

## Part VII

# Recruitment, Text formatting and Multimedia

# Recruitment, Text formatting and Multimedia

Recruitment: ORSEE

Text formatting

Plots and vectorial graphics

`plot box`

`plot items`

`plot inputs`

Multimedia, slide-shows and external programs

External programs

# Recruitment: ORSEE

Recruitment, Text  
formatting and  
Multimedia

ORSEE is a web-based Online Recruitment System, specifically designed for organizing economic experiments. It's key features are:

- ▶ multiple experimenter/laboratory/subject-pool/experiment-classes/language support,
- ▶ random recruitment,
- ▶ public and internal experiment calendar,
- ▶ reputation system,
- ▶ automated mailing,
- ▶ pdf output,
- ▶ experimenter rights management.

ORSEE comes with a complete documentation.

Recruitment:  
ORSEE

Text formatting

Vectorial graphics

Multimedia

External programs

# Recruitment with ORSEE - in a nutshell

Recruitment, Text  
formatting and  
Multimedia

You need IT support to install ORSEE on your university server.

Once ORSEE is installed and you have an account, you can/should:

- ▶ create a **new experiment**
- ▶ **select subjects** for the experiment
- ▶ create **sessions** within an experiment
- ▶ send **e-mail invitations** and check who subscribed
- ▶ after each session, **record who participated** and close the session
- ▶ at the end of the last session, **close the experiment**

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# Create a new experiment

Recruitment, Text  
formatting and  
Multimedia

The screenshot shows the ORSEE web application interface. The top navigation bar includes the ORSEE logo and the tagline 'THE EASE OF RECRUITMENT'. The left sidebar contains a navigation menu with options like 'Home', 'Experiments', 'Participants', 'Calendar', 'Downloads', 'Options', 'Statistics', and 'Logout'. The main content area is titled 'My Experiments' and displays a table of current experiments. A red circle highlights the 'Register new experiment' button in the 'Options' section.

**My Experiments**

2 current experiments

Experiments with scheduled sessions	
<b>Trust Game and Stag Hunt (Studio BLESS)</b> Type: Laboratory (LES - Bologna) Class: - Experimenter: <a href="#">Marco Casari</a> , <a href="#">francesca pancotto</a> , <a href="#">maria bigoni</a> , <a href="#">stefania bortolotti</a> Invited Subjects: 783 Shown-up subjects: 0	from 03/30/2011 to 04/01/2011 Sessions: 3 Get emails: <a href="#">stefania bortolotti</a> Registered Subjects: 108 Participated: 0
<b>prisoner dilemma in continuous time (Exp_PDCTN)</b> Type: Laboratory (LES - Bologna) Class: prisoner dilemma Experimenter: <a href="#">maria bigoni</a> Invited Subjects: 874 Shown-up subjects: 260	from 07/07/2010 to 02/04/2011 Sessions: 11 Get emails: <a href="#">maria bigoni</a> Registered Subjects: 284 Participated: 221

**Options:**

[Register new experiment](#) [Finished experiments](#)

**Finished experiments**

7 finished experiments

Experiments with scheduled sessions	
<b>casari, francesca.pancotto, maria.bigoni, stefania.bortolotti: PGG Emilia Romagna (Studio BLESS: SOLO NATI IN EMILIA ROMAGNA)</b> Laboratory (LES - Bologna), public good game, from 03/24/2011 to 03/24/2011, 2 Sessions, 52 Participants	
<b>francesca.pancotto, maria.bigoni, stefania.bortolotti: TPO and punishment (Piola P. Good Game Strangers)</b> Laboratory (LES - Bologna), public good game, from 11/30/2010 to 02/23/2011, 4 Sessions, 60 Participants	
<b>maria.bigoni: Bigoni 1 (Esperimento Contratti 4)</b> Laboratory (LES - Bologna), -, from 01/30/2009 to 01/30/2009, 2 Sessions, 23 Participants	
<b>maria.bigoni: Bigoni 3 (Esperimento Contratti 3)</b> Laboratory (LES - Bologna), -, from 12/17/2008 to 12/17/2008, 3 Sessions, 14 Participants	

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# Set the details of the experiment

