Appendix

Instructions

This is an experiment in the economics of decision making. The instructions are simple, and if you follow them carefully and make good decisions you might earn a considerable amount of money which will be paid to you in cash at the end of the experiment. In this experiment we are going to simulate an allocation of students to schools. The procedure, payment rules, and student allocation method will be described in detail below. Please do not communicate with each other during the experiment. If you have any questions, raise your hand and the experimenter will come and help you.

***NOTE* you are welcome to use the provided scratch paper.**

Procedure

- The payment you receive will depend on the school you are allocated.
- There are four schools. Each one holds a different value to you. This will be given on your computer screen.
- You are in a group of four which includes three computers and yourself.
- In this simulated environment the computers have their own set of school values. They may or may not differ from yours.
- Your "local school" and those of the computer players will be indicated on your computer screen. A participants' local school is the one located in the district in which they live.
- After you have submitted your decision to the "Centralized authority" the computer will determine the student allocation by the following Student Allocation Method.
  ***NOTE* all schools A to D have to be included in the ranking.**
- You will have 10 minutes for the student allocation task. You may complete it at your own pace.

In this experiment there is a specific school environment in which you will take part. The details will be shown on your screen.

Each participant is first tentatively assigned to the school within her respective district. Next, Decision Sheet rankings, which are submitted to the "centralized authority," are used to determine mutually beneficial exchanges between two or more participants. The order in which these exchanges are considered is determined by a fair lottery. This means each participant has an equal chance of being the first in line, the second in line, … , as well as the last in line. The lottery will be run by computer, and no one will know the outcome of it prior to making the decision.

The specific allocation process is explained below.

1. Initially all slots are available for allocation.
2. Each student sends a Rank-list of schools to centralized allocation office, which uses the following mechanism to determine the final allocation:

- All participants are ordered in a queue based on the order in the lottery.
- Next, the participant at the top of the queue applies to the school of his top choice, based on her ranking list.
  i. If the application is submitted to her district school, then her tentative assignment is finalized (thus she is assigned a slot at her district school). The participant and her assignment are removed from subsequent allocations. The process continues with the next participant in line.
  ii. If the application is submitted to another school, the procedure moves as follows:

  Say applicant Claudia's home district school is school A and she is applying to school B. Then Claudia's application is submitted to school B. After that, one of the students who tentatively holds the slot at school B has to be chosen. In particular, among all these students, we choose the student who is the first in the queue. (So we follow the queue ordering while choosing among students of school B.) Then this student is moved to the top of the queue directly in front of the requester (Claudia).
- Whenever the queue is modified, the process continues similarly: An application is submitted to the highest ranked school with available slots for the participant at the top of the queue.
  i. If the application is submitted to her district school, then her tentative assignment is finalized. The process continues with the next participant in line.
  ii. If the application is submitted to another school, say school *S,* then we follow the procedure explained in example with Claudia: the first participant in the queue who tentatively holds a slot at school *S* is moved to the top of the queue directly in front of the requester.

3. A mutually-beneficial exchange is obtained when a cycle of applications are made in sequence, which benefits all affected participants, e.g., I apply to Stefan's district school, Stefan applies to your district school, and you apply to my district school. In this case, the exchange is completed and the participants as well as their assignments are removed from subsequent allocations. This way, each participant is guaranteed an assignment which is at least as good as her district school based on the preferences indicated in her Rank list.
4. The process continues until all participants are assigned a school slot.

Example

In order to understand the mechanism better, let us go through a simple example together:

If you have any questions about any step of the allocation procedure please feel free to ask at any point.

There are six students (ID numbers from 1 to 6) on the market, and three schools (school A, school B, and school C) with two free slots each. Students 1 and 2 live in the district of school A, students 3 and 4 live in school district B, and, finally, student 5 and 6 live in school district C.

It means that the tentative assignments look as follows:

Tentative assignments of students (IDs)	School A	School B	School C
slot 1	1	3	5
slot 2	2	4	6

Students submitted the following school rankings in their decision sheets:

Student ID	1	2	3	4	5	6
Top choice	B	C	A	C	C	A
Middle choice	A	A	C	B	A	B
Last choice	C	B	B	A	B	C

The lottery determined the following order (student IDs): 1-2-3-4-5-6

This allocation method consists of the following steps:

Step 1. The queue looks as follows: 1-2-3-4-5-6 (the initial queue order is always determined by the lottery). Thus student 1 (the first in the order) applies to school B (her top choice). It is not her district school. The first student in the queue who tentatively holds the slot in school B is student 3. And thus the queue is modified.

