# Modeling and Simulation Ⅰ

2.17.2024
Sohun

## 1 Parking Lot Model Experiment

（１）Experiment overview

There is a building with a parking lot on the first floor that can park a total of six cars , three on each side. The entrance to the parking lot faces the road , and cars can only enter and exit from there. Additionally , the parking lot is devided into left and right sections , so we cannot move left or right within the parking lot. For example , suppose that car ① is parked at the far end on the left side of the parking lot , and car ② is parked at the far end of the parking lot of the left side , closest to the road. When car ① leaves the parking lot , car ② will get in the way , so someone have to move it out of the way. A similar thing also happens when a car enters. When the residents of this building move six cars in and out of this parking lot , is it better to fix the parking lot position ? Or is it better to park from the back without fixing the parking lot position ? Now which one ?

（２）Experimental result（VB version simulation）

【Experiment day】

February 17 . 2024

【PC used】

Lavie NX850/N

【Software used】

Self-made software

『parking model 6』

【Method of operation】

Click the［The dice roll］button , then the［The dice stop］button.

■ To fix the parking lot position on the left side of the screen.

For example , if the die roll is 3 and parking lot ③ is empty , the car will be parked in parking lot ③. If the die roll is 3 and parking lot ③ is not empty , the car will be gotten out from parking lot ③. Click the button ① to ⑥ to move the cars in or out. ① to ⑥ represent the names of both the car and the parking lot.

■ Not to fix the parking lot position on the right side of the screen.

For example , if the die roll is 3 , and car ③ is not parked , park car ③ at the back. If the die roll is 3 and car ③ is parked , take car ③ out of the parking lot. If you click the parking position button , the button display changes in the following order : ① → ② → ・・・ → ⑤ → ⑥ → blank. For example , ③ represents car ③. A blank space indicates that there are no cars parked in the parrking lot. ① to ⑥ represent the names of the cars.

■ If you are unable to enter or leave the parking lot because another car is in the way , click［↑］button and count the number of times you have to move out of the way by 1. Even if you have to move both cars , the number of moves will be counted as one.

【Consideration】

In the first experiment , the number of times the cars were moved was 14 when the location of the parking lot was fixed , and the number of times the cars were moved was 3 when the location of the parking lot was not fixed.

In the second experiment , the number of times the cars were moved was 13 when the location of the parking lot was fixed , and the number of times the cars were moved was 7 when the location of the parking lot was not fixed.

In the third experiment , the number of times the cars were moved was 22 when the location of the parking lot was fixed , and the number of times the cars were moved was 5 when the location of the parking lot was not fixed.

In the fourth experiment , the number of times the cars were moved was 13 when the location of the parking lot was fixed , and the number of times the cars were moved was 10 when the location of the parking lot was not fixed.

Therefore , it is clear that it is better to park from back without fixing the location of the parking lot , rather than specifying and fixing the location of the parking lot.

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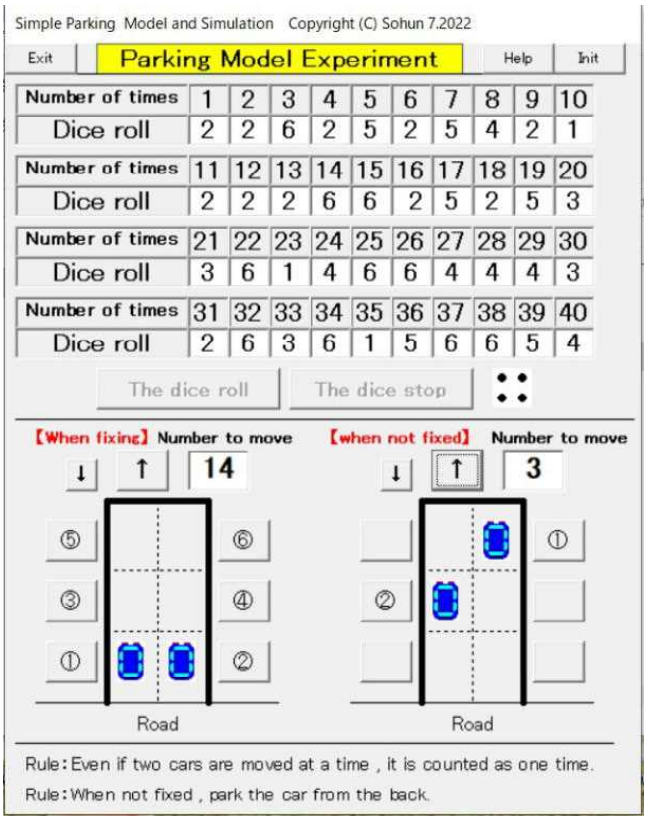
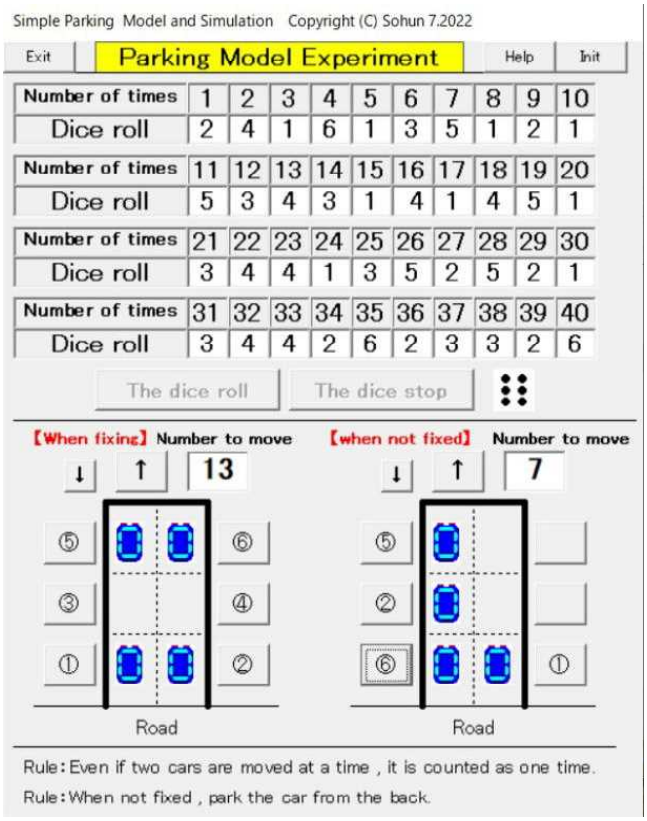
## 1 Parking Lot Model Experiment

（２）Experimental result（VB version simulation）

（ａ） 1st experiment




（ｂ） 2nd experiment



# Modeling and Simulation Ⅰ

2.17.2024
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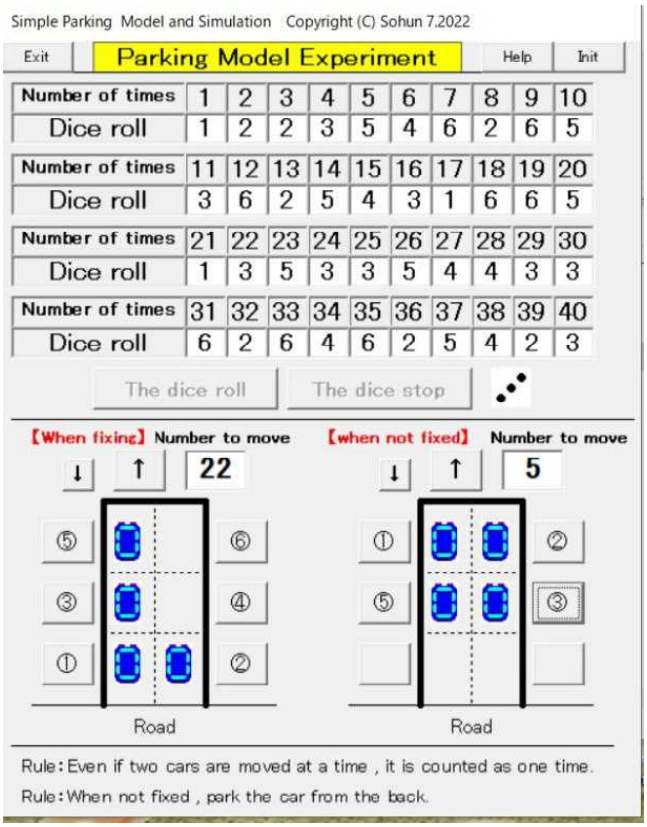
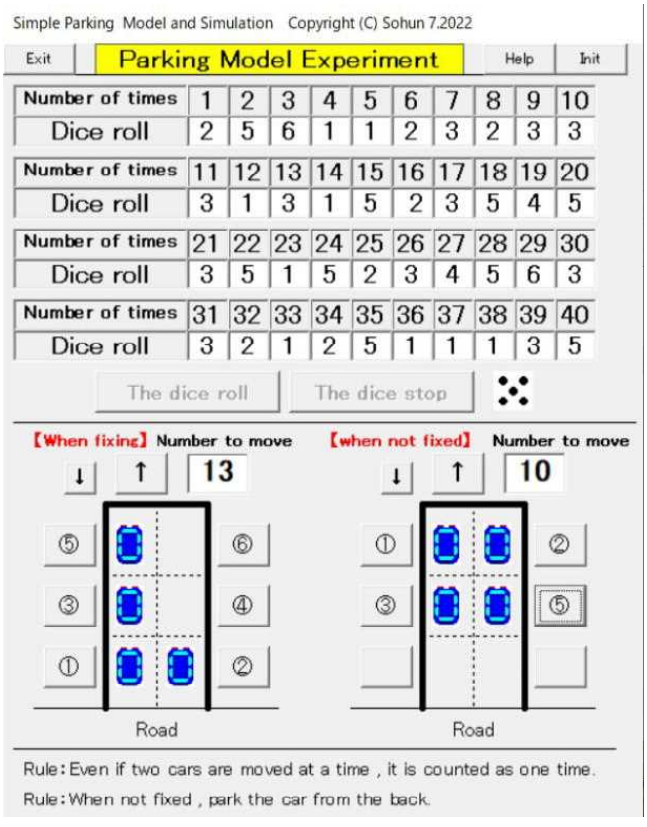
## 1 Parking Lot Model Experiment

