# Interactive experiments in the online classroom part II

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Bard College Berlin & University of Passau

Webinar January 27th 2021

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# People

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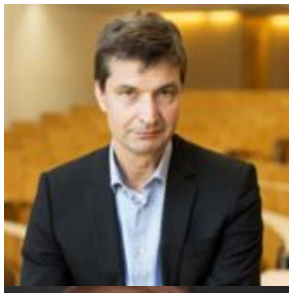
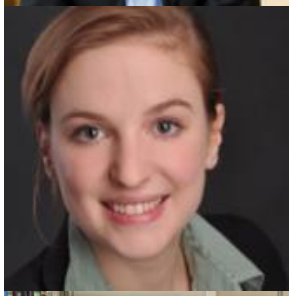
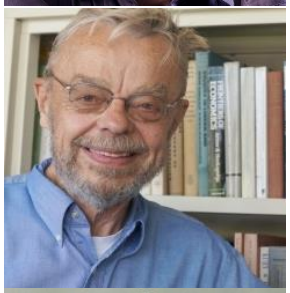
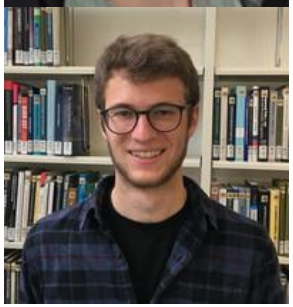
ECON CLASS EXPERIMENTS

UNIVERSITÄT PASSAU

JOACHIM HERZ STIFTUNG





core econ

class Ex @school

X-econ
Repository of Experimental Economics

# Webinar series

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- Part Ia: Run experiments with classEx
  January 20th 2021 4pm
  Recording available at classEx.de/webinars

- Part Ib: Experiments for teaching macroeconomics
  February 3rd 2021 4pm
  Additional topic webinars possible in the future

- **Part II: Develop own experiments**
  **January 27th 2021 4pm**
  **Recording made available at classEx.de/webinars**

*All information can be found at classEx.de/webinars*

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# Building own experiments

# Resources

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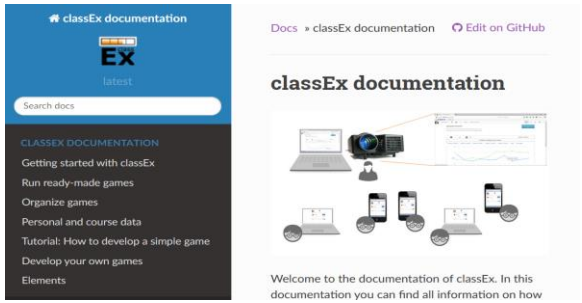
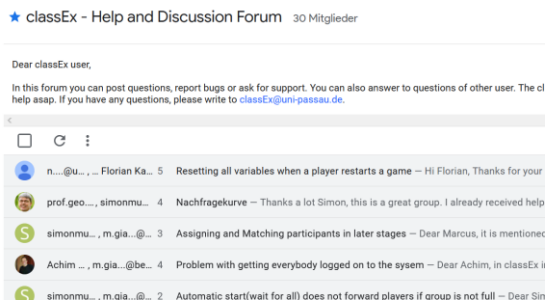



