

Running A Laboratory Experiment at LUSEM

A Guide

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Disclaimer

I have written this document after running some experimental sessions at LUSEM in 2015, and realizing that there was a lot of information that I would not have found if not for discussions with a colleague who ran sessions the previous semester. When another colleague needed to run sessions after that and had the same questions as I had, I concluded that it would be efficient to have all the information compiled in one document, which can perhaps eventually evolve into some sort of wiki that gets updated as circumstances at LUSEM change.

This guide is based on my own experience and discussions with other colleagues at NEK. Personal advice is italicized. Of course, each experimenter will have their own best practice, which will be affected by the labs they have had access to. I hope nevertheless this will be useful for others who plan to run experiments at LUSEM in the future.

Margaret Samahita
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Instructions for contributors

This guide is intended to be an evolving document that experimental economists at NEK can both read and contribute to. In order to maintain some sort of structure, please observe the brief guidelines below:

- Feel free to add general information as well as your own personal opinion/advice throughout the document, please distinguish between the two by italicizing personal opinion/advice. Contributions in the “Troubleshooting and other problem solvers” section are especially welcome.
- Feel free to add your name to personal opinion/advice, the author list on the title page, and subsequently your own disclaimer if you like.
- The formatting has been kept simple to encourage contribution. The only thing asked is that if you add a new heading or sub-heading, please format them as such. You can do this by highlighting the text, going to “Format > Paragraph styles > Heading 1 > Apply ‘Heading 1’” for a new heading, or Heading 2 for a new sub-heading. Then refresh the Table of Contents by right-clicking on the next page and selecting “Update table of contents”.

Table of Contents

[Table of Contents](#)

[Recruitment](#)

[Contacting students](#)

[Registration](#)

[Attendance management](#)

[On the session day](#)

[Setting up the lab](#)

[Room set up](#)

[Computer set up](#)

[Checking in students](#)

[Starting the treatment](#)

[Ending the treatment](#)

[Payment](#)

[Packing up](#)

[Checklist](#)

[Troubleshooting and other problem solvers](#)

[Appendix](#)

[Invitation Email](#)

[Door Sign](#)

[Payment Form](#)

[Cash Receipt](#)

Recruitment

Before you go any further, make sure you book session times in the lab, EC3:206, since many courses need computer exercises and slots can fill up quickly.

In the long run, it could be a worthy investment to install ORSEE (Greiner, 2015) on the computer system. Then, we would only need to contact students once to get them signed up to the system (which can be done eg when they start their first semester at LUSEM), after which they can see what experiments are available and choose which they would like to participate in.

Contacting students

One can of course use more traditional methods to reach students, such as asking the study administrator at each department to send an email invitation to all students or post an announcement on Live@Lund, speaking in front of the large Bachelor level classes, or putting up posters all over the school.

A very effective way of contacting students is asking the study administrator at NEK to (temporarily) make you an administrator on all NEK courses on Live@Lund, thereby allowing you to download the student email list for all courses. This means that you can send the emails directly to the students when you want to, including reminder emails, and can exclude students who have already signed up from the recipient list of reminder emails.

I found that sending repeated reminders, though possibly annoying, is the most effective way of getting students to register. (Margaret)

So what to include in the invitation?

- some words about why they should participate: it is fun and interesting, they help scientific research, and they get money

- when, where, how long each session is (make sure you are clear about whether they should come at quarter past or exactly on the hour. Quarter past might be preferred to give you time to set up the lab in case there was a class right before.)

- how much money they can expect to get

- how to register

- some words about the importance of attending the session they register for, and to let you know if they cannot come so a replacement may be found.

A sample invitation is included in the Appendix.

Registration

One simple method is to use Doodle.com for registration. Simply create a poll with all the scheduled sessions, and make sure that:

- each student can only sign up for one session
- each session has a maximum allowed number of participants
- students are prompted to enter their email address when clicking “save” - this is a premium feature, but Doodle Premium is free for the first 30 days.

If a student accidentally typed in the wrong email address on Doodle, you can contact them directly by searching for the student’s name in Outlook Address Book.

You can always download the participants list to an excel file, which could be helpful to eg check students’ attendance on the day, creating a database of payments, etc.