Recruitment, Text  
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Recruitment:  
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LES - BLESS: edit experi... x

les.potoforti.unibo.it/recruit/admin/experiment\_edit.php?addit=true

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ONLINE RECRUITMENT SYSTEM FOR ECONOMIC EXPERIMENTS

**ORSEE**  
THE EASE OF RECRUITMENT

**Edit experiment**

**Admin Area**  
User: maria.bigoni  
Date: 03/29  
Time: 11:02

**Home**

**Experiments**  
Overview  
My Experiments  
**Create new**  
Finished experiments

**Participants**  
Overview  
Create new

**Calendar**

**Downloads**

**Options**

**Statistics**

**Logout**

**Id** 1317915661

**Internal name:**  [\[Help\]](#)

**Public name:**  [\[Help\]](#)

**Description:**  [\[Help\]](#)

**Type:** Laboratory (LES - Forli) [\[Help\]](#)

**Class:**

**Experimenter:** [\[Help\]](#)

<input type="checkbox"/> Marco Adami	<input type="checkbox"/> andrea blasco	<input type="checkbox"/> Marco Casari
<input type="checkbox"/> Davide Dragone	<input type="checkbox"/> fabio galeotti	<input type="checkbox"/> francesca pancotto
<input checked="" type="checkbox"/> maria bigoni	<input type="checkbox"/> mattia nardotto	<input type="checkbox"/> Natalia Montinari
<input type="checkbox"/> Raimondello oraini	<input type="checkbox"/> Paolo Vanin	<input type="checkbox"/> stefania bortoletti
<input type="checkbox"/> tommaso reggiani		

**Experiment access restricted?:** [\[Help\]](#)

<input type="checkbox"/> Marco Adami	<input type="checkbox"/> andrea blasco	<input type="checkbox"/> Marco Casari
<input type="checkbox"/> Davide Dragone	<input type="checkbox"/> fabio galeotti	<input type="checkbox"/> francesca pancotto
<input checked="" type="checkbox"/> maria bigoni	<input type="checkbox"/> mattia nardotto	<input type="checkbox"/> Natalia Montinari
<input type="checkbox"/> Raimondello oraini	<input type="checkbox"/> Paolo Vanin	<input type="checkbox"/> stefania bortoletti
<input type="checkbox"/> tommaso reggiani		

**Get emails:** [\[Help\]](#)

**E-mail sender address:** dse.bless@unibo.it [\[Help\]](#)

**Experiment finished?** [\[Help\]](#)

**Hide in participant statistics?** [\[Help\]](#)

**Hide in public calendar?** [\[Help\]](#)

**Link to paper:**  [\[Help\]](#)

[Home](#)

# Assign subjects and create sessions

Recruitment, Text  
formatting and  
Multimedia

LES - BLESS: experimen... x

les.poloftori.unibo.it/recruit/admin/experiment\_show.php?experiment\_id=280617948

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**ORSEE**  
THE EASE OF RECRUITMENT

Admin Area  
User: marco.bignoli  
Date: 03/03/2011  
Time: 11:03

Home  
Experiments  
Participants  
Calendar  
Downloads  
Options  
Statistics  
Legend

### Trust Game and Stag Hunt

#### Basic Data

id:	280617948
Name:	Trust Game and Stag Hunt
Public name:	Studio BLESS
Type:	Laboratory (LES - Bologna)
Class:	Army
Description:	Trust game and stag hunt with 3 players
Experimenters:	<a href="#">Marco Bignoli</a> , <a href="#">Francesca Bignoli</a> , <a href="#">Marco Bignoli</a> , <a href="#">Valentina Bignoli</a>
Get email:	<a href="#">valentina.bignoli@unibo.it</a>
E-mail sender address:	bless@unibo.it
From:	03/03/2011
To:	04/03/2011
Experiment not finished	
Options:	
<a href="#">Edit basic data</a>	<a href="#">Upload file zssu</a>

#### Sessions

3 Sessions registered

03/04/2011 11:00-13:00 <a href="#">Registered Subjects: 36 (30.0) [new]</a>	Session reminder: sent	BLESS - Bologna -	<a href="#">Edit</a>
03/03/2011 11:00-13:00 <a href="#">Registered Subjects: 36 (30.0) [new]</a>	Session reminder: waiting ...	BLESS - Bologna -	<a href="#">Edit</a>
04/03/2011 11:00-13:00 <a href="#">Registered Subjects: 36 (30.0) [new]</a>	Session reminder: waiting ...	BLESS - Bologna -	<a href="#">Edit</a>
Options:			
<a href="#">Create new</a>			

#### Participants

<a href="#">Assigned Subjects: [new]</a>	763
<a href="#">Picked Subjects: [new]</a>	763
<a href="#">Invited Subjects: [new]</a>	100
<a href="#">Shown-up subjects: [new]</a>	0
<a href="#">Participants: [new]</a>	0
Options:	
<a href="#">Assign subjects</a>	<a href="#">Delete assigned subjects</a>
<a href="#">Send invitations</a>	

Home Logout

Recruitment:  
ORSEE

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# Set the details of the session

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Recruitment:  
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LES - BLESS: edit session

les.potoforti.unibo.it/recruit/admin/session\_edit.php?session\_id=296004200

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ONLINE RECRUITMENT SYSTEM FOR ECONOMIC EXPERIMENTS

**ORSEE**  
THE EASE OF RECRUITMENT

### Edit session

**Admin Area**  
User: maria.bigoni  
Date: 03/29  
Time: 11:04

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[Experiments](#)  
Overview  
My Experiments  
Create new  
Finished experiments