**classEx Documentation**
https://classEx.de/documentation
Extensive documentation of classEx




**Help and Discussion Forum**
https://classEx.de/forum
Google group for Q&A

**Copy existing experiments**
Ready-made games and repository in classEx

# Architecture

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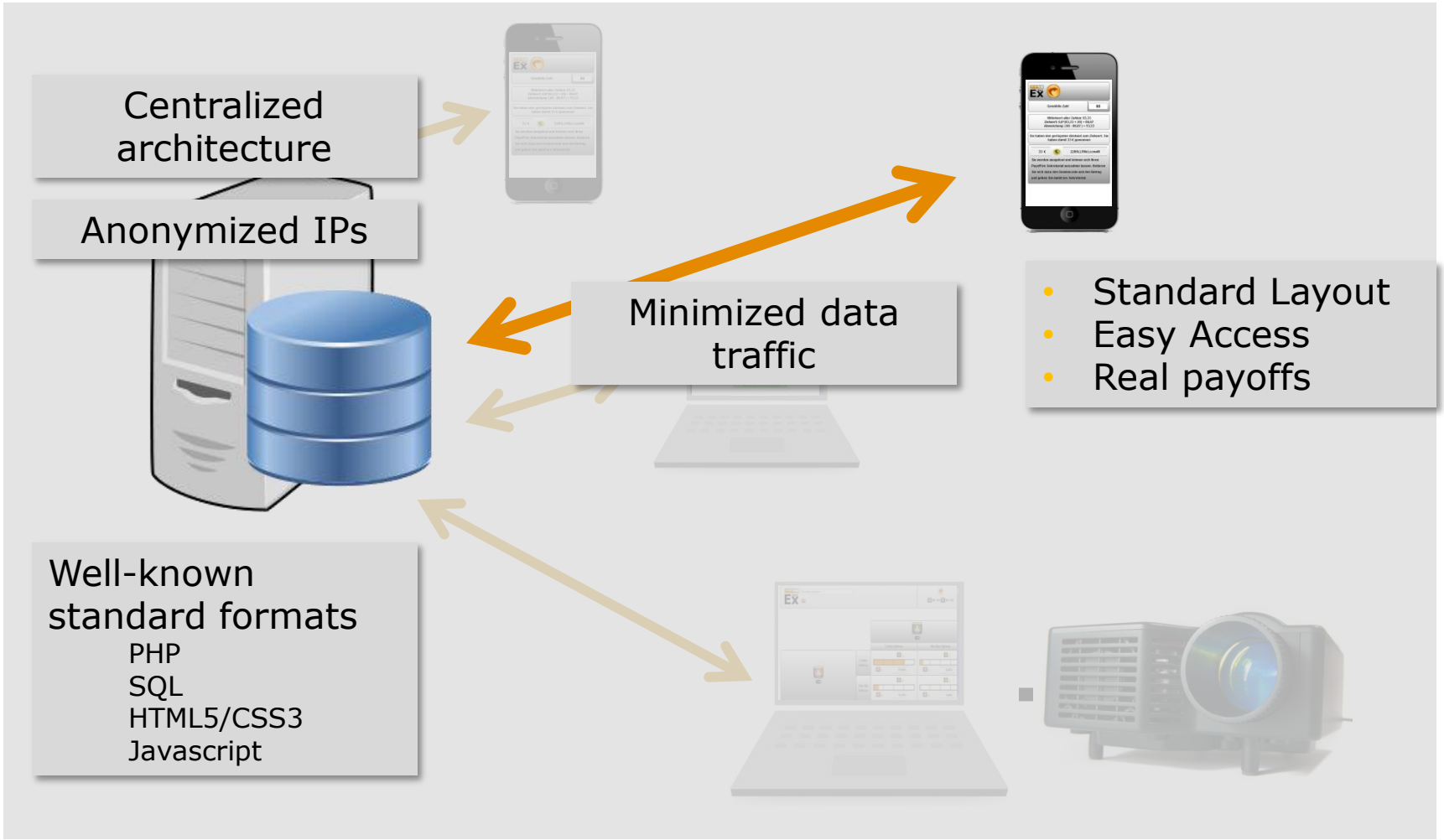
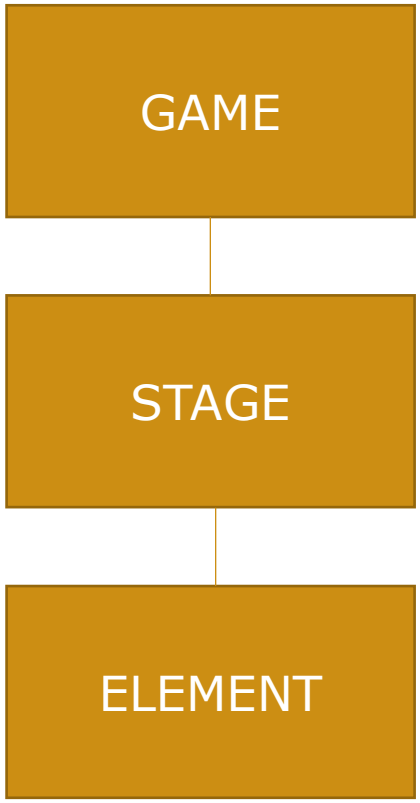


# Game structure

# Nomenclature



# Element types

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*participant*

*experimenter*

OUTPUT

text box

text box

Histogram
Pie Chart
Line Chart
Matrix

INPUT

Discrete choice
Numeric input
Text input
Slider/Radioline
Contracts

Discrete choice

CONTROL

Start button
Automatic start

CALC

subjects program (PHP)

