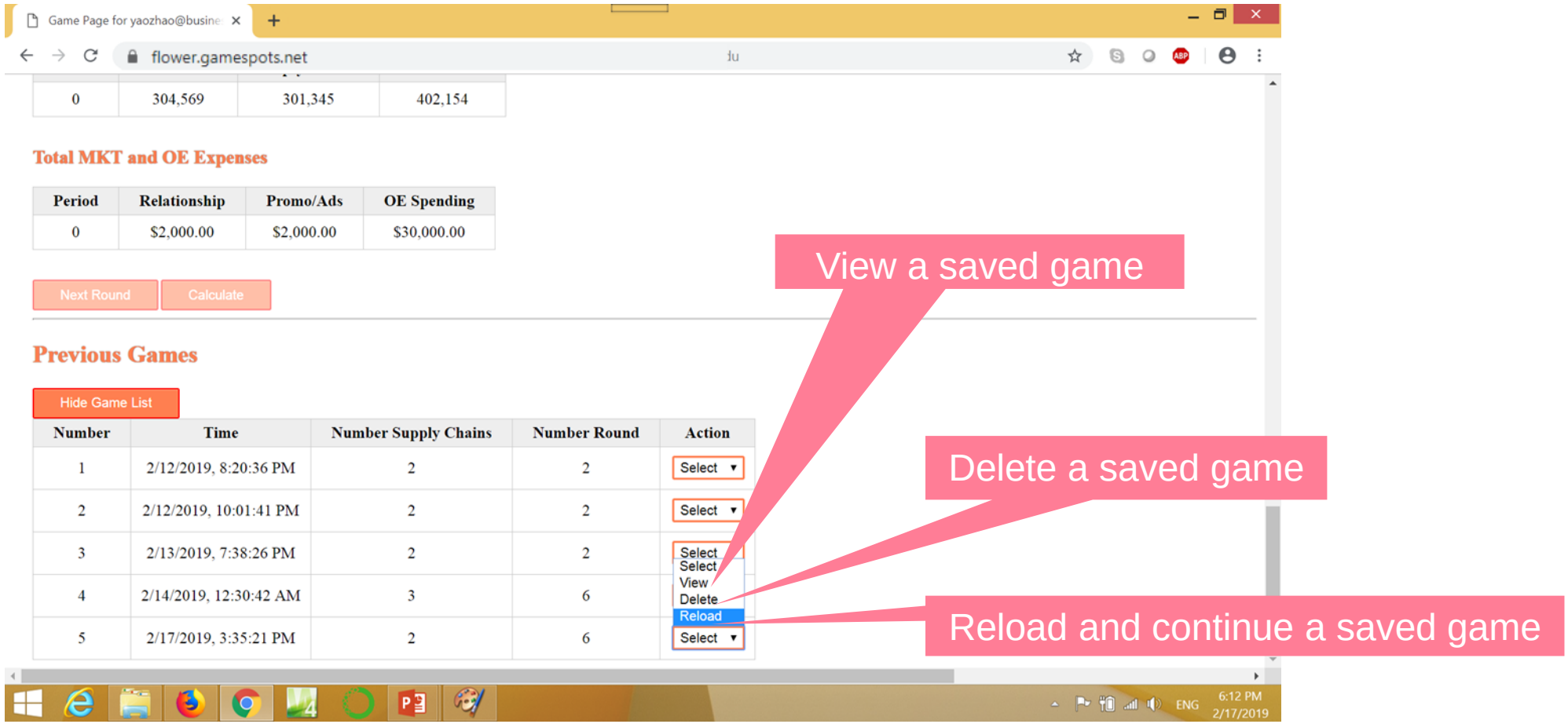
# Instructor Saves / Ends Game



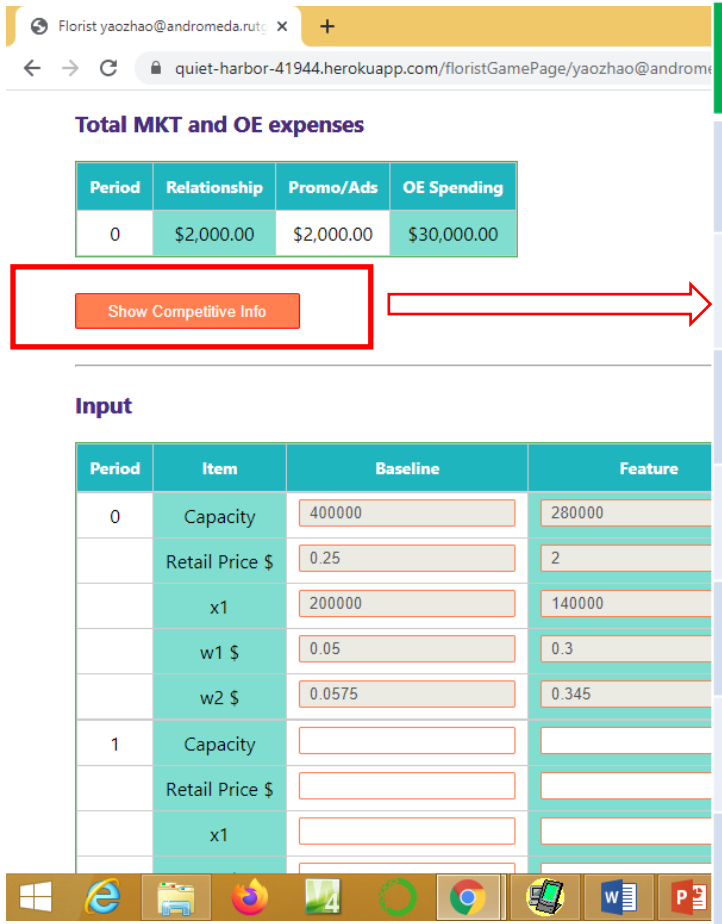
# Reminders

- Please use Chrome, Firefox, Safari, Brave (not Microsoft IE) as web browsers.
- Frequently reload / refresh the page to keep game status updated.
- Instructors:
  - Please save the game before logout to avoid the loss of game data. You can reload an un-finished game later.
  - Please end the game after the game is finished.

# Instructor Reloads Game



# Competitive Information When Available




| Business Intelligence | Baseline | Feature | Exotic |
|---|---|---|---|
| Capacity (individual firms) | | | |
| Demand (supply chains) | | | |
| Supply (supply chains) | | | |
| Yield (individual firms) | | | |
| Processing cost (individual firms) | | | |
| Service level (supply chains) | | | |
| MKT / OE expenses (supply chains) | | | |

Players (florists and importers) can use this button to find competitive information.

# Teaching Deck Explanation

| File Name | Content & Objectives |
|---|---|
| 1.Teaching objective and plan | Teaching plan and debrief for instructors |
| 2.FloraPark-Instructor-Manual | Instructors' game manual |
| 3.FloraPark-introduction | Game introduction and assignments for students |
| FloraPark-1-introduction | Supply chain challenges & key lessons |
| FloraPark-2-strategic-thinking | Strategic thinking, supply chain and marketing interfaces |
| FloraPark-3-team-decision | Teamwork and group decisions |
| FloraPark-4-collaborative-strategy | Coordinate supply chain via price & quantity contracts |
| FloraPark-5-competitive-strategy | Competitive supply chain strategies |
| FloraPark-6-negotiation | Negotiation |
| FloraPark-7-concluding | Game trajectory |
| FloraPark-8-reflection | Reflections – From Game to Reality |

# For More Information

URL: https://yzhao12345.github.io/#flower

Email: yaozhao@business.rutgers.edu