[Participants](#)  
Overview  
Create new

[Calendar](#)

[Downloads](#)

[Options](#)

[Statistics](#)

[Logout](#)

**Id:** 296004200

**Date:** 30 - 03 - 2011

**Time:** 11 : 00

**Laboratory:** BLESS - Bologna -

**Duration of experiment:** 02 : 00 [\[Help\]](#)

**Session reminder (hours before start):** 36 (03/28 23:00) [\[Help\]](#)

**Send reminder** when as much participants registered as needed, else manually

**Needed participants:** 30 [\[Help\]](#)

**Reserve participants:** 06 [\[Help\]](#)

**Registration end (hours before start):** 36 (03/28 23:00) [\[Help\]](#)

**Remarks:**

**Session finished?** ☐ [\[Help\]](#)

[Change](#)

[Delete](#)

[Mainpage of this experiment](#)

[Home](#)

[Logout](#)



# Record subjects' participation

Recruitment, Text  
formatting and  
Multimedia

Inbox - maria.bigoni@g... x LES - BLESS: show partic... x

← → ↺ 🏠 🌐 les.polofoorti.unibo.it/recruit/admin/experiment\_participants\_show.php?experiment\_id=1697169476&focus=registered&session\_id=1107803296

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Admin Area  
User: maria.bigoni  
Date: 03/29  
Time: 11:14

Home

Experiments  
Overview  
My Experiments  
Create new  
Finished experiments

Participants  
Overview  
Create new

Calendar

Downloads

Options

Statistics

Logout

prisoner dilemma in continuous time

Registered Subjects

PRINT VERSION

Query: SELECT \* FROM or\_participants, or\_participate\_at, or\_sessions WHERE or\_participants.participant\_id=or\_participate\_at.participant\_id AND or\_sessions.session\_id=or\_participate\_at.session\_id AND or\_participate\_at\_experiment\_id=1697169476 AND or\_participate\_at.session\_id=1107803296 AND registered='Y' ORDER BY session\_start\_year, session\_start\_month, session\_start\_day, session\_start\_hour, session\_start\_minute, lname, fname, email

	Lasname	Firstname	E-Mail-Address	Phone number	Gender	Main field of studies/Profession	No- shown	Session	shown: up	participated	Rules signed?
1	arcieri	stefania	stefania_arcieri@hotmail.it		f	-	0/1	10/21/2010 11:00 ▾	✓	✓	✓
2	Bianchi	Debora	deborabianchi@hotmail.it		f	Pupli	0/2	10/21/2010 11:00 ▾	✓	✓	✓
3	Bisognin	Matteo	matteo321@hotmail.com	3406466136	m	Business Administration (2008)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
4	cassanelli	pasquale	cassanelli.pasquale@gmail.com	+393408106515	m	Medical technology (2009)	1/1	10/21/2010 11:00 ▾	✓	✓	✓
5	Cinaglia	Paolo	cinas7@msn.com	3331646188	m	-	0/3	10/21/2010 11:00 ▾	✓	✓	✓
6	de dominici	wendy	wendy_time@libero.it	3401786683	f	Political Science (2005)	0/2	10/21/2010 11:00 ▾	✓	✓	✓
7	Di Nauta	Mario	mario.dinauta@studio.unibo.it	3403626441	m	Pupli	0/1	10/21/2010 11:00 ▾	✓	✓	✓
8	Donadei	Chiara	donchiara@libero.it	3296963262	f	Pharmaceutics (2005)	1/3	10/21/2010 11:00 ▾	✓	✓	✓
9	Francisconi	Luca	luca.francisconi@gmail.com	3480058535	m	Business Administration (2006)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
10	galati	lisa	lisetta_14@hotmail.it	3280216029	f	Pharmaceutics (2007)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
11	Gombacorta	Micela	micela.gombacorta@studio.unibo.it	3286126188	f	Philosophy (2008)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
12	giambuzzi	giuseppe	brucechiata@gmail.com	3404627251	m	Business Administration (2004)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
13	GUBELLINI	DAVIDE	davub@libero.it	3355398275	m	Political Science (1990)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
14	KUTROLLI	ERION	erionkutrolli@yahoo.com	3297497096	m	Economics (2004)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
15	La Tosa	Domenico	domenico.latosa@studio.unibo.it	3336943307	m	Pupli	0/3	10/21/2010 11:00 ▾	✓	✓	✓
16	Lauretti	Giovanni	giovanni.lauretti@yahoo.it	3478687775	m	Media science (2005)	0/2	10/21/2010 11:00 ▾	✓	✓	✓
17	Maiolo	Marco	marcomaiolo@hotmail.it	3281726269	m	Pupli	0/1	10/21/2010 11:00 ▾	✓	✓	✓
18	manastirliu	orkida	mnorkida@yahoo.it	3281638002	f	Economics (2004)	1/3	10/21/2010 11:00 ▾	✓	✓	✓
19	martinelli	roberta	robertaa.martinelli@libero.it	3484387450	f	Psychology (2008)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
20	Norelli	Giulia	giulia.norelli@studio.unibo.it		f	Media science (2008)	0/2	10/21/2010 11:00 ▾	✓	✓	✓
21	Rizzi	Riccardo	rizzi riccardo@gmail.com	3497566055	m	Medical technology (2004)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
22	Sabatino	Mario	mario.sabatino@studio.unibo.it	3475700615	m	Medical technology (2007)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
23	Scali	Alessandro	drugoski@gmail.com	320605241	m	Roman Languages and Literature Studies (2001)	0/1	10/21/2010 11:00 ▾	✓	✓	✓
24	storni	elena	elenastorni@libero.it		f	Business Administration (2008)	0/1	10/21/2010 11:00 ▾	✓	✓	✓