Attendance management

Once they register, as soon as possible send a confirmation email. The day before the session, send a reminder email, again asking them to let you know if they can no longer come.

If students inform you they can no longer participate, try to reschedule them to a future session.

I experimented with a wait list. In practice, you could let more students sign up to a session than the room’s capacity, with the extra students being put on a wait list. These students are informed that they will only get to participate if a student on the main list does not show up. The advantage for them is that, in case all other sessions are full or that is the only session they can come to, there is still a positive chance they get to participate, but of course the disadvantage is that they might decide it is not worth their effort to come (which was the case in my experiment), or if they come, they do not end up participating anyway. However, almost always there is a main list participant that does not show up. If this becomes sufficiently common knowledge amongst participants, the wait list system can work very well (as eg at NYU). (Margaret)

On the session day

Setting up the lab

As soon as you come to the lab, it could be good to put up a note on the door saying “Please wait and have your ID ready. We will check you in at quarter past.”, so subjects will not knock on the door and asked to be let in while you are still setting up the lab. Once the experiment starts it could equally be good to replace the note with another one saying “Experiment in progress, please do not disturb” perhaps with instructions for late-comers to email you to reschedule. An example can be found in the Appendix.

Room set up

The lab consists of 2 sections, separated by an aisle. Each section consists of 5 rows of computers. Each row consists of 3 computers. This gives a capacity of 30.

Often it is important for the study to maximize subjects' privacy when they make their decisions. In practical terms, this is possible to do by erecting makeshift barriers to form “cubicles” as shown in the picture below:



The cardboards can be found rolled up in the EC stationery room and are attached to the tables using sticky tapes. You might want to number each “cubicle” by attaching a numbered post-it note on the cardboard (or the back of the computer for the front row), which you might also want to randomize. This can act as a seat number to ensure friends do not sit next to each other. The roll-up signs are stored in the janitor’s area behind the EC reception. The middle computer can be turned sideways to increase privacy, and this reduces the room’s capacity to 20.

I ran an experiment where the level of activity was, roughly reflected by the number of mouse clicks people made. If you’re doing something similar, you may want to pre-record clicking noises and play them on the room’s sound system to make sure people can’t tell how often their neighbors are clicking. I did not do this, though. (Claes)

Remember to distribute instructions, possibly with pen and paper for calculation, and put them next to each computer. One possibly useful tip is to put the instructions in plastic sleeves inside binders. This is a lot more work, especially when switching treatments, but it means you can reuse the instructions and save paper instead of reprinting them for every session, or worse, collecting them after each session for reuse and having to check each sheet of paper for marking.

In normal conditions, the lab is usually locked and only accessible using the LU staff card. This means you have to open the door to let students in, which can be a good thing to minimize disturbance from late-comers.

There is a buzzer by the teacher’s desk which I understand is supposed to unlock the door from the inside, but I have never tried this. I have also found the door unlocked at other occasions - I am yet to figure out how to ensure this is always or never the case. Contact Jörgen Norén if this is important to you. (Margaret)