（２）Experimental result（VB version simulation）

（ｃ）3rd experiment




（ｄ）4th experiment



# Modeling and Simulation Ⅰ

2.20.2024
Sohun

## 2 Experiment 1 of Preparing Change

（１） Experiment overview

Do you ever serve as the secretary of a class meeting , etc. ?
Think about it as if you were the secretary.
Let's assume that the number of participants in the class meeting is 35 and the membership fee is 3,500 yen.
Let's also assume that there are only two types of paticipants : those who need change for four 1,000 yen bills , and those who don't need change for three 1,000 yen bills and one 500 yen coin.
Membership fees will be collected from those who arrive at the venue , and those who need change will be given 500 yen in change on the spot.
However , based on experience , the ratio of people who need change and people who don't need change is 50/50.
Now , as the secretary , how many 500 yen coins should you have on hand for changes ?

（２） Experimental result（VB version simulation）

【Experiment day】
February 20 . 2024
【PC used】
Lavie NX850/N
【Software used】
Self-made software
『preparing change 16』
【Concept of experiment】
The ratio of people who need change and people who don't need change is 50/50 , so if you toss a coin , if it comes up heads , you think that someone who don't need change has arrived , and if it comes up tails , you think that someone who need change has arrived.
In other words , if a head rolls up , three 1,000 yen bills and a 500 yen coin will be paid , so the secretary will have one more 500 yen coin in hand.
Also , if tails come up , four 1,000 yen bills will be paid , so change will be required , and the secretary will have one less 500 yen coin.
【Method of operation】
［Auto Start］: Click the button to start the experiment.
［Auto Stop］: Click the button to stop the experiment.
［Init］: Click the button to clear the list and restart the experimenrt from the biginning.
【Consideration】
In the first experiment , the minimum value up to 35 times was -1 , so when there were 35 participants , one 500 yen coin was needed as change.
In the second experiment , the minimum value up to 35 times was -9 , so when there were 35 participants , nine 500 yen coins were needed as change.
In the third experiment , the minimum value up to 35 times was -7 , so when there were 35 participants , seven 500 yen coins were needed as change.
In the forth experiment , the minimum value up to 35 times was 0 , so when there were 35 participants , there was no need for 500 yen coins as change.
Therefore , it turns out that for a class meeting with 35 participants , it is sufficient to prepare nine 500 yen coins for change.

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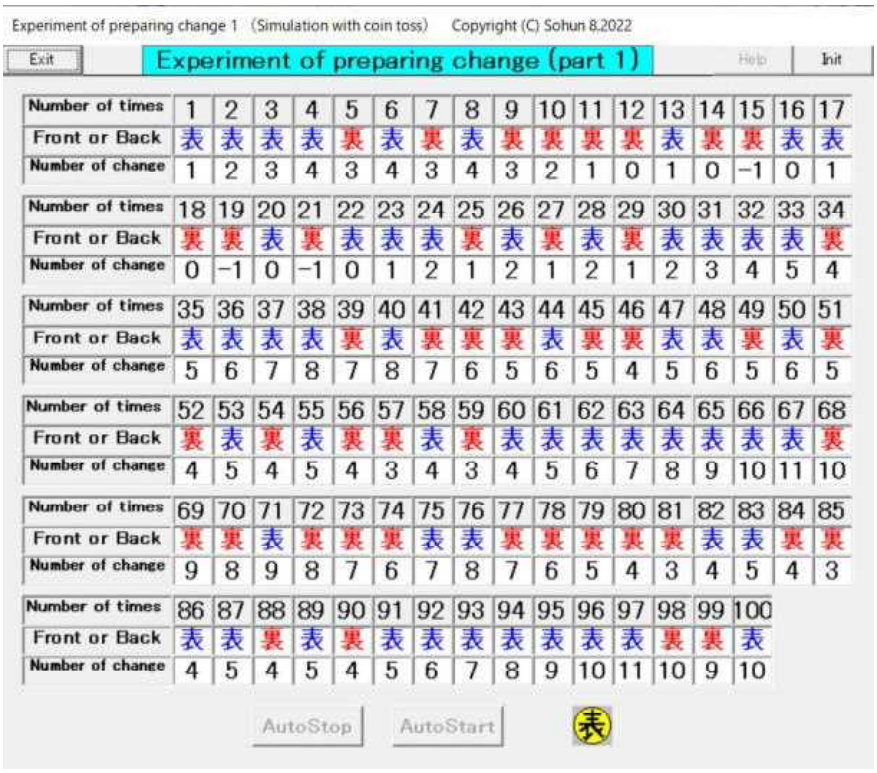
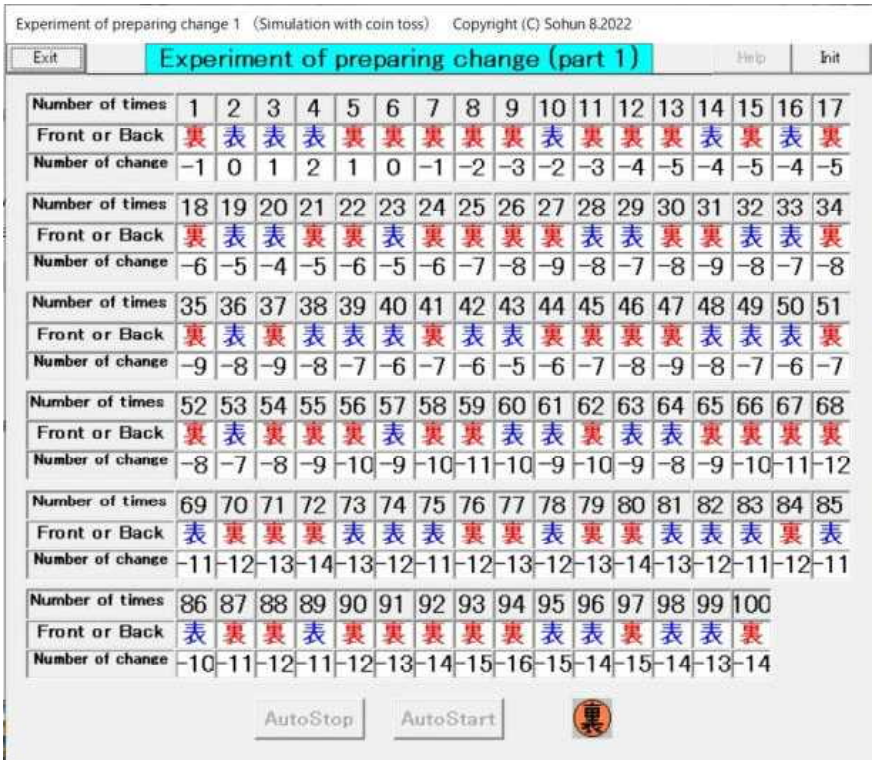
## 2 Experiment 1 of Preparing Change

