

scienceexperiment.online

A platform for experiencing Games Theory

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## Introduction

The present document intends to be a User Manual for anyone interested in using the platform [scienceexperiment.online](http://scienceexperiment.online) for creating and running online games and whose goal is to study and experiment with the fundamentals of Game Theory.

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# 1. The Beauty Contest Game

The Beauty Contest game is a game in which all players are asked to pick up a number in a predefined interval, and the winner of the game will be the player whose choice was the closest to half of the average of all player's choices.

## Creating a Beauty Contest Game

1. Go to [scienceexperiment.online/classroom](http://scienceexperiment.online/classroom)
2. Look for the text at the bottom that says: "**Want to create a game?** Click [here!](#)" and click there.

Home Welcome

**Hello there!**

Welcome to the classroom demo. Please, log into a game to get started:

Game PIN:

Own a game? [Log in](#) to access the dashboard.  
Want to create a game? Click [here!](#)

3. Configure the game
  1. Select type "Beauty contest"
  2. Enter email address (required but for the moment not relevant, you can put any address here)
  3. Set a password. Important. (This will allow you to log into the game dashboard)
  4. Click on "Create game", it will then redirect you to the game dashboard

Home Welcome

## Create new game

Game type

Email address  Admin password

Already own a game? [Log in](#) to access the dashboard.  
Want to play? [Log into a game](#)

Game theory - 2018

After this, you will be redirected to the dashboard of the game, where you can also control every aspect of the game.

Home Welcome, [log out?](#)


## Beauty contest dashboard

Running

Stop game

### Game details

Game PIN: jnufjL  
Registration URLs:  
<https://scienceexperiment.online/class>  
<https://scienceexperiment.online/beauty>  
Status: Running  
Type: Beauty contest  
Votes collected: 0



### Game configuration

Min: 1  
Max: 100  
Prompt: -- no prompt set --

No votes are collected yet

### Game details: (Left blue panel)

Here you can see some info about the game and the Game PIN. This PIN is the key to register to the game; it should be shared with the players of the game.

In addition, two URLs and a QR code are shown there too that can be used to access the game directly without entering the PIN code.

There is also information about the number of votes collected and about the Status of the Game, which can be “Running” or “Closed”.

When the game is closed, information about the average of votes is also shown, and the Minimum and maximum votes are also displayed.

### Game configuration: (centre grey panel):

Here you can edit the game configuration, as for the beauty contest, this is the min and max allowed votes, along with a prompt, which is the message that will be displayed to the participants.

Above the blue panel there is a button to stop the game, once you click it, the game will not allow further registrations nor votes, and will change its status to "closed". Then the winner of the game will see a message in his/her screen after refreshing the page.

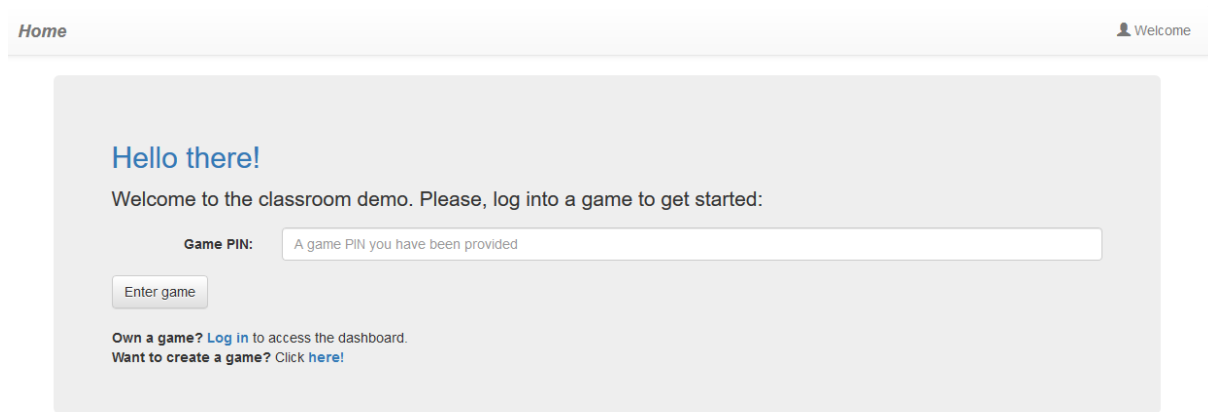
On the top right corner, there is a link to log out.

As game administrator, you log in into the dashboard [here](#) using your game PIN and the password you set before.