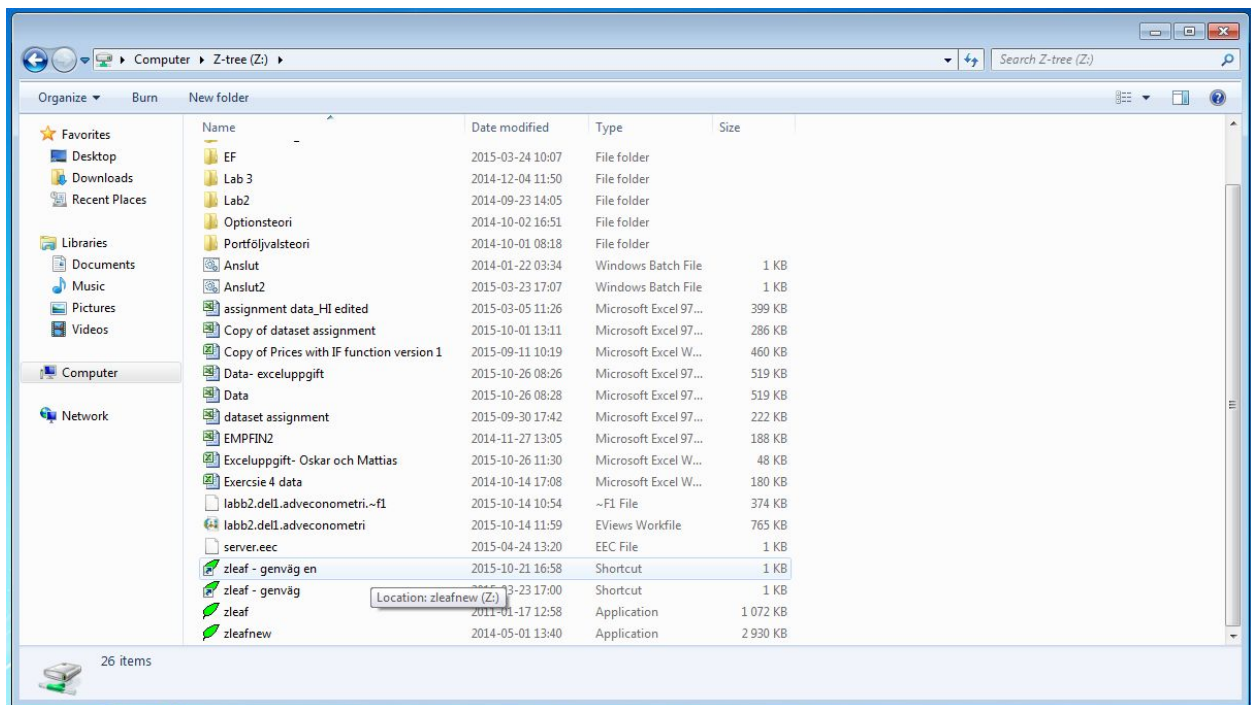
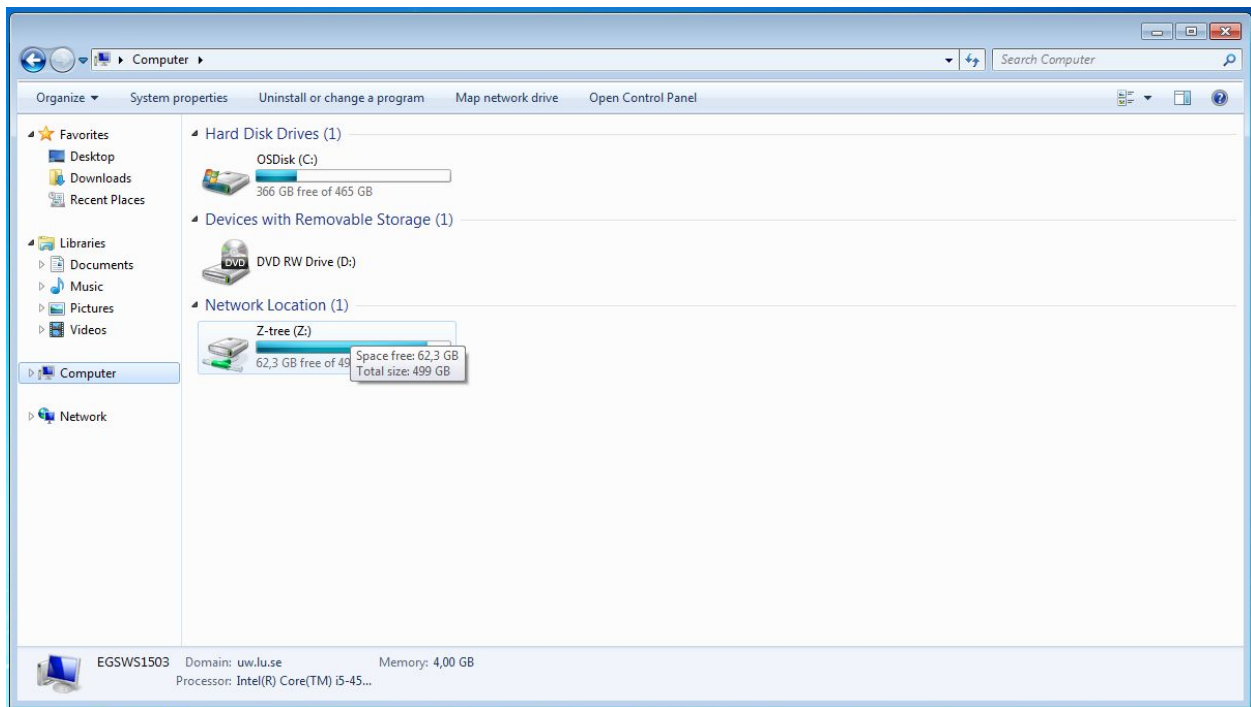
It is a good idea to contact a Masters’ student interested in experimental or behavioral economics to be an assistant during the sessions and help, especially in setting up the above.