（２） Experimental result（VB version simulation）

（ａ） 1st experiment




（ｂ） 2nd experiment



# Modeling and Simulation Ⅰ

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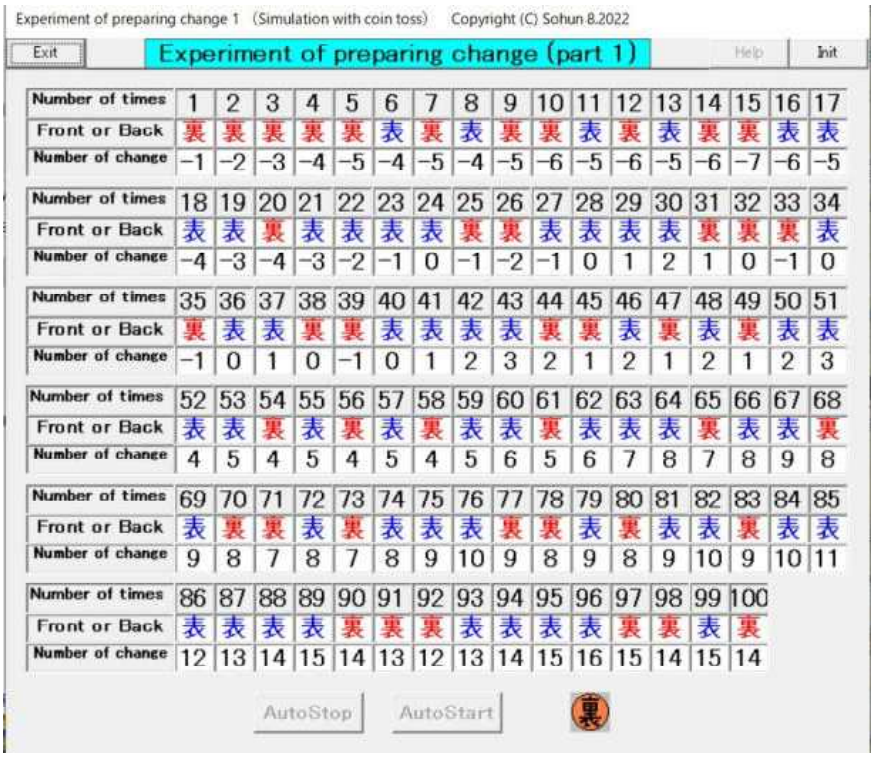
## 2 Experiment 1 of Preparing Change

（２） Experimental result（VB version simulation）

（ｃ） 3rd experiment




| Number of times | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 裏 | 裏 | 裏 | 裏 | 裏 | 表 | 裏 | 表 | 裏 | 裏 | 表 | 裏 | 表 | 裏 | 裏 | 表 | 表 |
| Number of change | -1 | -2 | -3 | -4 | -5 | -4 | -5 | -4 | -5 | -6 | -5 | -6 | -5 | -6 | -7 | -6 | -5 |

| Number of times | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 表 | 裏 | 表 | 表 | 表 | 表 | 裏 | 裏 | 表 | 表 | 表 | 表 | 裏 | 裏 | 裏 | 表 |
| Number of change | -4 | -3 | -4 | -3 | -2 | -1 | 0 | -1 | -2 | -1 | 0 | 1 | 2 | 1 | 0 | -1 | 0 |

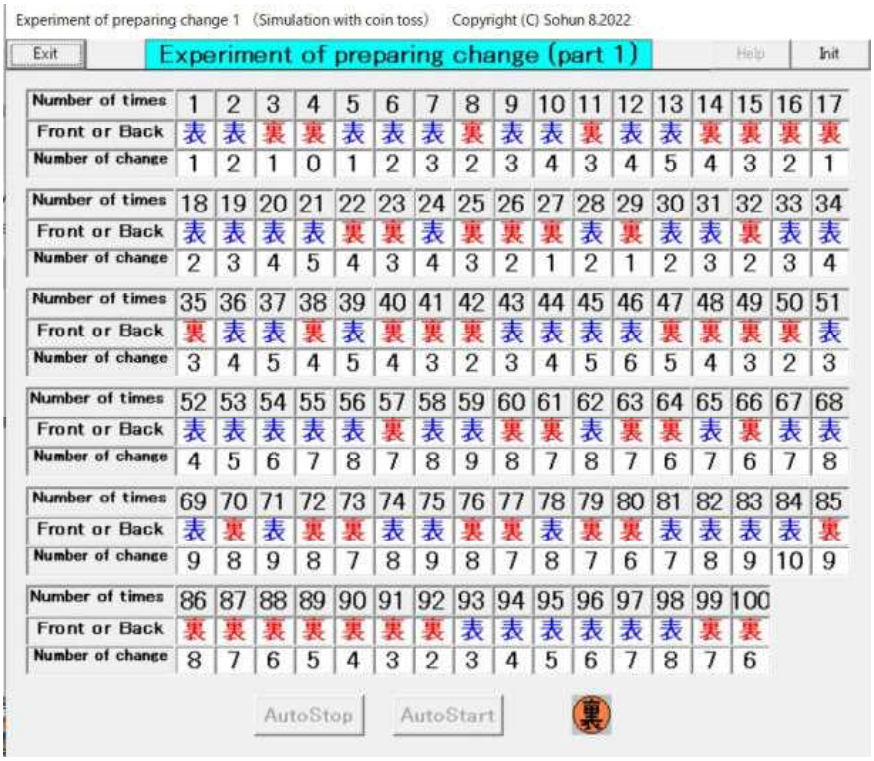
| Number of times | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 裏 | 表 | 表 | 裏 | 裏 | 表 | 表 | 表 | 表 | 裏 | 裏 | 表 | 裏 | 表 | 裏 | 表 | 表 |
| Number of change | -1 | 0 | 1 | 0 | -1 | 0 | 1 | 2 | 3 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 3 |

| Number of times | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 表 | 裏 | 表 | 裏 | 表 | 裏 | 表 | 表 | 裏 | 表 | 表 | 表 | 裏 | 表 | 表 | 裏 |
| Number of change | 4 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 6 | 5 | 6 | 7 | 8 | 7 | 8 | 9 | 8 |

| Number of times | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 裏 | 裏 | 表 | 裏 | 表 | 表 | 表 | 裏 | 裏 | 表 | 裏 | 表 | 表 | 裏 | 表 | 表 |
| Number of change | 9 | 8 | 7 | 8 | 7 | 8 | 9 | 10 | 9 | 8 | 9 | 8 | 9 | 10 | 9 | 10 | 11 |

| Number of times | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 表 | 表 | 表 | 裏 | 裏 | 裏 | 表 | 表 | 表 | 表 | 裏 | 裏 | 表 | 裏 |
| Number of change | 12 | 13 | 14 | 15 | 14 | 13 | 12 | 13 | 14 | 15 | 16 | 15 | 14 | 15 | 14 |

（ｄ） 4th experiment




| Number of times | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 表 | 裏 | 裏 | 表 | 表 | 表 | 裏 | 表 | 表 | 裏 | 表 | 表 | 裏 | 裏 | 裏 | 裏 |
| Number of change | 1 | 2 | 1 | 0 | 1 | 2 | 3 | 2 | 3 | 4 | 3 | 4 | 5 | 4 | 3 | 2 | 1 |

| Number of times | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 表 | 表 | 表 | 裏 | 裏 | 表 | 裏 | 裏 | 裏 | 表 | 裏 | 表 | 表 | 裏 | 表 | 表 |
| Number of change | 2 | 3 | 4 | 5 | 4 | 3 | 4 | 3 | 2 | 1 | 2 | 1 | 2 | 3 | 2 | 3 | 4 |

| Number of times | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 裏 | 表 | 表 | 裏 | 表 | 裏 | 裏 | 裏 | 表 | 表 | 表 | 表 | 裏 | 裏 | 裏 | 裏 | 表 |
| Number of change | 3 | 4 | 5 | 4 | 5 | 4 | 3 | 2 | 3 | 4 | 5 | 6 | 5 | 4 | 3 | 2 | 3 |

| Number of times | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 表 | 表 | 表 | 表 | 裏 | 表 | 表 | 裏 | 裏 | 表 | 裏 | 裏 | 表 | 裏 | 表 | 表 |
| Number of change | 4 | 5 | 6 | 7 | 8 | 7 | 8 | 9 | 8 | 7 | 8 | 7 | 6 | 7 | 6 | 7 | 8 |

| Number of times | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 表 | 裏 | 表 | 裏 | 裏 | 表 | 表 | 裏 | 裏 | 表 | 裏 | 裏 | 表 | 表 | 表 | 表 | 裏 |
| Number of change | 9 | 8 | 9 | 8 | 7 | 8 | 9 | 8 | 7 | 8 | 7 | 6 | 7 | 8 | 9 | 10 | 9 |

| Number of times | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Front or Back | 裏 | 裏 | 裏 | 裏 | 裏 | 裏 | 裏 | 表 | 表 | 表 | 表 | 表 | 表 | 裏 | 裏 |
| Number of change | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 7 | 6 |

# Modeling and Simulation Ⅰ

2.21.2024
Sohun

## 3 Experiment 2 of Preparing Change

（１）Experiment overview

Do you ever serve as the secretary of a class meeting , etc. ?
Think about it as if you were the secretary.
Let's assume that the number of participants in the class meeting is 35 and the membership fee is 3,500 yen.
Let's also assume that there are only two types of paticipants : those who need change for four 1,000 yen bills , and those who don't need change for three 1,000 yen bills and one 500 yen coin.
Membership fees will be collected from those who arrive at the venue , and those who need change will be given 500 yen in change on the spot.
However , based on experience , the ratio of people who need change and people who don't need change is 50/50.
Now , as the secretary , how many 500 yen coins should you have on hand for changes ?