## Playing a Beauty Contest game

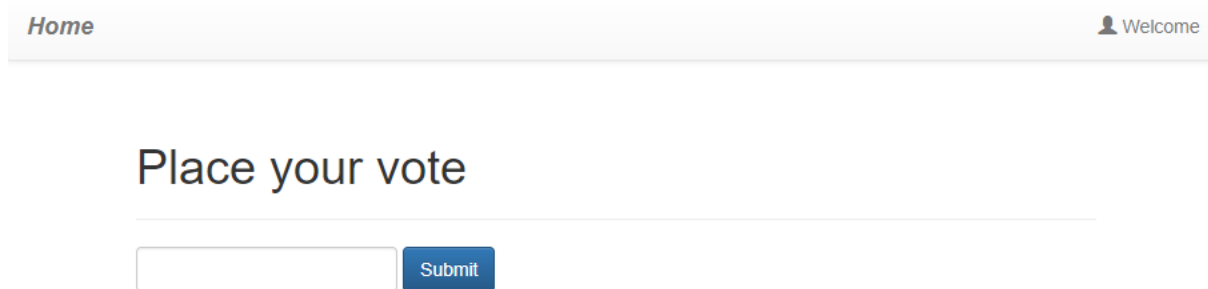
The subjects could enter the game in several different ways:

- by scanning the QR code provided on the Game details panel
- by entering in a browser the URL provided on the Game details panel
- by entering the game's PIN code in [scienceexperiment.online/classroom](https://scienceexperiment.online/classroom):



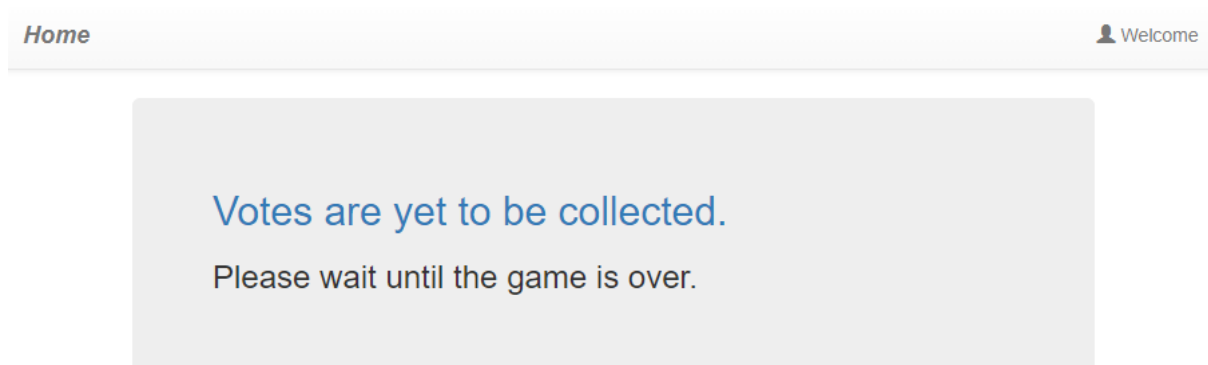
The screenshot shows a web interface with a header containing 'Home' on the left and 'Welcome' with a user icon on the right. The main content area has a light gray background and contains the following text: 'Hello there!' in blue, followed by 'Welcome to the classroom demo. Please, log into a game to get started:'. Below this is a form with a label 'Game PIN:' and a text input field containing the placeholder text 'A game PIN you have been provided'. A button labeled 'Enter game' is positioned below the input field. At the bottom of the form, there are two lines of text: 'Own a game? [Log in](#) to access the dashboard.' and 'Want to create a game? Click [here!](#)'.

Once the subjects enter, they will be redirected to a new page where they can place their vote. Any prompt set earlier in the game's configuration panel will be shown now.



The screenshot shows a web interface with a header containing 'Home' on the left and 'Welcome' with a user icon on the right. The main content area has a light gray background and contains the text 'Place your vote' in a large, dark font. Below this text is a horizontal line, followed by a text input field and a blue button labeled 'Submit'.

Once the vote is placed, a page will be displayed to let players know that they have to wait until the end of the game in order to get to know the results



The screenshot shows a web interface with a header containing 'Home' on the left and 'Welcome' with a user icon on the right. The main content area has a light gray background and contains the text 'Votes are yet to be collected.' in blue, followed by 'Please wait until the game is over.' in a smaller, dark font.

When the game is finished, the players can refresh their browsers and they will be notified of their results:

The winner(s) as follows:

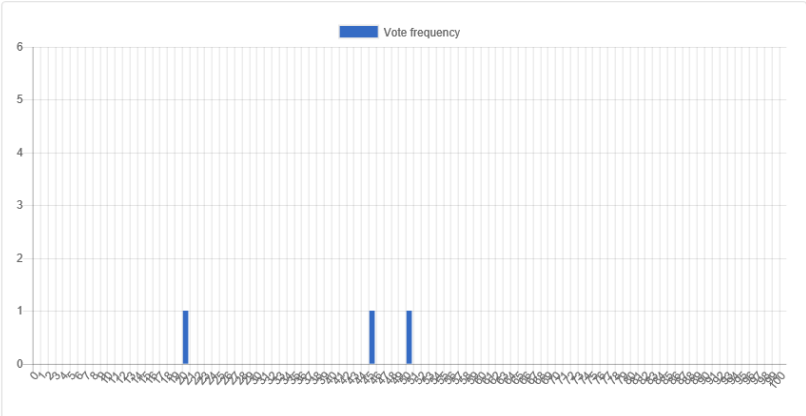
Home Welcome, log out?