Computer set up

Start by ensuring student computers are turned on (if they are turned off, turning them on and getting to the log-in screen could take a while). To turn them on, use the touchscreen on the teacher’s desk with the code 1234. Then log in to each computer using your LUCAT ID.

Log in to the teacher’s computer. Open the treatment on z-Tree, which should be in the same directory as your own computer. The treatment has to be open for the next step.

At each student computer, open z-Leaf by opening Windows Explorer and navigate to the Z: drive.



There should be two z-Leaf shortcuts, one of which has ending “en”. This stands for English (the other shortcut is Swedish) and determines the language of error messages during the experiment. Choose one depending on the language of your subject pool.

It seems important to restart z-Leaves for each treatment. I have experienced losing data when I reused the same z-Leaf windows to run a second treatment. (Margaret)

Once z-Leaf is displayed on every student computer, you are ready to let the students come in and start the session!

Checking in students

You should ideally have a participants list ready, which you can download from the Doodle registration page for example. Ask students to form a queue outside the door. Check their name in the participants list and give them a seat number. As they take their seats, tell them to ensure their phones are turned off or on silent and not to read the instructions until told to do so.

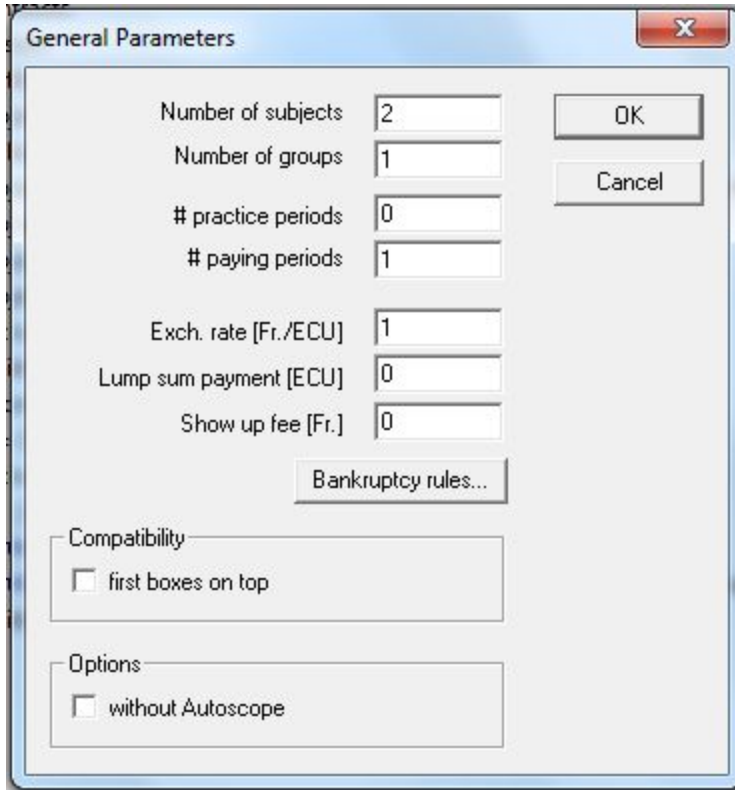
Sometimes you need a certain multiple number of participants, and you have extra students on the day. For example, the experiment takes place in pairs and you have an odd number of people. The fairest and most efficient way to deal with this seems to be to ask for a volunteer who would be willing to sign up for a future session for an extra payment of the show-up fee, to be paid after the new session. If it is the last session, then you just need a volunteer who would be willing to leave in exchange for the show-up fee, the student does not have to sign up for a new session. If there is no volunteer, then you would just have to pick someone at random.