Step 2. The queue looks as follows: 3-1-2-4-5-6. Thus student 3 applies to school A. This school is not her district school, but the cycle of beneficial exchange appears. Student 3 wants to attend student 1's district school, and at the same time student 1 wants to attend student 3's district school. The beneficial exchange is obtained. Allocations of students 1 and 3 are finalized and they are excluded from the queue, and also 1 slot in school A and 1 slot at school B are excluded from the allocation process.

Finalized assignments	Sc hool A	Sc hool B	Sc hool C
slot 1	3	1	-
slot 2	-	-	-

Step 3. The queue looks as follows: 2-4-5-6. Student 2 applies to school C. It is not the school of her district. The first student who tentatively holds a slot in school C is student 5. And thus the queue is modified.

Step 4. The queue looks as follows: 5-2-4-6. Student 5 applies to school C. It is her district school. Thus student 5 is assigned to school 5. Her allocation is finalized and she is excluded from the queue as well as the slot in school C.

Finalized assignments	School A	School B	School C
slot 1	3	1	5
slot 2	-	-	-

Step 5. The queue looks as follows: 2-4-6. Student 2 applies to school C again. It is not the school of her district. The first student who tentatively holds a slot in school C is now student 6. Thus the queue is modified.

Step 6. The queue looks as follows: 6-2-4. Student 6 applies to school A. This school is not her district school but the cycle of beneficial exchange appears. Student 6 wants to attend student 2's district school, and at the same time student 2 wants to go to student 6's school. The beneficial exchange is obtained. Allocations of students 2 and 6 are finalized and they are excluded from the queue, and also 1 slot in school A and school C is excluded from the allocation process.

Finalized assignments	School A	School B	School C
slot 1	3	1	5
slot 2	6	-	2

Step 7. There is only one student in the queue – student 4. She wants to apply to school C but there are no more free slots there, so she applies to her second choice – school B. It is her district school and she is assigned to the slot in school B.

Thus the final allocation of students looks as follows:

Finalized assignments	School A	School B	School C
slot 1	3	1	5
slot 2	6	4	2

End of instructions.

Mechanism related quiz:

Mechanism understanding

In order to check the level of understanding of the allocation procedure we ask you to find out the allocation of the student for the following market:

You will earn 2Eur for a correct answer.

There are six students (ID numbers from 1 to 6) on the market, and three schools (school A, school B and school C) with two free slots each. Students 2 and 3 live in the district of school A, students 4 and 5 live in the district of school B and, finally, students 1 and 6 live in the district of school C.

This means that the tentative assignment looks as follows:

Tentative assignments	School A	School B	School C
	2	4	1
	3	5	6

The lottery determined the following order (student IDs): 5-6-2-1-3-4

The students submitted their school preferences. These are given on the "Quiz –mechanism understanding" page on your computer screen.

You have 10 minutes to correctly determine the final allocation. If you have any questions raise your hand and we will come to you. However, the experimenter will not assist you with the task.

Please choose a correct answer to the multiple choice questions about mechanism. You will earn 50 cents for each correct answer.

MC:

1. The allocation procedure is constructed in a way to guarantee students an assignment which is at least as good as their home school, according the ranking list, which is submitted to the authority: True or False?
2. Which of the following statements about the mechanism are correct:
    a. Before choosing what to submit as a ranking list, students should be careful not to apply to the most popular school
    b. Knowing the preferences and ranking lists of others is crucial when choosing your own ranking list
    c. The mechanism is constructed in such a way that the ranking list should always coincide with your true preferences.
    d. You should only state your true preferences if you are certain that everybody will state their true preferences.

CRT

- A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?
- If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?
- In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

Risk-aversion related task instructions

Risk aversion measure (Bomb risk task. Crosseto Fillipin, 2013)
On the next screen you will see a field composed of 100 (10*10) numbered boxes.
You can earn 5 cents for every box that is collected. Every half of a second a box is collected starting from the top-left corner. Once collected, the box disappears from the screen, and your potential earnings are updated accordingly. At any moment you can see the amount earned up to that point.
Such earnings are only potential, however, because behind **one** of these boxes a time bomb is hidden that will destroy everything that has been collected.
You do not know where the time bomb is. You only know that it can be in any place with an equal probability. Moreover, even if you collect the bomb, you will not know until the end of the experiment.
Your task is to choose when to stop the collecting process. You can do so by hitting 'Stop' at any time.
At the end of the experiment, the computer will randomly determine the number of the box containing the time bomb.
If you happen to have collected the box in which the time bomb is located, you will earn zero. If the time bomb is located in a box that you did not collect, you will earn the amount of money accumulated before hitting 'Stop.'
Please process to the next screen to start the exercise.