You can **log out** now by clicking on the log out button in the top right corner of this page. ✕

Your vote: 20 WINNER

Game Details

**Average is:** 38.33  
**Closest vote to half the average:**  
20  
**Min:** 20, **Max:** 50




The histogram shows the frequency of votes from 0 to 50. The y-axis represents frequency from 0 to 6. There are three bars of height 1 at approximately x=20, x=35, and x=40. The bar at x=20 is highlighted in blue, indicating it is the winning vote.

And the rest of participants as below:

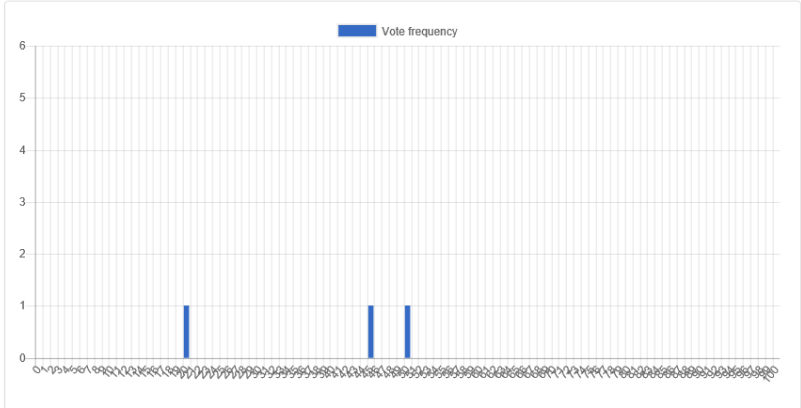
Home Welcome, log out?

You can **log out** now by clicking on the log out button in the top right corner of this page. ✕

Your vote: 45 

Game Details

**Average is:** 38.33  
**Closest vote to half the average:**  
20  
**Min:** 20, **Max:** 50



The histogram shows the frequency of votes from 0 to 50. The y-axis represents frequency from 0 to 6. There are three bars of height 1 at approximately x=20, x=35, and x=40. The bar at x=20 is highlighted in blue, indicating it is the winning vote.

On the administration side of the game, all the information is available as well:

Home Welcome, [log out?](#)


## Beauty contest dashboard

Closed

### Game details

**Game PIN:**  
**Registration URLs:**  
<https://scienceexperiment.online/class>  
<https://scienceexperiment.online/beauty>

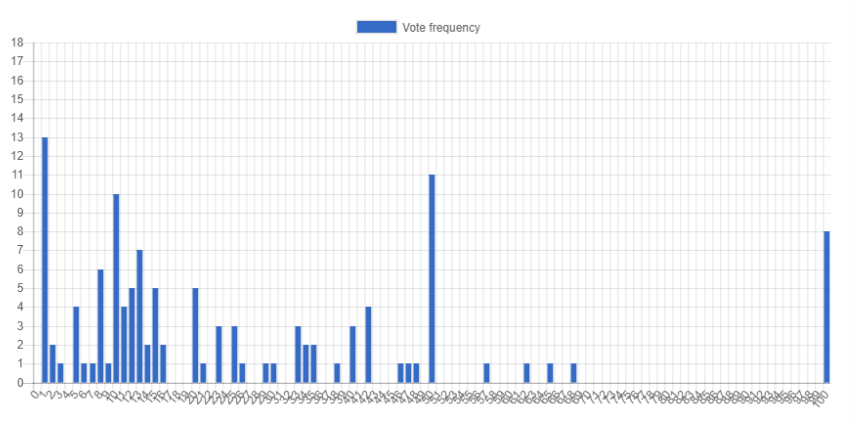
**Status:** Closed  
**Type:** Beauty contest  
**Votes collected:** 120  
**Average is:** 26.63  
**Closest vote to half the average:** 13  
**Min:** 1, **Max:** 100



### Game configuration

**Min:** 1 **Prompt:** -- no prompt set --  
**Max:** 100

### Vote frequency



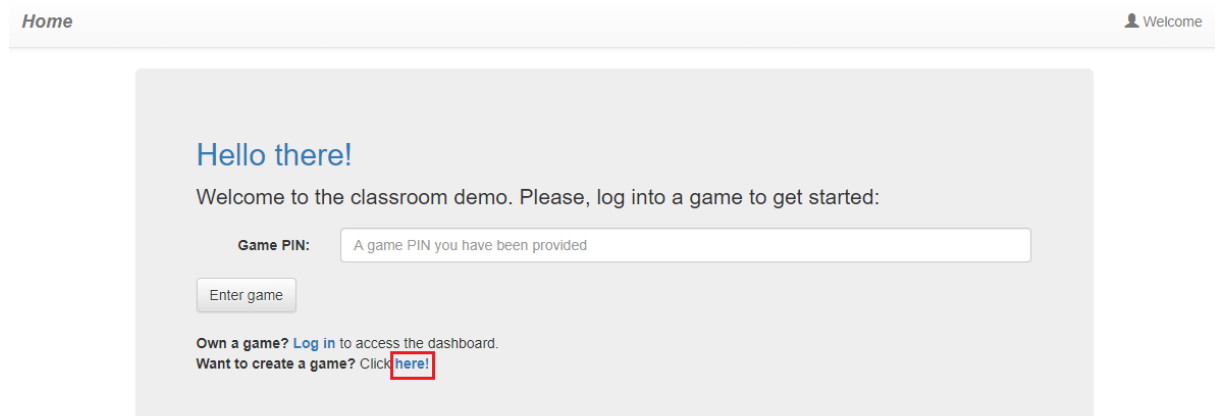
Vote Value	Frequency
1	13
2	2
3	4
4	1
5	1
6	6
7	1
8	1
9	1
10	10
11	4
12	5
13	7
14	2
15	2
16	5
17	1
18	3
19	1
20	1
21	1
22	3
23	1
24	1
25	1
26	11
27	1
28	1
29	1
30	1
31	1
32	1
33	1
34	1
35	1
36	1
37	1
38	1
39	1
40	1
41	1
42	1
43	1
44	1
45	1
46	1
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77	1
78	1
79	1
80	1
81	1
82	1
83	1
84	1
85	1
86	1
87	1
88	1
89	1
90	1
91	1
92	1
93	1
94	1
95	1
96	1
97	1
98	1
99	1
100	8