In case there are no shows and some computers are left unused, you need to quit z-Leaf on these computers. Make sure that the final number of subjects corresponds to the number of connected computers on the “Clients’ Table” on the teacher’s computer screen.

2 clients	state	time	
EGSWS1503	Ready	-	
EGSWS1507	Ready	-	

Starting the treatment

It cannot be said too many times: z-Tree will ask for the number of subjects, and then the number of groups, NOT the number of subjects per group.



Don't make the same mistake as I did by putting subjects into two groups of seven rather than seven groups of two. (Margaret)

Ending the treatment

An experiment is typically ended with a questionnaire, which might have a certain way of saving the data or displaying the final screen. Another alternative is to simply include the questions at the end of the actual .ztt treatment itself. The final screen can then be programmed to display the amount each subject earns and a message to raise their hand when they are finished, and will timeout after, say, 15 minutes. The following is based on this second method.

Payment

When a subject is finished and raises their hand, you would approach them with a payment form and write down the amount displayed on the screen. The form should also gather other information such as preferred method of payment, name, phone number etc which you can ask the subject to complete while attending to another subject (in case of a queue). An example of the payment form can be found in the Appendix.

A very efficient way of paying students is Swish, for which you need to have a Swedish bank account. This lets you pay them using your phone: you only need to enter their phone number and their name will be displayed on the phone screen, which helps confirm that the money is paid to the right person. Swish saves you having to carry a lot of cash and have the correct change. The downside is that sometimes your bank might have a limit on the amount you can transfer (eg 15000 SEK in a 4 day period) so you might have to wait a day to increase your limit. Also, international students will not have Swish so you will still have to prepare some cash (though a lot less than if you pay everyone by cash).

Swedish bank transfer is another possibility to get around the Swish transfer limit, which may also be available for more international students. The downside is you will have to chase subjects up for their bank details, and again some international students will not have a Swedish account and will still have to be paid by cash.

For cash payments, you can withdraw money at the ATM machine at ICA Tuna. Note that there are also limits for how much you're allowed to withdraw from ATM machines, e.g. per day. A quick Google search reveals that the limit varies across different cards, so if you're taking this route, look up the rules for the particular card you'll be using. Typically the rule is something like 10 000 per day and 25 000 per week, though, so if you're planning to use more than that, make sure you withdraw it ahead of time.

It is possible to ask the cashier to change the money into smaller denominations, of course try to do this in the early morning when the shop is not as busy. Alternatively, simply tell students that you only have 100kr notes and ask them to bring the required change (see payment form in Appendix). When you pay the students, make sure to prepare a receipt for them to sign which you then keep as proof of payment. An example receipt can be found in the Appendix.

I offered students the possibility to be paid by Swish (chosen by 59%) or Swedish bank transfer (24%), and only in the minority of cases did I offer to pay cash. (Margaret)

Withdrawing SEK 15 000 worth of SEK 100 bills only takes about half an hour, though! (Claes)

Packing up

After the subject fills out the payment form and you collect it, they are free to leave. The computer screen will continue counting down until it times out. The downside of this method of programming is having to wait out the countdown after the last subject has finished to close the program. It is important you wait this long, and ensure that all clients are displayed as "Ready" on the Clients' Table, before closing down z-Tree to avoid losing data. You can spend this time collecting instructions, cleaning up and dismounting the roll-up screens, for example. It is safe to leave the roll-up screens and cardboard in the front corner of the room to save you having to carry everything to and from your office for each session.

Once all clients are “Ready”, make sure the data is saved as an excel file, and THEN you can close z-Leaf on each student computer and log off. Finally you can log off the teacher’s computer.

Checklist

Before each session:

- Prepare instructions for the treatment
- Print payment forms
- Print participant list

At the start of the session:

- Put up door sign
- Start all computers and log in
- Start z-Tree on teacher’s computer
- Start z-Leaf on students’ computers
- Put up cardboard screens and seat numbers 1-20 (if needed)
- Distribute instructions face down, with pen and paper (if needed)
- Let students enter, randomise seat numbers
- Change door sign
- Close z-Leaf on each unused computer
- Read instructions
- Double-check that the numbers of participants and groups are correct in z-Tree, and anything else that has to be updated before each treatment
- Start!