（２）Experimental result（VB version simulation）

【Experiment day】
February 21 . 2024
【PC used】
Lavie NX850/N
【Software used】
Self-made software
『preparing change 26』
【Concept of experiment】
The ratio of people who need change and people who don't need change is 50/50 , so if you toss a coin , if it comes up heads , you think that someone who don't need change has arrived , and if it comes up tails , you think that someone who need change has arrived.
In other words , if a head rolls up , three 1,000 yen bills and a 500 yen coin will be paid , so the secretary will have one more 500 yen coin in hand.
Also , if tails come up , four 1,000 yen bills will be paid , so change will be required , and the secretary will have one less 500 yen coin.
【Method of operation】
By specifying the number of customers（the number of participants in the class meeting） and the number of experiments , the relationship between the number of missing coins（the number of 500 yen coins prepared by the secretary） and the number of experiments is displayed in a frequency distribution table.
In the windows for setting the number of customers and the number of experiments , enter an integer and click the［OK］ button.
［Experiment Start］: Click the button to display the frequency distribution table.
［Init］: Click the button to clear the frequency distribution table and start the experiment again from the biginning.
【Consideration】
The first experiment was conducted 10 times with 35 participants , and the maximum number of 500 yen coins missing was 14 , and the average number of 500 yen coins missing was 3.1.
The second experiment was conducted 100 times with 35 participants , and the maximum number of 500 yen coins missing was 15 , and the average number of 500 yen coins missing was 4.6.
The third experiment was conducted 1,000 times with 35 participants , and the maximum number of 500 yen coins missing was 16 , and the average number of 500 yen coins missing was 4.2.
The fourth experiment was conducted 10,000 times with 35 participants , and the maximum number of 500 yen coins missing was 19 , and the average number of 500 yen coins missing was 4.1.
Therefore , if you have nineteen 500 yen coins in change for a class meeting with 35 participants , you will never run out.

# Modeling and Simulation Ⅰ

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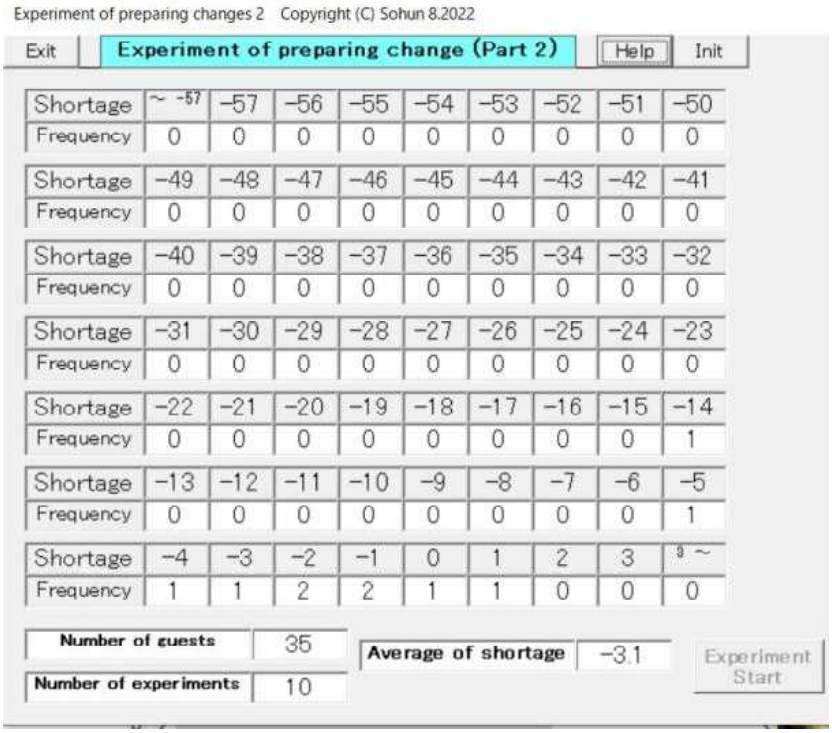
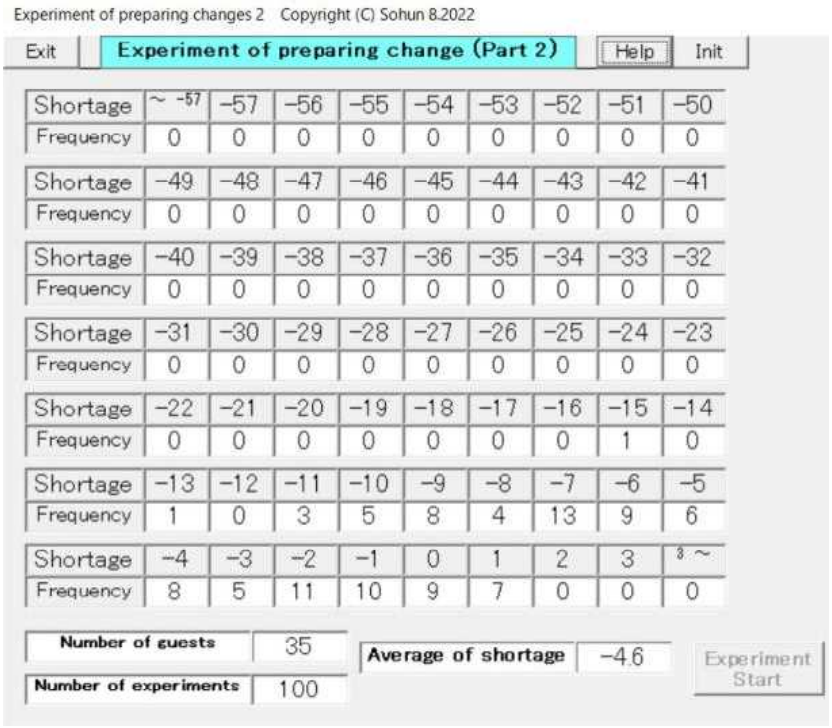
## 3 Experiment 2 of Preparing Change

（２）Experimental result（VB version simulation）

（ａ） 1st experiment




（ｂ） 2nd experiment



# Modeling and Simulation Ⅰ

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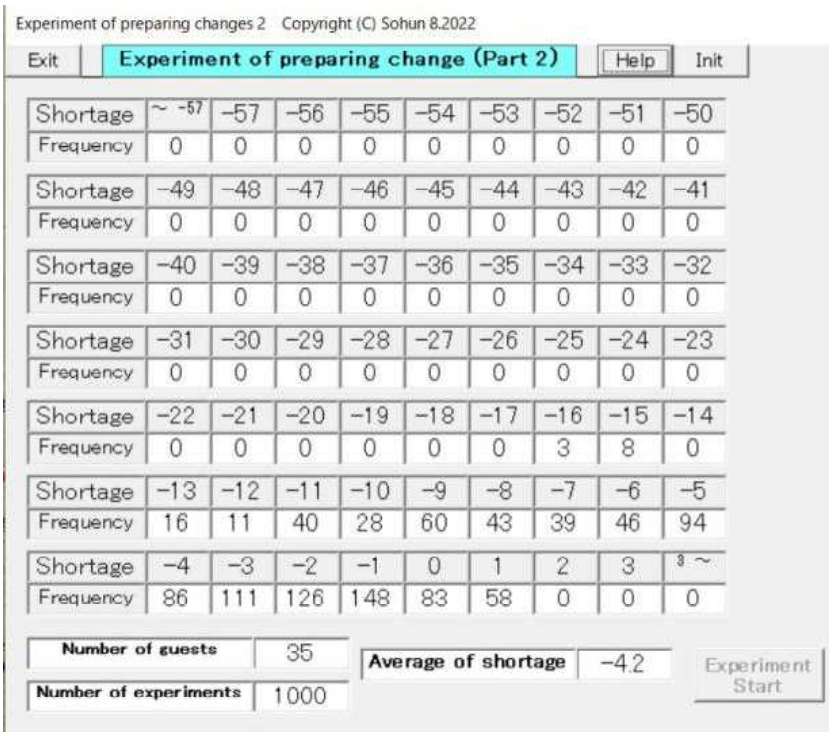
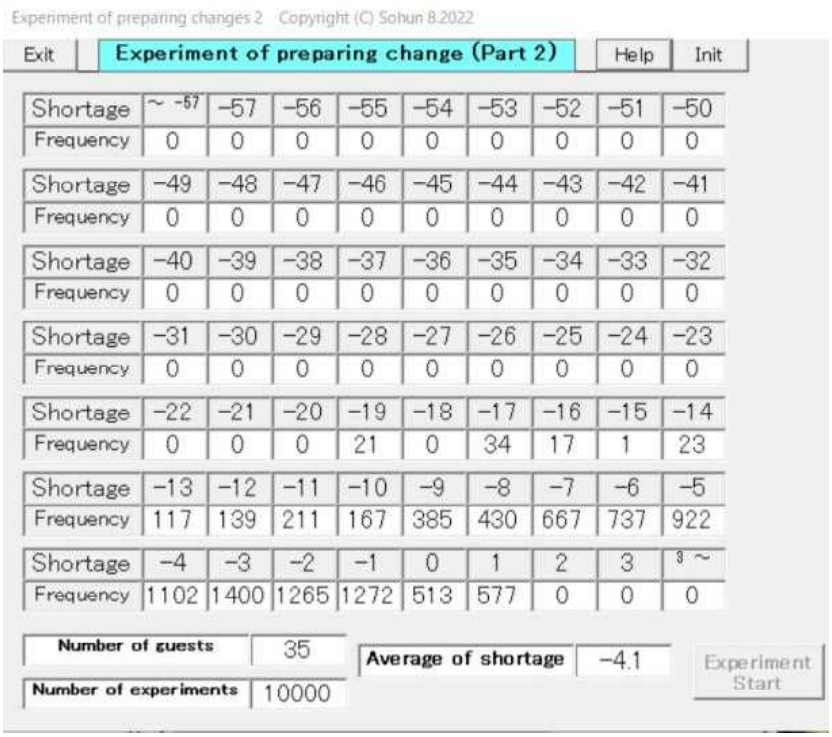
## 3 Experiment 2 of Preparing Change