## 2. The Voluntary Contributions Game

The voluntary contributions is a game in which each player has a number of coins that can voluntarily and secretly place in a common pot together with other players' contributions. The number of coins in the common pot is then multiplied by a certain factor (greater than one and less than the number of players) and the common earnings are evenly divided among players. Each player also keeps the coins that he did not contribute, and the winner of the game is the player that earns the most coins by adding his share of the common earnings and those coins he did not play.

### Creating a Voluntary Contribution Game

1. Go to [scienceexperiment.online/classroom](http://scienceexperiment.online/classroom)
2. Look for the text at the bottom that says: "**Want to create a game?** Click [here!](#)" and click there.



The screenshot shows a web interface for a classroom demo. At the top left, it says "Home" and at the top right, "Welcome" with a user icon. The main content area has a grey background and contains the following text and elements:

- "Hello there!" in blue text.
- "Welcome to the classroom demo. Please, log into a game to get started:"
- A "Game PIN:" label followed by a text input field containing "A game PIN you have been provided".
- An "Enter game" button.
- Text at the bottom: "Own a game? [Log in](#) to access the dashboard."
- Text at the bottom: "Want to create a game? Click [here!](#)" where the word "here!" is highlighted with a red box.

3. Configure the game
  1. Select type "Voluntary Contributions"
  2. Enter email address (required but for the moment not relevant, you can put any address here)
  3. Set a password. Important. (This will allow you to log into the game dashboard)
  4. Click on "Create game", it will then redirect you to the game dashboard



## Create new game

Game type

Voluntary contributions

Email address

example@example.com

Admin password

.....

Create game

Already own a game? [Log in](#) to access the dashboard.

Want to play? [Log into a game](#)

After this, you will be redirected to the dashboard of the game, where you can also control every aspect of the game.

## Voluntary contributions dashboard

Running


Stop game

**Game details**

**Game PIN:** PYoUwS

**Registration URLs:**  
<https://scienceexperiment.online/class>  
<https://scienceexperiment.online/beat>

**Status:** Running  
**Type:** Voluntary contributions  
**Votes collected:** 0



Game configuration Edit

**Min:** 0      **Prompt:** You have 4 coins to spend. Please, enter your contribution  
**Max:** 4      **Factor:** 3

No votes are collected yet

### Game details: (Left blue panel)

Here you can see some info about the game and the Game PIN. This PIN is the key to register to the game; it should be shared with the players of the game.

In addition, two URLs and a QR code are shown there too that can be used to access the game directly without entering the PIN code.

There is also information about the number of votes collected and about the Status of the Game, which can be "Running" or "Closed".

When the game is closed, information about number of votes and contributions is shown.

## Game configuration: (centre grey panel):

Here you can edit the game configuration, as for the voluntary contributions, this is the minimum and maximum number of coins, and the multiplying factor of the common pot, along with a prompt, which is the message that will be displayed to the participants.

Above the blue panel there is a button to stop the game, once you click it, the game will not allow further registrations nor votes, and will change its status to "closed".

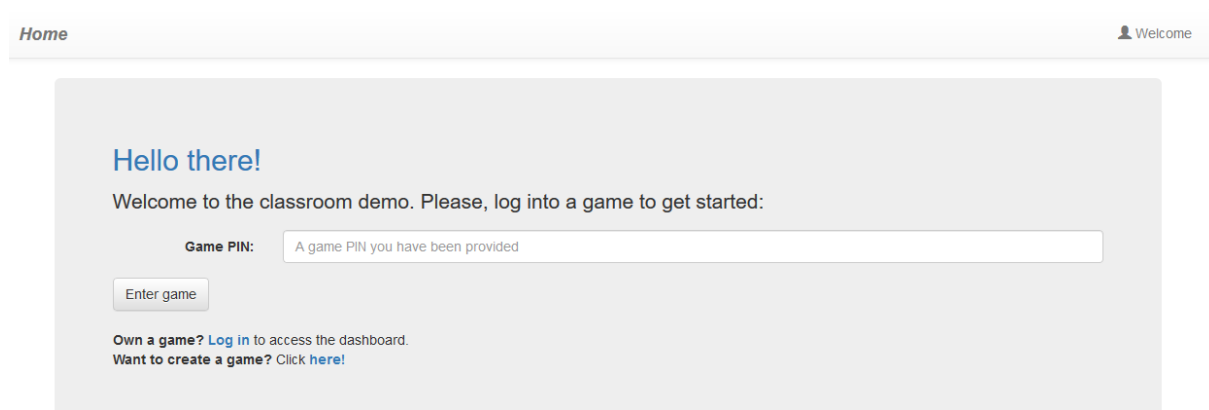
On the top right corner, there is a link to log out.