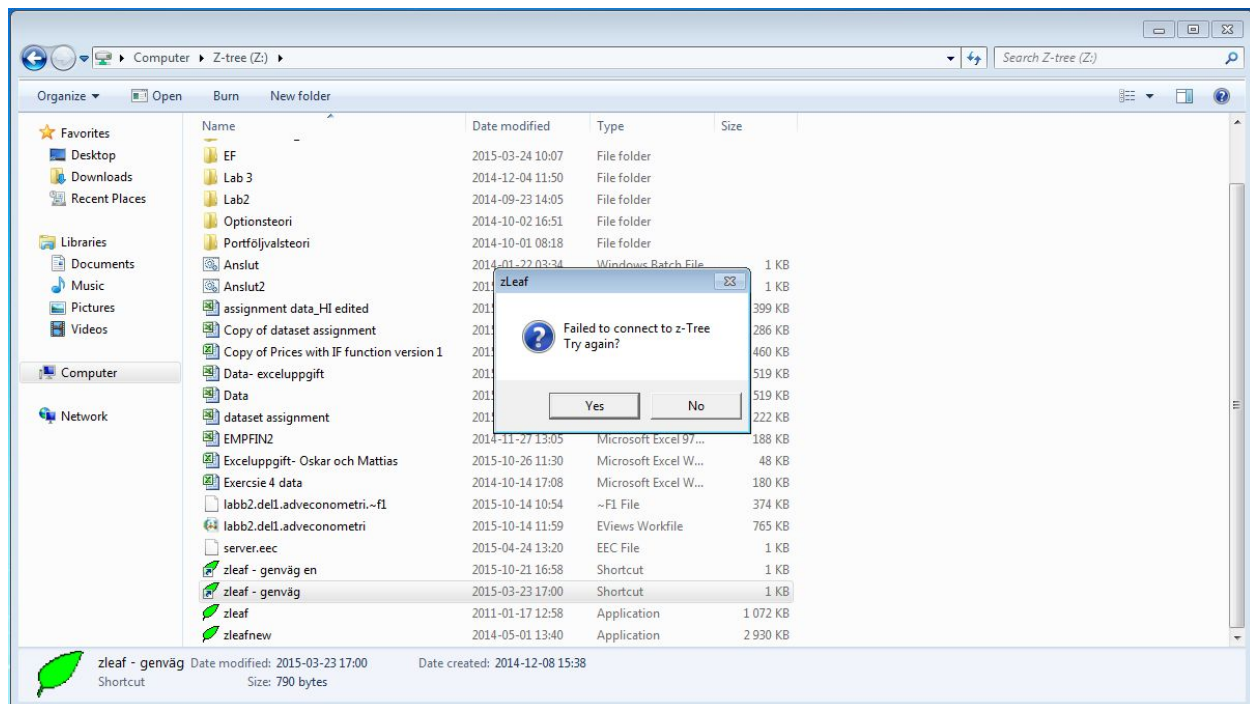
Packing up:

- Dismantle cardboard screens while waiting for all z-Leaves to time out
- Once all z-Leaves have timed out, close it on each student computer and log out
- Once all z-Leaves are closed, close z-Tree on the teacher’s computer
- Check that the data file is there, may be a good idea to copy it somewhere
- Log out of teacher’s computer

Troubleshooting and other problem solvers

The Z: drive does not appear in Windows Explorer on a student computer
Simply restart the computer and it should appear.

You get an error message when starting z-Leaf



Make sure the treatment is open on z-Tree on the teacher's computer before starting z-Leaf on the student computers.

You get an odd number of subjects, for example because of no-shows, and consequently have to turn away some subjects due to needing a certain group size

Since it is hard enough getting subjects to come, having to turn away subjects is unfortunate. The best response seems to be to offer them 100SEK (or a similar amount) to be paid with their experimental earnings if they agree to take part in a future session. Of course, if it is the last session you will just have to ask for a volunteer to leave (for free to start off with) without signing up to another session.

There is missing data on the excel sheet

Check the file on the lab's teacher computer, sometimes the data is missing from the office computer but is there when you open it in EC3:206, for some unknown reason. Alternatively, it might be that z-Tree has not finished writing the data yet. Check again after some time.