（２）Experimental result（VB version simulation）

（ｃ）3rd experiment




（ｄ）4th experiment



# Modeling and Simulation Ⅰ

2.21.2024
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## 4 Experiment 3 of Preparing Change

（１） Experiment overview

Do you ever serve as the secretary of a class meeting , etc. ?
Think about it as if you were the secretary.
Let's assume that the number of participants in the class meeting is 35 and the membership fee is 3,500 yen.
Let's also assume that there are only two types of paticipants : those who need change for four 1,000 yen bills , and those who don't need change for three 1,000 yen bills and one 500 yen coin.
Membership fees will be collected from those who arrive at the venue , and those who need change will be given 500 yen in change on the spot.
However , based on experience , the ratio of people who need change and people who don't need change is 50/50.
Now , as the secretary , how many 500 yen coins should you have on hand for changes ?

（２） Experimental result（VB version simulation）

【Experiment day】
February 21 . 2024
【PC used】
Lavie NX850/N
【Software used】
Self-made software
『preparing change 36』
【Concept of experiment】
The ratio of people who need change and people who don't need change is 50/50 , so if you toss a coin , if it comes up heads , you think that someone who don't need change has arrived , and if it comes up tails , you think that someone who need change has arrived.
In other words , if a head rolls up , three 1,000 yen bills and a 500 yen coin will be paid , so the secretary will have one more 500 yen coin in hand.
Also , if tails come up , four 1,000 yen bills will be paid , so change will be required , and the secretary will have one less 500 yen coin.
【Metod of operation】
By specifying the number of customers（the number of participants in the class meeting） and the number of experiments , the relationship between the number of missing coins（the number of 500 yen coins prepared by the secretary） and the number of experiments is displayed in a frequency distribution graph.
In the windows for setting the number of customers and the number of experiments , enter an integer and click the［OK］ button.
［Start］: Click the button to display the frequency distribution graph.
［Init］: Click the button to clear the frequency distribution graph and start the experiment again from the biginning.
【Consideration】
The first experiment was conducted 100 times with 35 participants , and the maxim number of 500 yen coins missing was less 15 , and the the averrage number of 500 yen coins missing was 4.9.
The second experiment was conducted 500 times with 35 participants , and the maxim number of 500 yen coins missing was less 15 , and the the averrage number of 500 yen coins missing was 4.1.
The third experiment was conducted 750 times with 35 participants , and the maxim number of 500 yen coins missing was less 18 , and the the averrage number of 500 yen coins missing was 4.2.
The fourth experiment was conducted 1000 times with 35 participants , and the maxim number of 500 yen coins missing was less 18 , and the the averrage number of 500 yen coins missing was 4.2.
Therefore , if you have eighteen 500 yen coins in changes for a class meeting with 35 participants , you will never run out.

# Modeling and Simulation Ⅰ

2.21.2024
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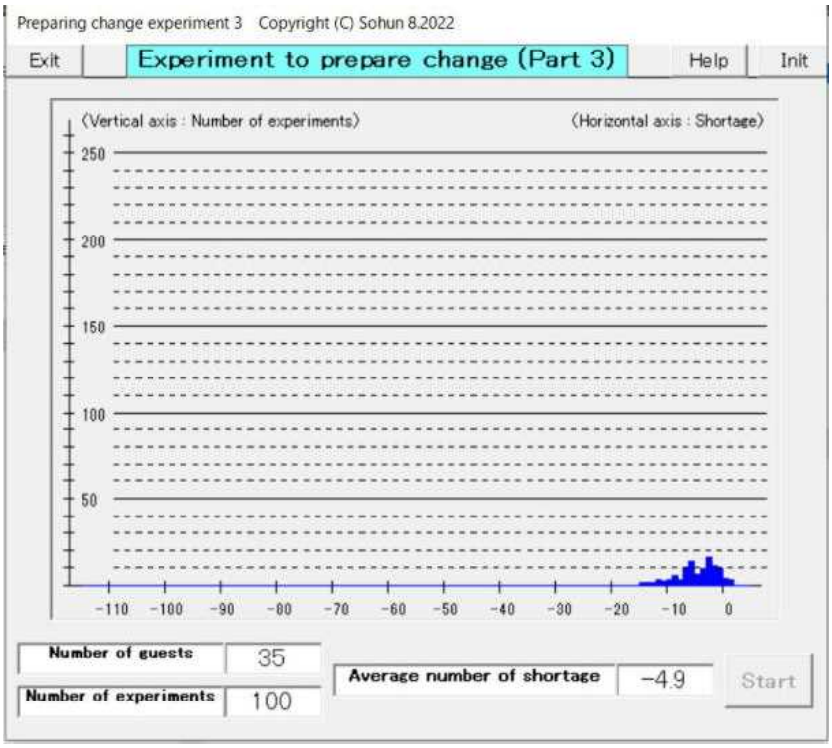
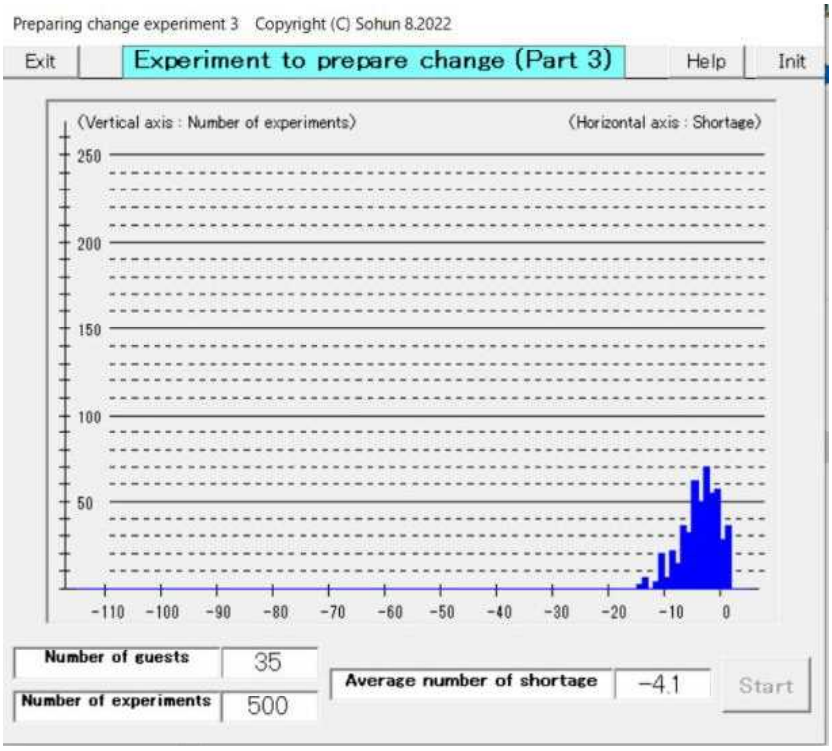
## 4 Experiment 3 of Preparing Change