As game administrator, you log in into the dashboard [here](#) using your game PIN and the password you set before.

## Playing the Voluntary Contribution Game

The subjects could enter the game in several different ways:

- by scanning the QR code provided on the Game details panel
- by entering in a browser the URL provided on the Game details panel
- by entering the game's PIN code in [scienceexperiment.online/classroom](#):



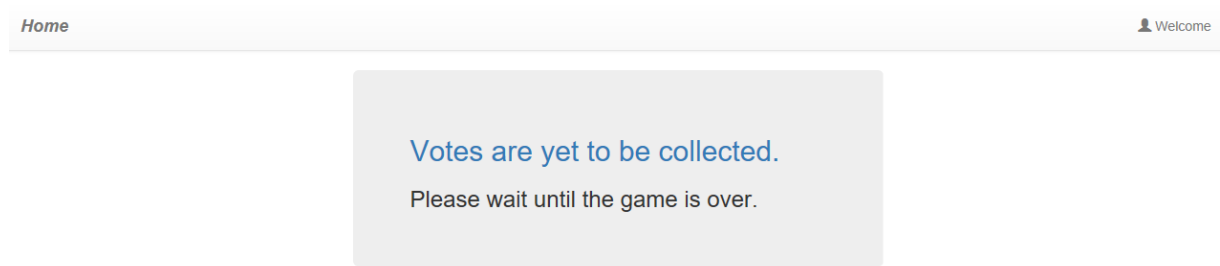
The screenshot shows a web interface with a header containing 'Home' on the left and 'Welcome' with a user icon on the right. The main content area is a grey box with the following text: 'Hello there!', 'Welcome to the classroom demo. Please, log into a game to get started:', a 'Game PIN:' label next to a text input field containing 'A game PIN you have been provided', an 'Enter game' button, and two links: 'Own a game? Log in to access the dashboard.' and 'Want to create a game? Click here!'.

Once the subjects enter, they will be redirected to a new page where they can place their bet. Any prompt set earlier in the game's configuration panel will be shown now.



The screenshot shows a web interface with a header containing 'Home' on the left and 'Welcome' with a user icon on the right. The main content area contains the text: 'You have 4 coins to spend. Please, enter your contribution' followed by a text input field and a 'Submit' button.

Once the contribution is placed, a page will be displayed to let players know that they have to wait until the end of the game in order to get to know the results



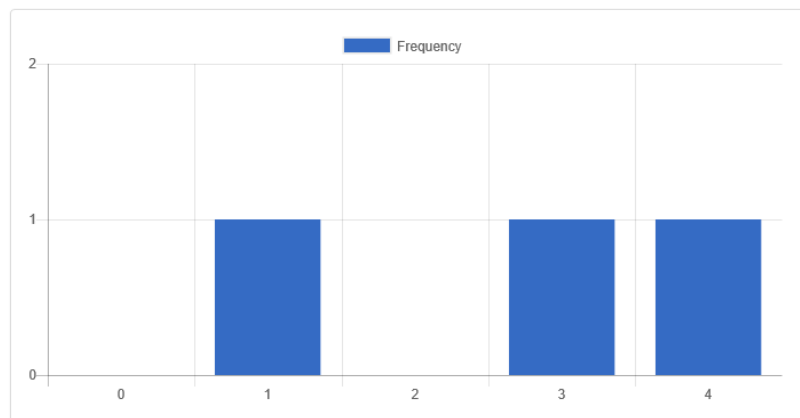
When the game is finished, the players can refresh their browsers and they will be notified of their results:

The winner(s) as follows:


Your vote: 4  WINNER

Game Details

Total contribution: 8  
Number of contributions: 3  
Earnings:  
8

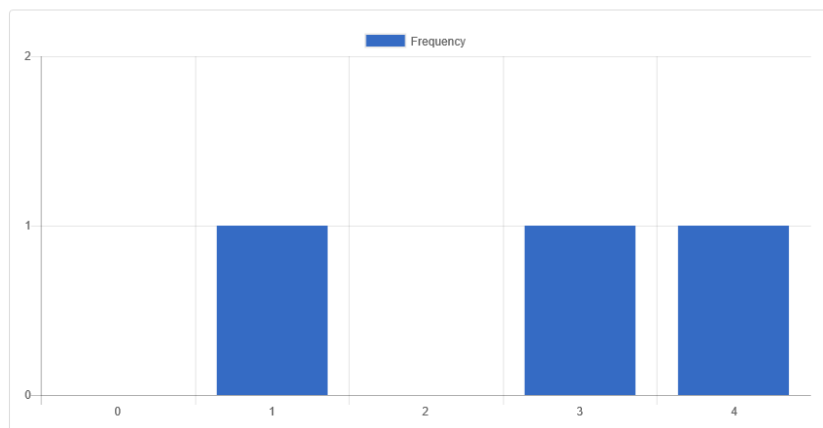


And the rest of players as below:

Your vote: 3 

Game Details

Total contribution: 8  
Number of contributions: 3  
Earnings:  
9



On the administration side of the game, all the information is available as well:


Home Welcome, [log out?](#)

## Voluntary contributions dashboard

Closed

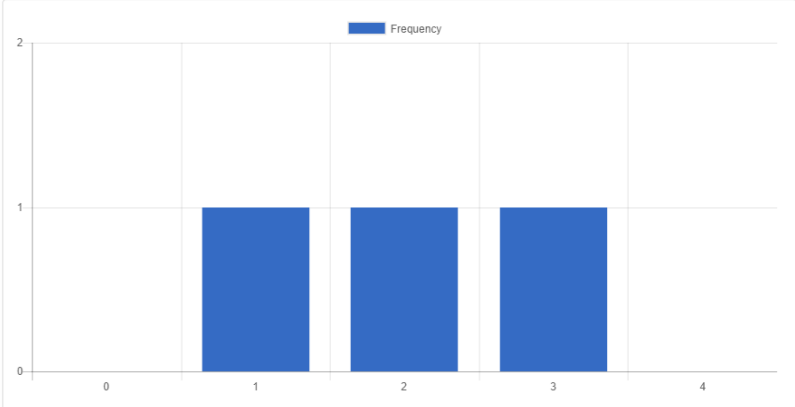
### Game details

**Game PIN:** Ttkc8Q  
**Registration URLs:**  
<https://scienceexperiment.online/class>  
<https://scienceexperiment.online/beat>  
**Status:** Closed  
**Type:** Voluntary contributions  
**Votes collected:** 3  
**Total contribution:** 6  
**Number of contributions:** 3



### Game configuration

**Min:** 0      **Prompt:** You have 4 coins to spend. Please, enter your contribution  
**Max:** 4      **Factor:** 3



Contribution Value	Frequency
0	0
1	1
2	1
3	1
4	0

### 3. The Second Price Auction Game

The Second Price Auction Game is a game in which certain good is being auctioned and several players are secretly bidding for it. Players send their bids individually and the player who sends the highest bid is the winner of the auction, although he will not pay the price on his bid, but the price of the second highest bid, for the good in auction.

#### Creating a Second Price Auction Game

1. Go to [scienceexperiment.online/classroom](http://scienceexperiment.online/classroom)
2. Look for the text at the bottom that says: "**Want to create a game? Click [here!](#)**" and click there.

The screenshot shows the top navigation bar with "Home" on the left and "Welcome" on the right. The main content area has a grey background with the text "Hello there!" and "Welcome to the classroom demo. Please, log into a game to get started:". Below this is a form with a label "Game PIN:" and a text input field containing "A game PIN you have been provided". There is an "Enter game" button. At the bottom of the form, there are two links: "Own a game? Log in to access the dashboard." and "Want to create a game? Click [here!](#)". The "here!" link is highlighted with a red box.

3. Configure the game
  1. Select type "Second Price Auction"
  2. Enter email address (required but for the moment not relevant, you can put any address here)
  3. Set a password. Important. (This will allow you to log into the game dashboard)
  4. Click on "Create game", it will then redirect you to the game dashboard

The screenshot shows the "Create new game" form. The top navigation bar has "Home" and "Welcome". The form has a title "Create new game" and a "Game type" dropdown menu set to "Second price auction". Below are two input fields: "Email address" with the value "example@example.com" and "Admin password" with a masked password ".....". There is a "Create game" button. At the bottom, there are two links: "Already own a game? Log in to access the dashboard." and "Want to play? Log into a game".

After this, you will be redirected to the dashboard of the game, where you can also control every aspect of the game.


Home Welcome, [log out?](#)

## Second price auction dashboard

Running Stop game

### Game details

Game PIN: CsYpcn  
Registration URLs:  
<https://scienceexperiment.online/class>  
<https://scienceexperiment.online/bea>  
Status: Running  
Type: Second price auction  
Votes collected: 0



### Game configuration

Min: 0      Prompt: Enter your bid  
Max: 10000

No votes are collected yet

### Game details: (Left blue panel)

Here you can see some info about the game and the Game PIN. This PIN is the key to register to the game; it should be shared with the players of the game.

In addition, two URLs and a QR code are shown there too that can be used to access the game directly without entering the PIN code.

There is also information about the number of votes collected and about the Status of the Game, which can be "Running" or "Closed".

When the game is closed, information about number of votes and bids is shown, together with the highest bid and the second highest bid.

### Game configuration: (centre grey panel):

Here you can edit the game configuration, as for the second price auction, this is the minimum and maximum numbers for the bids, along with a prompt, which is the message that will be displayed to the participants.

Above the blue panel there is a button to stop the game, once you click it, the game will not allow further registrations nor votes, and will change its status to "closed".