There is no excel file where you expect it to be

Sometimes you accidentally might have shut down z-Tree before all z-Leaves finish timing out, or you are just unlucky to lose the data. In this worst case there is not really that much you can do besides putting it down to bad luck...

When this happened to me I was told there was a way to recover the data from the .gsf file but I did not manage to find it. (Margaret)

Another thing that happened to me was that I'd mistakenly created a final stage (accessed only in the final period) with no "way out" - this was essentially a final thank-you screen. But because the experiment was still technically running in this stage, in the first session I ran, all the data from the final period were lost because I couldn't figure out how to make z-Tree progress from that stage and conclude the session. Afterwards I was also unable to recover that data from the .gsf file. However, if you find yourself in the lab in exactly this situation (subjects can't progress to the next stage), don't panic! In the "Run" drop-down menu, there is an option labelled "Leave Stage", which actually does force progression from one stage to the next. Typically, however, this option is greyed out, which had me fooled at the time. What you need to do is to go to the "Clients' Table" (also in the Run menu), highlight a given subject's status, and THEN click "Leave Stage". If I'd known this at the time, it would have saved me quite a bit of headache, not to mention a lot of money. (Claes)

Appendix

Invitation Email

Subject:

Help us with economic research and earn money! An invitation to take part in an economic experiment.

Dear students,

Information

You have been invited to take part in a study run by Prof Jerker Holm and Margaret Samahita at Lund University Department of Economics to learn more about how individuals make economic decisions. Economic experiment is a widely recognized research method. It's interesting to take part, you will learn more about economic research and it can also be fun! Most importantly, by participating you will help contribute to economic research.

If you agree to be in the study, you will be asked to make economic decisions anonymously using computer terminals in a computer lab. Your participation in the study may last up to 2 hours. You will be offered SEK50 for your participation until the end of the session. You may be able to make much more money by participating, but the total amount you earn will depend on the decisions you make and sometimes on the decision of others and on chance. It is difficult to know exactly how much you will earn beforehand, but based on experience, we expect that the average student will earn around 300kr (inclusive participation fee), though some of you may earn more and others may earn less.

If you have any question related to this study, you may contact Margaret Samahita at Margaret.samahita@nek.lu.se.

To participate

To take part in the experimental study, please sign up at the link below. **First come first served!**

<http://doodle.com/k24dpdcyagv2f32q>

You may only sign up for a maximum of one session. All sessions will take place in the first two weeks of November in the computer lab located at EC3:206.

You will receive an email confirming your participation at the chosen session within 24 hours of signing up. Please contact Margaret Samahita at Margaret.samahita@nek.lu.se if you do not receive this email.

It is important for our study that each participant attends the session they are registered for. If for any reason you can no longer come to your session, please notify us as soon as possible so that a replacement may be found.

Thank you in advance for your participation!

Prof Jerker Holm
Margaret Samahita

Department of Economics,
Lund University

Door Sign

See next page.

ECONOMIC EXPERIMENT

Please wait in a line
&
have your ID ready.

We will check you in at quarter
past.

EXPERIMENT IN PROGRESS

Please do not disturb.

*Latecomer or interested to
participate?*

*Sign up for another session on
<http://bit.ly/2chgDBu>*

Payment Form

Payment for participation in experiment (to be kept by experimenter)

Name: _____ Date: _____

Email: _____

Amount: _____kr

Payment method:

- Swish (PREFERRED)** – the amount will be transferred to you today.
My Swish phone number is _____
- Bank transfer to a Swedish account** – the amount will be transferred within 24 hours of receiving your bank account number. **Please email your CLEARING and ACCOUNT NUMBERS to Margaret.**
- Cash** – we have a limited amount of cash so please choose this only if you do not have Swish or a Swedish bank account. Please pick it up at **EC1:261 between 9-10am tomorrow** or email Margaret to arrange pick up. We only have 100kr notes so please **bring the required change.**

Cash Receipt

Receipt for experiment payment

This confirms that I have received the following amount in cash for participating in an experiment conducted by Margaret Samahita.

Date: _____

Name: _____

Person number/date of birth: _____

Amount: _____

Signature:

Receipt for experiment payment

This confirms that I have received the following amount in cash for participating in an experiment conducted by Margaret Samahita.

Date: _____

Name: _____

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Amount: _____

Signature:

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