（２）Experimental result（VB version simulation）

（ａ） 1st experiment




（ｂ） 2nd experiment



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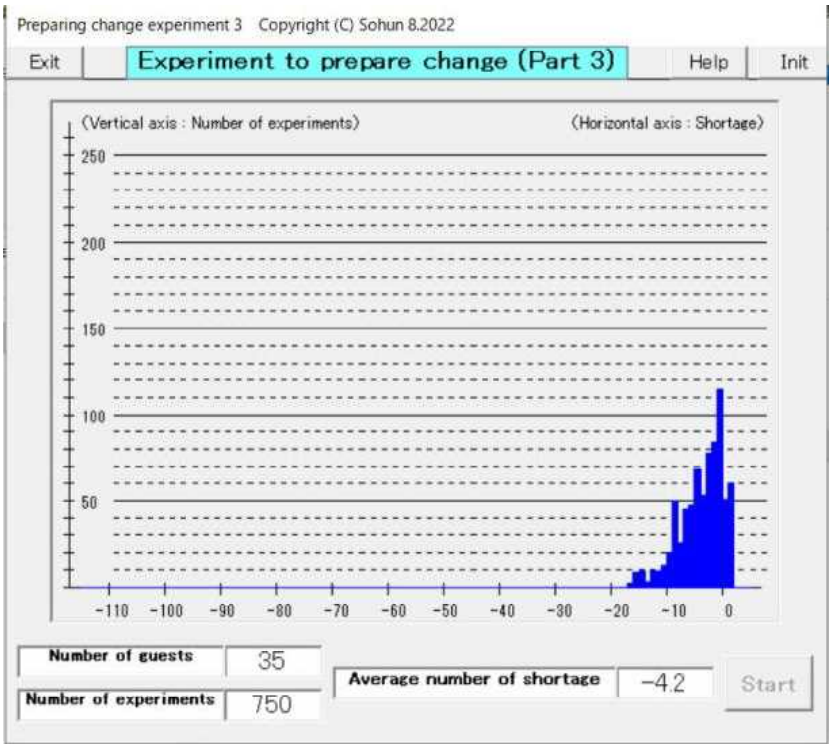
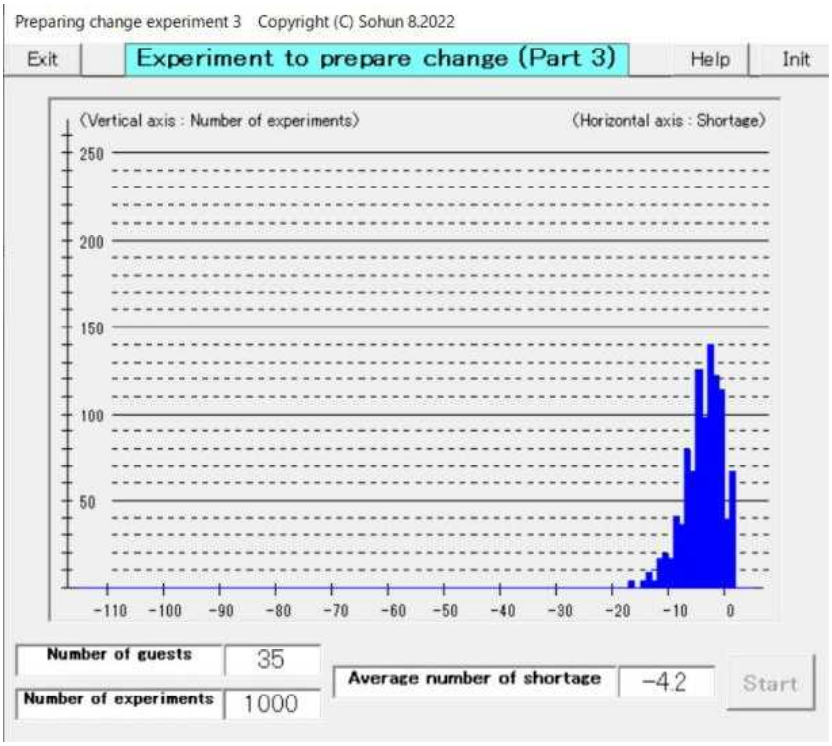
## 4 Experiment 3 of Preparing Change

（２）Experimental result（VB version simulation）

（ｃ）3rd experiment




（ｄ）4th experiment



# Modeling and Simulation Ⅰ

2.22.2024
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## 5 Encounter Experiment

（１）Experiment overview

Dr. Boro also occasionally dates women. However , the other day , the meeting place was crowded and it was getting dark , so it took her an hour to find the doctor , and a big fight broke out. In fact , Dr. Boro , who is quite nesighted and has astigmatism , thought it was better to stay still rather than wander around looking for something. That's why the doctor didn't move in a certain area within the designated area , saying "Wait here" , but she didn't like that. She argues that they should be able to find each other faster if they both move around looking for each other. The basis for this is that if neither of them moves , they will never be able to find the other person. Of course , Dr. Boro believes that he is absolutely correct mathematically as the saying goes , "if you are lost in the mountains , don't move an inch and wait for help." However , his confidence was shaken a little by her anger. Which side will you take ? Also , why is that ?

（２）Experimental result（VB version simulation）

【Experiment day】

February 22 . 2024

【PC used】

Lavie NX850/N

【Software used】

Self-made software

『experiment of encounter 6』

【Concept of experiment】

I am simulating the doctor as Momotaro and her as the dog.

［When two start］ When you click the button , Momotaro and the dog will move around randomly. It represents both the Doctor and her searching around. Count the number of times they met in 3 minutes.

［When one starts］ When you click the button , only the the dog will move around randomly. This shows that the doctor doesn't move and only she moves and searchs around. Count the number of times they met in 3 minutes.

The more times they meet each other , the easier it will be to meet each other and find them.

【Method of operation】

Click the［When two start］ button and enter the initial positions of Momotaro and the dog. Click the［Start］ button and watch both Momotaro and the dog move around.

Click the［When one starts］ button and enter the initial positions of Momotaro and the dog. Click the［Start］ button and watch only the dog moves around.

【Consideration】

In experiments ① to ③ , the starting positions are Momotaro（4,4） and the dog（6,4）. Both Momotaro and the dog moved around. The number of encounters was 27 in total.

In experiments ④ to ⑥ , the starting positions are Momotaro（4,4） and the dog（6,4）. Only the dog moved around. The number of encounters was 19 in total.

In experiments ⑦ to ⑨ , the starting positions are Momotaro（2,2） and the dog（8,8）. Both Momotaro and the dog moved around. The number of encounters was 14 in total.

In experiments ⑩ to ⑫ , the starting positions are Momotaro（2,2） and the dog（8,8）. Only the dog moved around. The number of encounters was 10 in total.

Therefore , if both Momotaro and the dog move around , it is easier for them to meet each other than if only the dog movees around.

# Modeling and Simulation Ⅰ

2.22.2024
Sohun

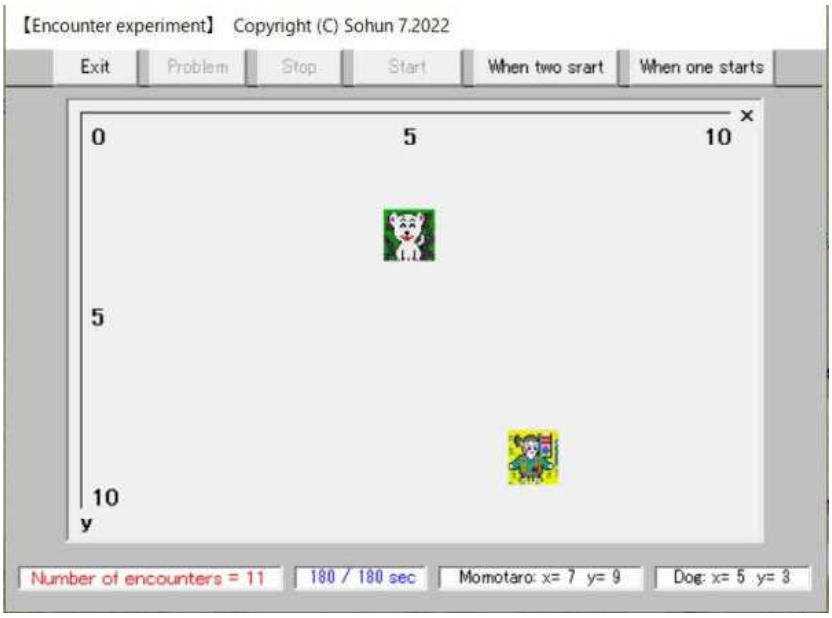
## 5 Encounter Experiment

（２） Experimental result（VB version simulation）

① 1st experiment
When 2 people move

Starting position
Momotaro (4,4)
Dog (6,4)