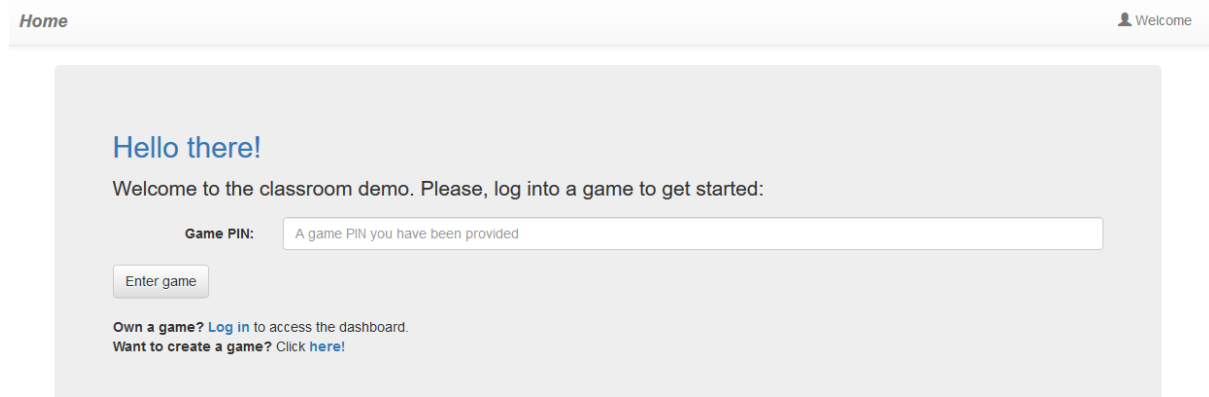
On the top right corner, there is a link to log out.

As game administrator, you log in into the dashboard [here](#) using your game PIN and the password you set before.

## Playing the Second Price Auction Game

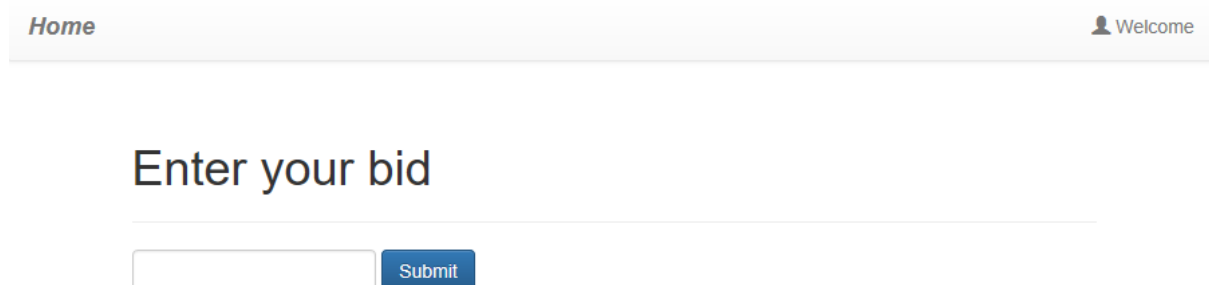
The subjects could enter the game in several different ways:

- by scanning the QR code provided on the Game details panel
- by entering in a browser the URL provided on the Game details panel
- by entering the game's PIN code in [scienceexperiment.online/classroom](https://scienceexperiment.online/classroom):



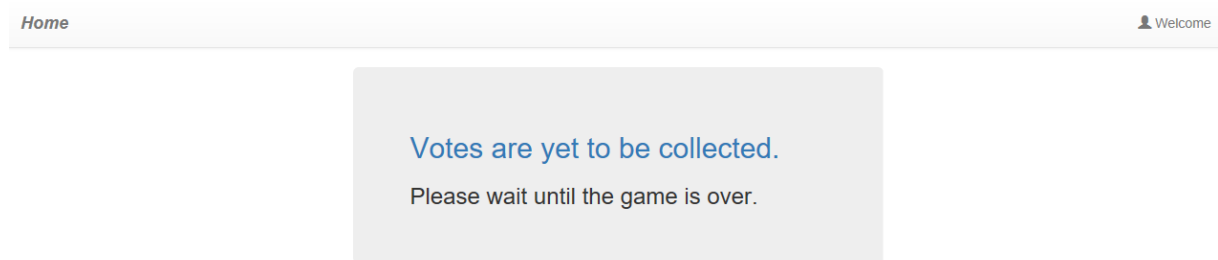
The screenshot shows a web interface with a header containing 'Home' on the left and 'Welcome' with a user icon on the right. The main content area has a light gray background and contains the following text: 'Hello there!' in blue, followed by 'Welcome to the classroom demo. Please, log into a game to get started:'. Below this is a form with a label 'Game PIN:' and a text input field containing the placeholder text 'A game PIN you have been provided'. A button labeled 'Enter game' is positioned below the input field. At the bottom of the form, there are two lines of text: 'Own a game? [Log in](#) to access the dashboard.' and 'Want to create a game? Click [here!](#)'.

Once the subjects enter, they will be redirected to a new page where they can place their bid. Any prompt set earlier in the game's configuration panel will be shown now.