Additional javascript

globals program (PHP)

# Backend system

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Ultimatum Game

3 rounds

assignment & matching | stage 1 proposer | stage 2 responder | stage 3 result | +

participant — add new element

E1 program code (subjects) — for all roles

```
$max = 10;
$endow = 10;
```

E2 input element

#1 type of input field: Numeric Input Field — variable names: $ keep

only role 1

text

role2.png erhält:

role2.png gets

minimum | maximum | decimal place: 0

unit: € | default | required | output only

#2 type of input field: Numeric Input Field — variable names: $ send

only role 1

experimenter — add new element

E1 text box — display only if stage is activated — no update

Sie spielen mit einem anderen Teilnehmer hier im Hörsaal. role1.png macht den Vorschlag für die Aufteilung von 10€. role2.png kann diesem Vorschlag annehmen oder ablehnen. Lehnt er ab, erhalten beide nichts.

You play with another participant here in the lecture hall. role1.png decides how to divide 10€ between role1.png and role2.png . Then role2.png can decide to accept or reject the proposal. If role2.png rejects the proposal, both players get nothing.

E2 start button

button label: Start | feature: start | confirmation message: no | round: display

# Start a stage

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- Normally on each stage the lecturer has a start button.
  - Start button is on the stage which has to be started.
  - Result elements automatically have a start button.
- Automatic Forwarding also possible.
  - Forwarding by the lecturer (if possible/wait for all)

# How many stages?



- Stages are, first of all, synchronisation points.
- All decisions have to be made before the next stage can be started.
- Stages can also be used for different screens.

# Data model

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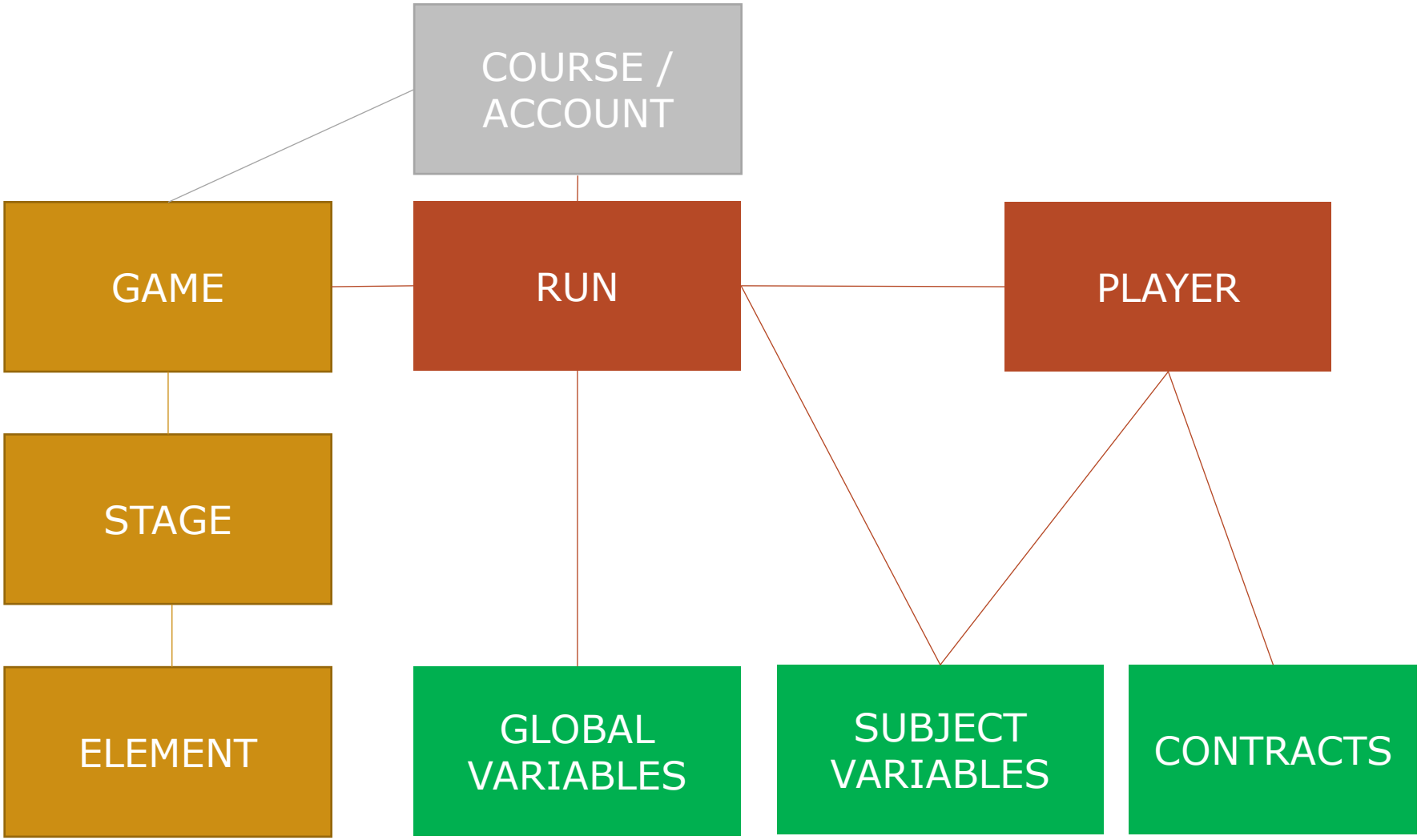