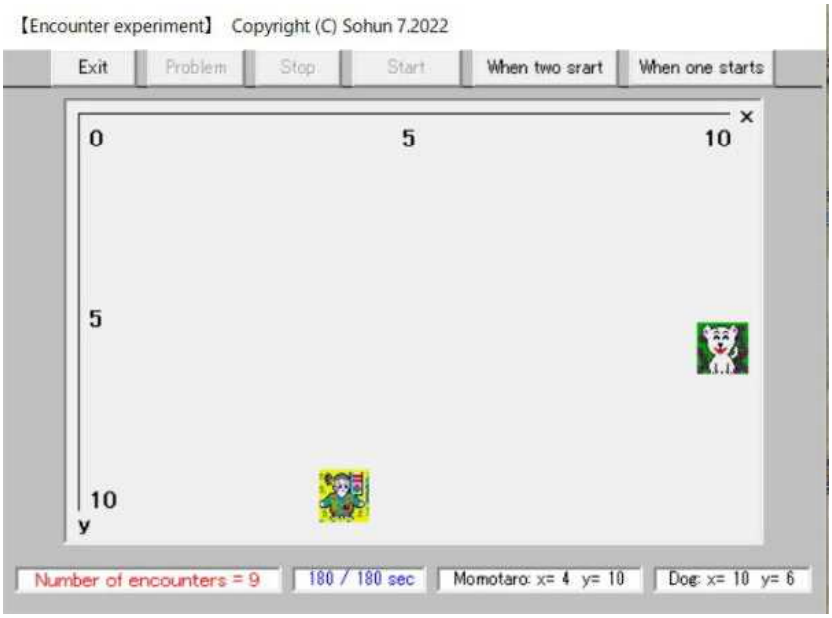
**Number of encounter=11**




② 2nd experiment
When 2 people move

Starting position
Momotaro (4,4)
Dog (6,4)

**Number of encounter=9**



# Modeling and Simulation Ⅰ

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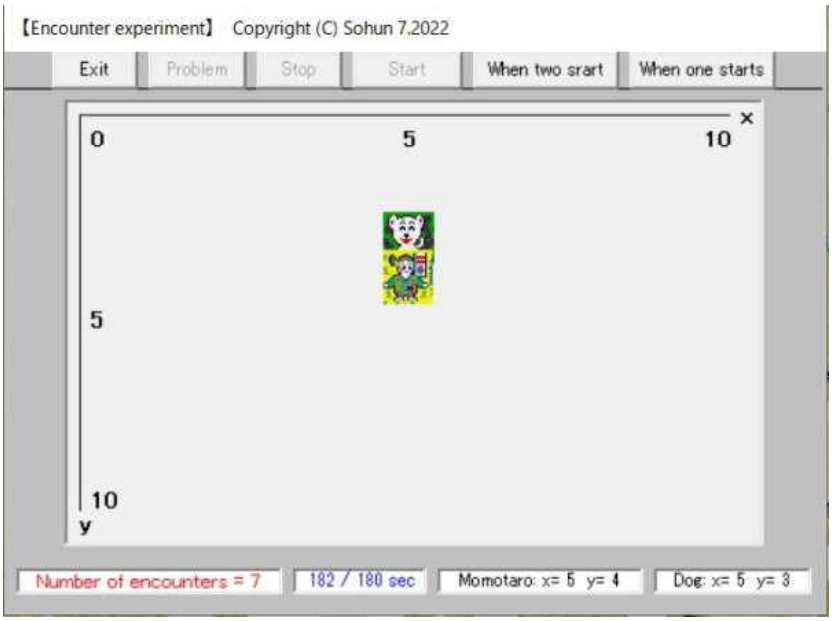
## 5 Encounter Experiment

（２） Experimental result（VB version simulation）

③ 3rd experiment
When 2 people move

Starting position
Momotaro (4,4)
Dog (6,4)

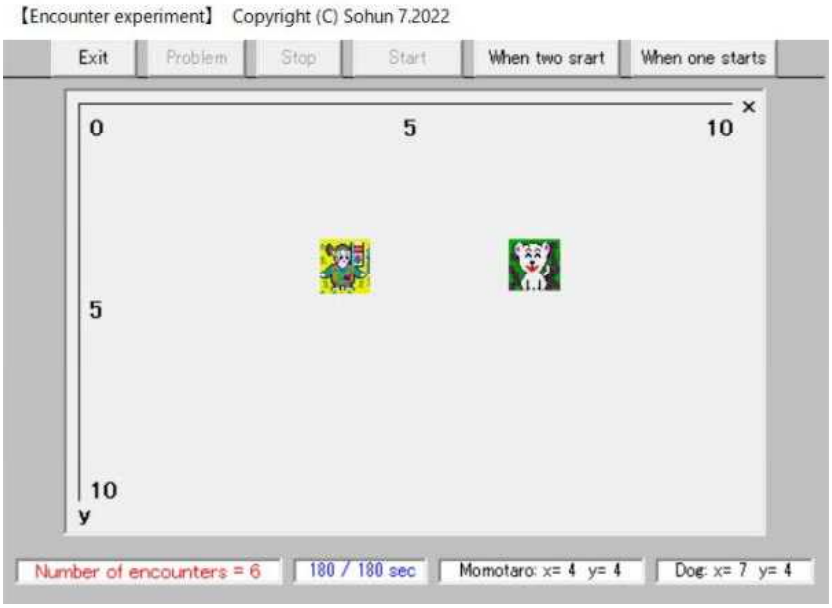
**Number of encounter=7**




④ 4th experiment
When 1 person moves

Starting position
Momotaro (4,4)
Dog (6,4)

**Number of encounter=6**



# Modeling and Simulation Ⅰ

2.22.2024
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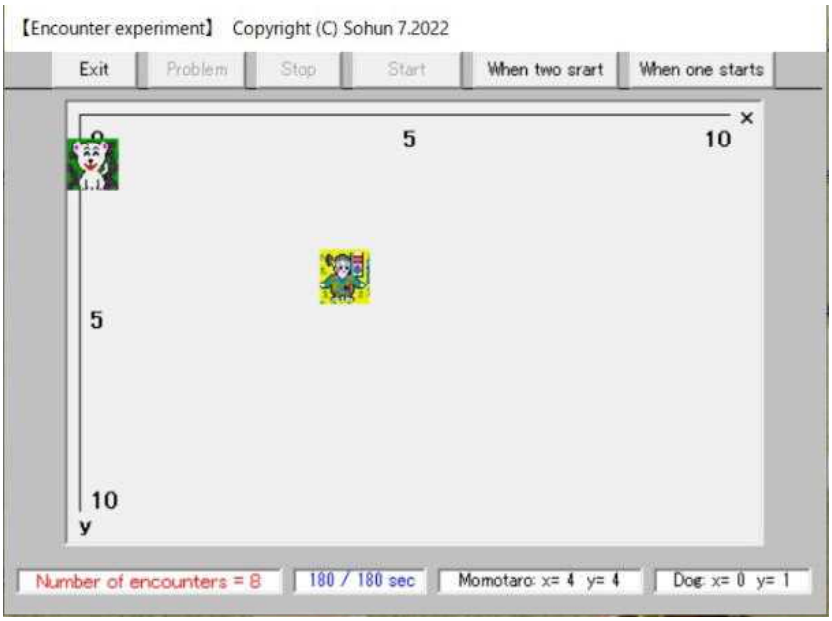
## 5 Encounter Experiment

（２） Experimental result（VB version simulation）

⑤ 5th experiment
When 1 person moves

Starting position
Momotaro (4,4)
Dog (6,4)

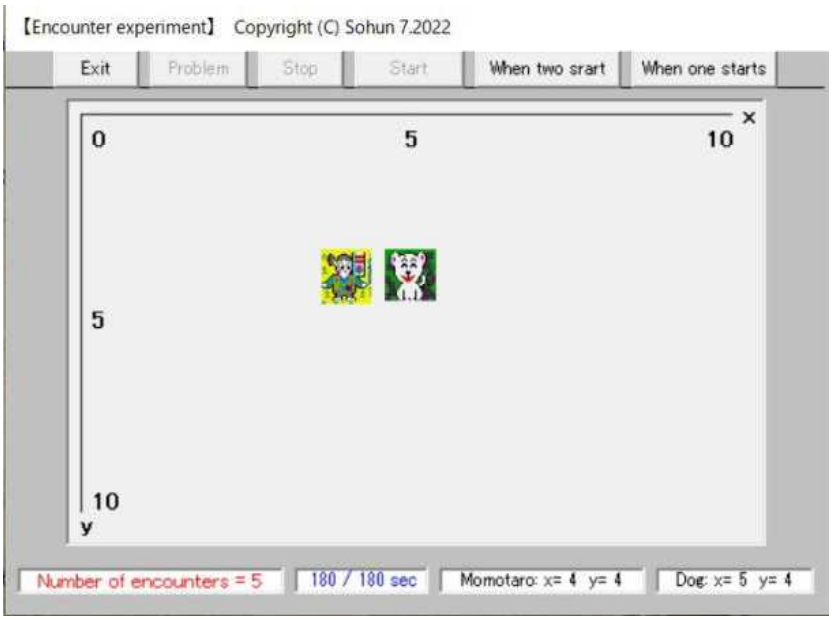
**Number of encounter=8**




⑥ 6th experiment
When 1 person moves

Starting position
Momotaro (4,4)
Dog (6,4)