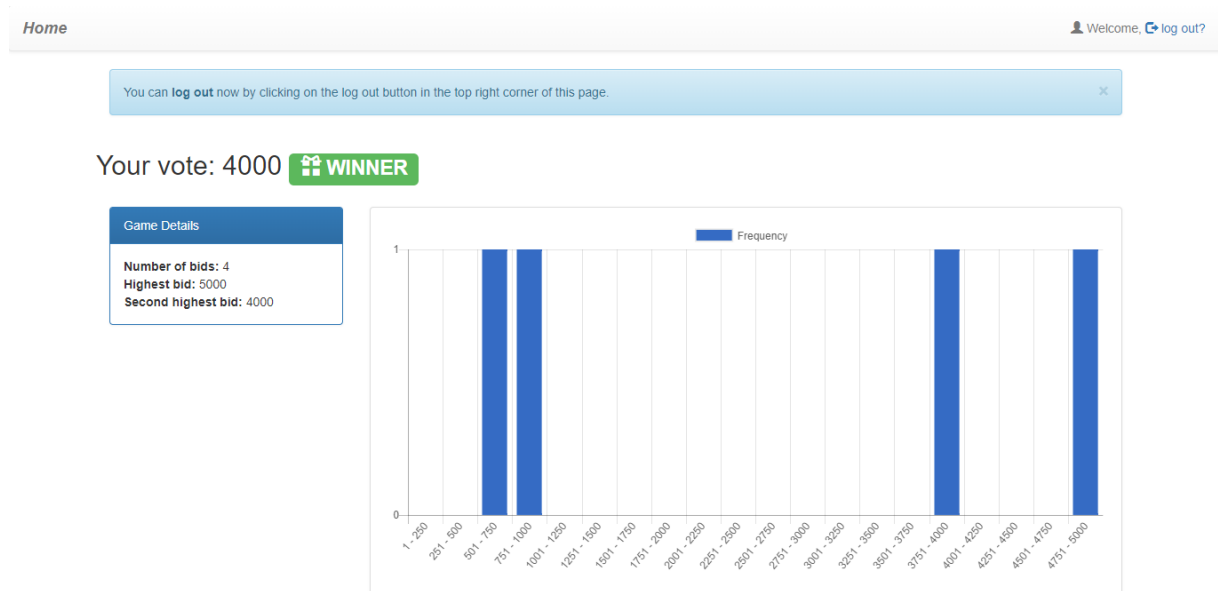
The screenshot shows a web interface with a header containing 'Home' on the left and 'Welcome' with a user icon on the right. The main content area has a light gray background and contains the following text: 'Enter your bid' in a large, bold font. Below this text is a horizontal line, followed by a text input field and a blue button labeled 'Submit'.

Once the bid is placed, a page will be displayed to let players know that they have to wait until the end of the game in order to get to know the results



When the game is finished, the players can refresh their browsers and they will be notified of their results:


The winner(s) as follows:





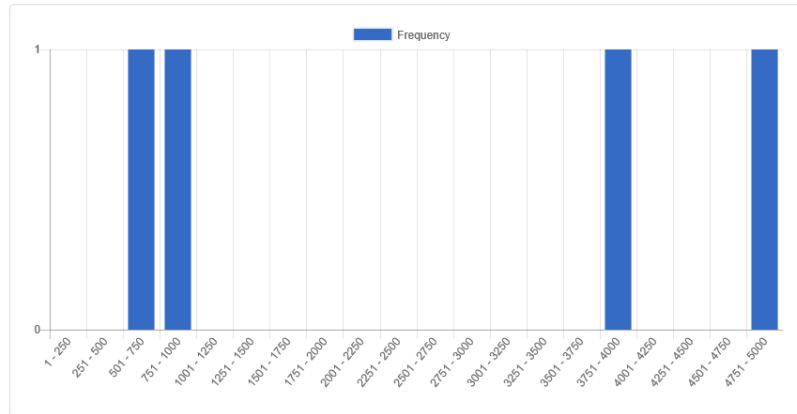
And the rest of the players as below:

You can **log out** now by clicking on the log out button in the top right corner of this page. ✕

Your vote: 600 

**Game Details**

**Number of bids:** 4  
**Highest bid:** 5000  
**Second highest bid:** 4000



On the administration side of the game, all the information is available as well:

### Second price auction dashboard

Closed

**Game details**

**Game PIN:** LjJTxp  
**Registration URLs:**  
<https://scienceexperiment.online/class>  
<https://scienceexperiment.online/beat>

**Status:** Closed  
**Type:** Second price auction  
**Votes collected:** 4  
**Number of bids:** 4  
**Highest bid:** 5000  
**Second highest bid:** 4000



**Game configuration**

**Min:** 0  
**Max:** 10000

**Prompt:** Enter your bid

Bid Range	Frequency
1 - 250	0
251 - 500	0
501 - 750	1
751 - 1000	1
1001 - 1250	0
1251 - 1500	0
1501 - 1750	0
1751 - 2000	0
2001 - 2250	0
2251 - 2500	0
2501 - 2750	0
2751 - 3000	0
3001 - 3250	0
3251 - 3500	0
3501 - 3750	0
3751 - 4000	1
4001 - 4250	0
4251 - 4500	0
4501 - 4750	0
4751 - 5000	1