# Stored decisions

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- Decisions are stored as subject variables (and available through the whole game).
- In a text box variables can be displayed with: **$**variablename**;** e.g. You have chosen answer $choice;.
- Program elements can be used to modify variables.
- Decisions (and globals) are stored automatically,
  Other variables have to be stored with
  $save(„variablename“, $value);

SUBJECT VARIABLES

# Player IDs

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- 3 type of player Ids
  - Internal unique playerID (all classEx, re-used)
  - Subject ID (unique in one game, 1-…)
  - External ID (ticket)
    - can be provided at login or via URL

SUBJECT VARIABLES

$id
$subject
$tic

# Matching

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- On-the-fly
- First come – first serve
- First stage of game

- *Treatments*
- *Roles*
- *Groups*

SUBJECT VARIABLES

$treatment
$role
$group

# Matching

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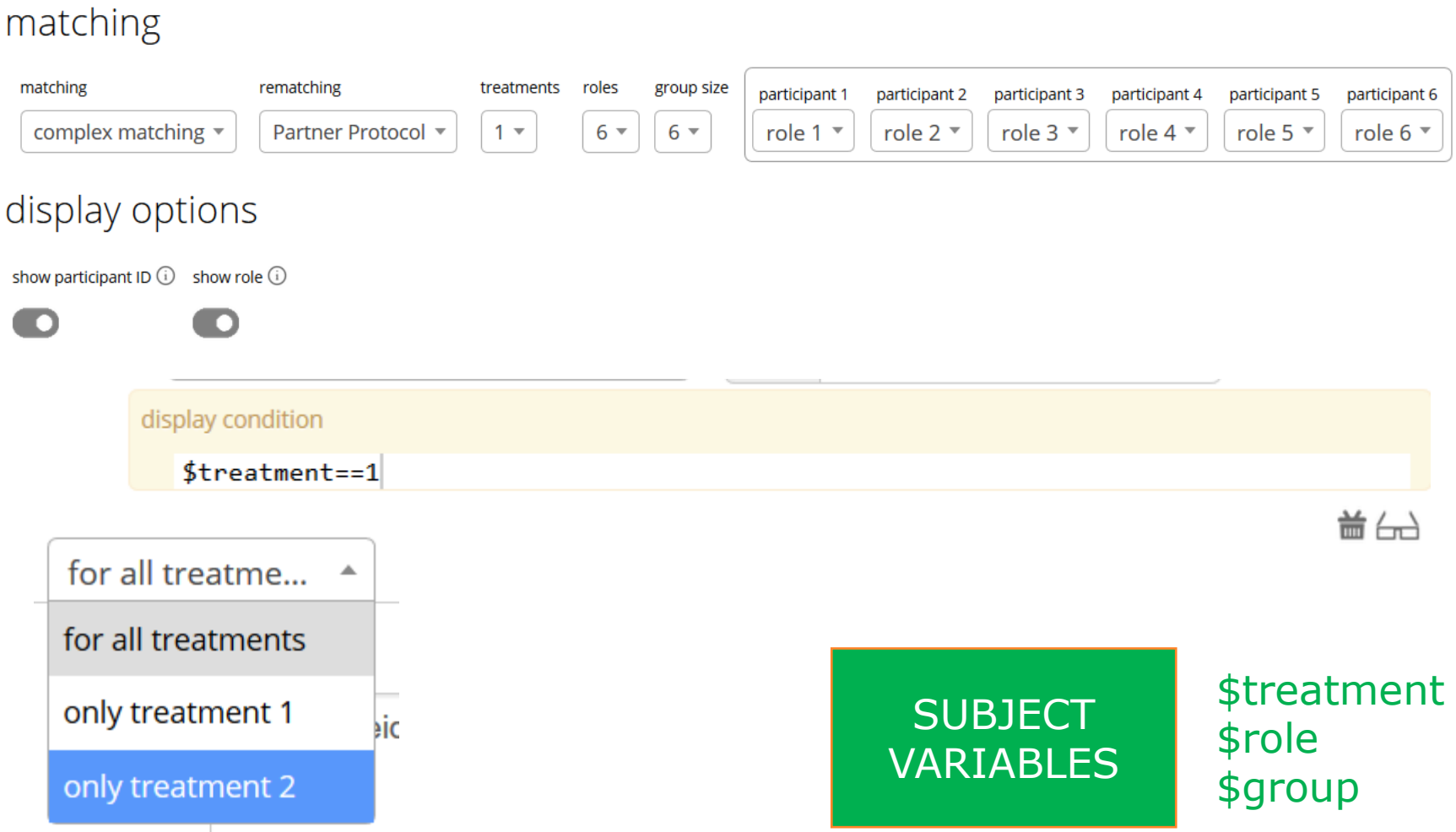
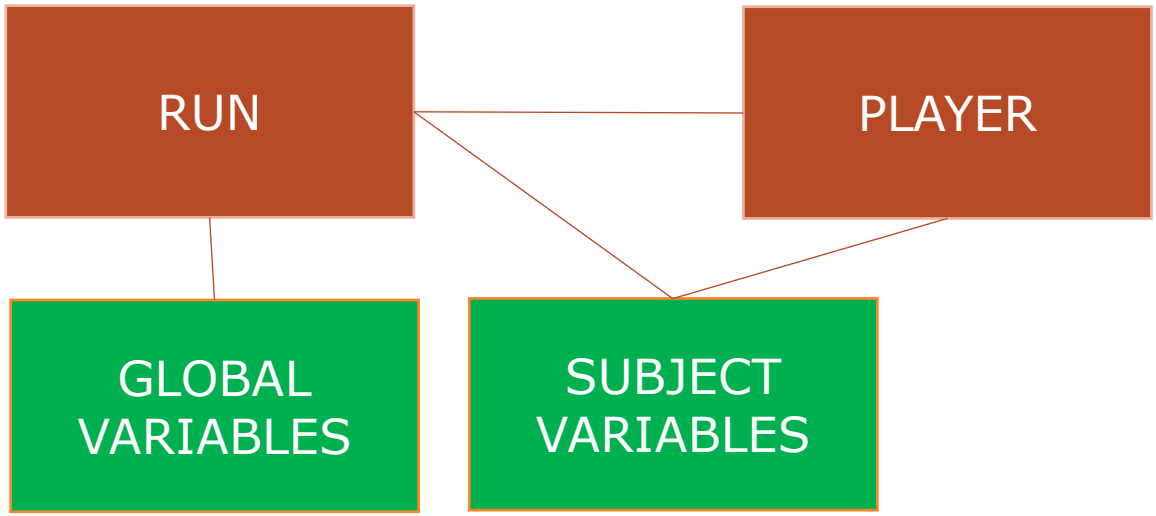



SUBJECT VARIABLES

$treatment
$role
$group

# Variables






- Same namespace (overwriting!!)
- Global variables are written first and always available (same for each player)
- Subject variables are specific to player

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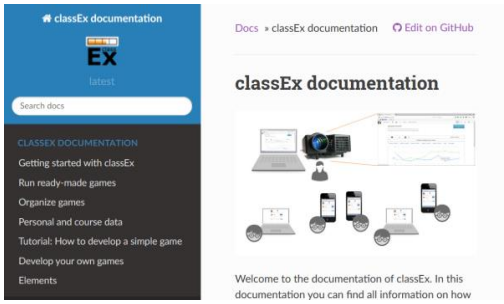
# Thanks for your attention!

More information can be found at classEx.de

For questions use the forum or email to classEx@uni-passau.de

THE CORE PROJECT
EXPERIENCING ECONOMICS

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