**Number of encounter=5**



# Modeling and Simulation Ⅰ

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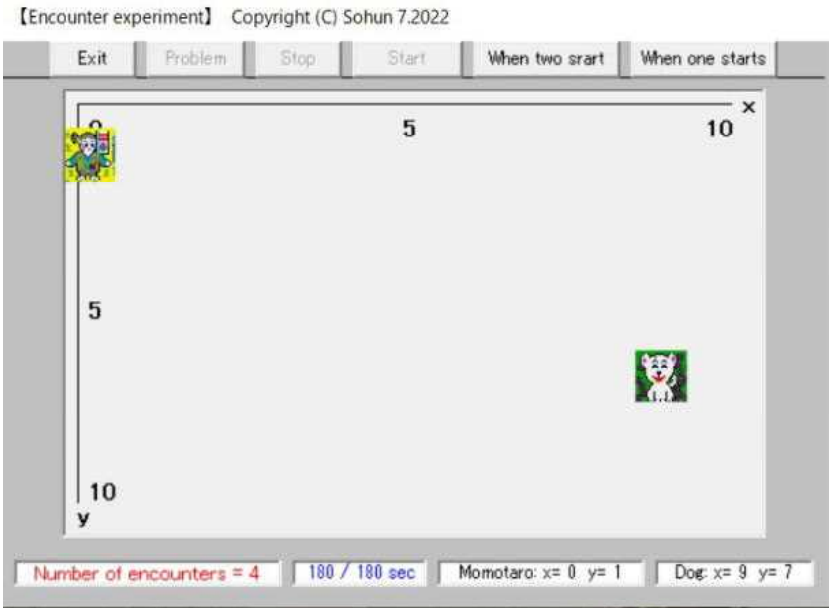
## 5 Encounter Experiment

（２） Experimental result（VB version simulation）

⑦ 7th experiment
When 2 people move

Starting position
Momotaro (2,2)
Dog (8,8)

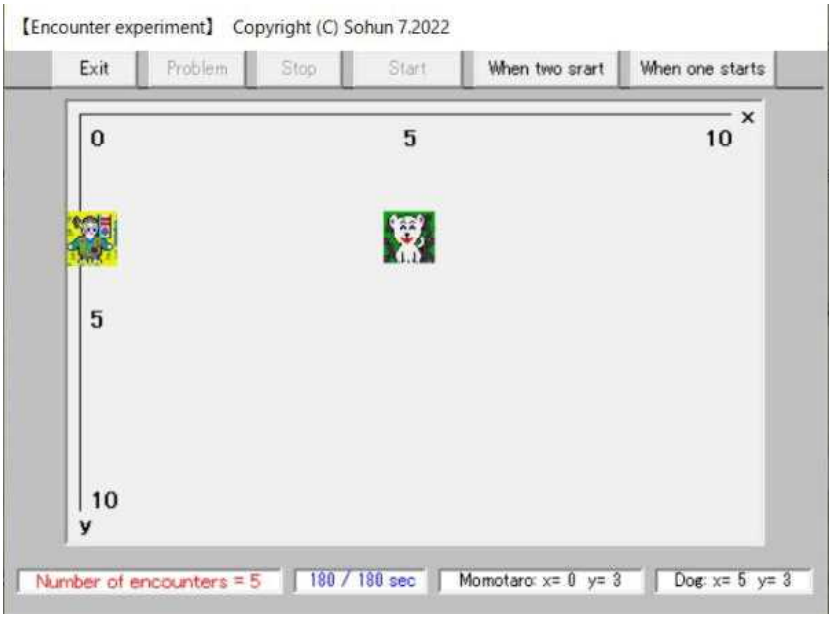
**Number of encounter=4**




⑧ 8th experiment
When 2 people move

Starting position
Momotaro (2,2)
Dog (8,8)

**Number of encounter=5**



# Modeling and Simulation Ⅰ

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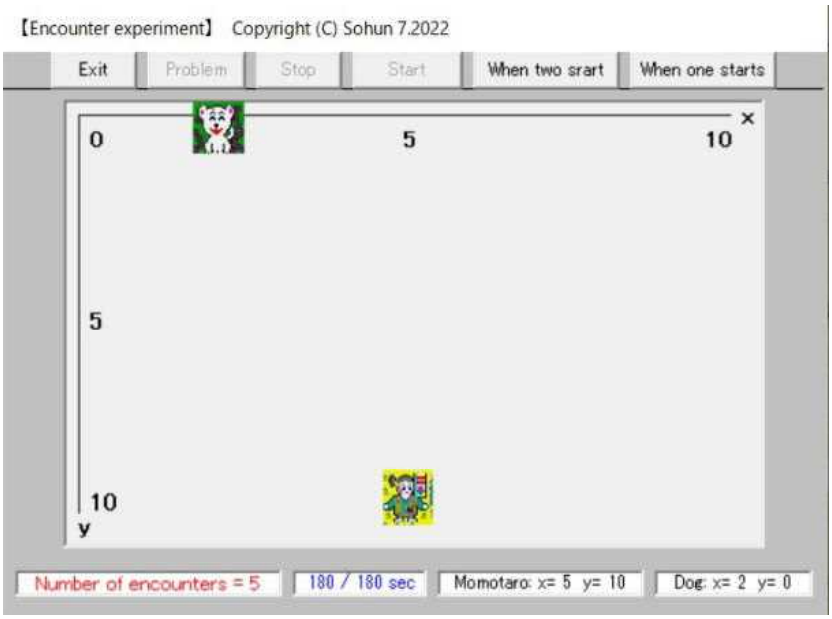
## 5 Encounter Experiment

（２） Experimental result（VB version simulation）

⑨ 9th experiment
When 2 people move

Starting position
Momotaro (2,2)
Dog (8,8)

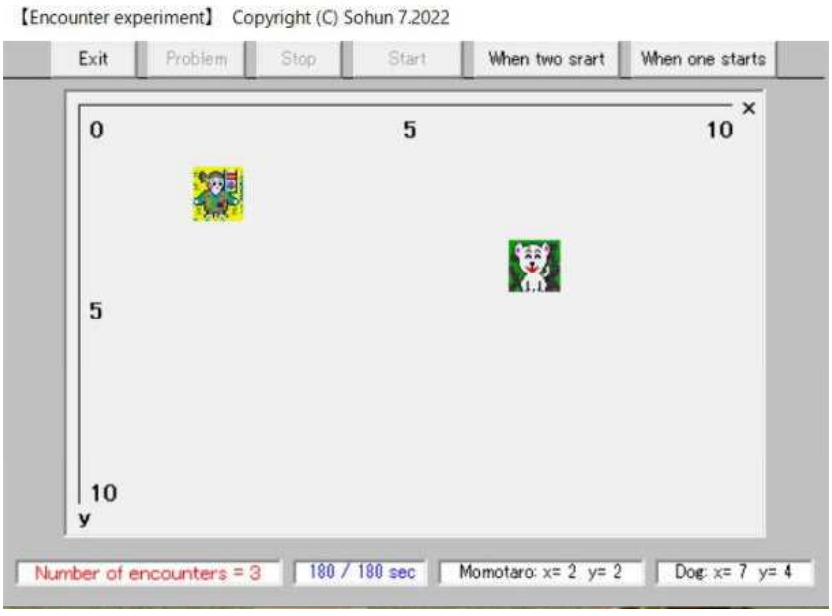
**Number of encounter=5**




⑩ 10th experiment
When 1 person moves

Starting position
Momotaro (2,2)
Dog (8,8)

**Number of encounter=3**



# Modeling and Simulation Ⅰ

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## 5 Encounter Experiment

（２） Experimental result（VB version simulation）

⑪ 11th experiment
When 1 person moves

Starting position
Momotaro (2,2)
Dog (8,8)

**Number of encounter=5**


⑫ 12th experiment
When 1 person moves

Starting position
Momotaro (2,2)
Dog (8,8)

**Number of encounter=2**