◀ ▶ ⏪ ⏩ ⏴ ⏵ ⏶ ⏷ ⏸ ⏹ ⏺ ⏻ ⏼ ⏽ ⏾ ⏿ 🔍 ↺ ↻

Recruitment:  
ORSEE

Text formatting

Vectorial graphics

Multimedia

External programs

# Close the session

Recruitment, Text  
formatting and  
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Recruitment:  
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LES - BLESS: edit session

les.potoforti.unibo.it/recruit/admin/session\_edit.php?session\_id=296004200

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ONLINE RECRUITMENT SYSTEM FOR ECONOMIC EXPERIMENTS

**ORSEE**  
THE EASE OF RECRUITMENT

### Edit session

**Admin Area**  
User: maria.bigoni  
Date: 03/29  
Time: 11:04

**Home**

**Experiments**  
Overview  
My Experiments  
Create new  
Finished experiments

**Participants**  
Overview  
Create new

**Calendar**

**Downloads**

**Options**

**Statistics**

**Logout**

**Id:** 296004200

**Date:** 30 - 03 - 2011

**Time:** 11 : 00

**Laboratory:** BLESS - Bologna -

**Duration of experiment:** 02 : 00 [\[Help\]](#)

**Session reminder (hours before start):** 36 (03/28 23:00) [\[Help\]](#)

**Send reminder:** when as much participants registered as needed, else manually

**Needed participants:** 30 [\[Help\]](#)

**Reserve participants:** 06 [\[Help\]](#)

**Registration end (hours before start):** 36 (03/28 23:00) [\[Help\]](#)

**Remarks:**

☐ **Session finished?** [\[Help\]](#)

**Change**

**Delete**

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# Close the experiment

Recruitment, Text  
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LES - BLESS: edit experi...  
les.potoforti.unibo.it/recruit/admin/experiment\_edit.php?addit=true

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ONLINE RECRUITMENT SYSTEM FOR ECONOMIC EXPERIMENTS

## ORSEE

THE EASE OF RECRUITMENT

### Edit experiment

**Admin Area**  
User: maria.bigoni  
Date: 03/29  
Time: 11:02

**Home**

**Experiments**  
Overview  
My Experiments  
**Create new**  
Finished experiments

**Participants**  
Overview  
Create new

**Calendar**

**Downloads**

**Options**

**Statistics**

**Logout**

**Id** 1317915661

**Internal name:**  [\[Help\]](#)

**Public name:**  [\[Help\]](#)

**Description:**  [\[Help\]](#)

**Type:** Laboratory (LES - Forli) [\[Help\]](#)

**Class:**

**Experimenter:** [\[Help\]](#)

<input type="checkbox"/> Marco Adami	<input type="checkbox"/> andrea blasco	<input type="checkbox"/> Marco Casari
<input type="checkbox"/> Davide Dragone	<input type="checkbox"/> fabio galeotti	<input type="checkbox"/> francesca pancotto
<input checked="" type="checkbox"/> maria bigoni	<input type="checkbox"/> mattia nardotto	<input type="checkbox"/> Natalia Montinari
<input type="checkbox"/> Raimondello oraini	<input type="checkbox"/> Paolo Vanin	<input type="checkbox"/> stefania bortoletti
<input type="checkbox"/> tommaso reggiani		

**Experiment access restricted?:** [\[Help\]](#)

<input type="checkbox"/> Marco Adami	<input type="checkbox"/> andrea blasco	<input type="checkbox"/> Marco Casari
<input type="checkbox"/> Davide Dragone	<input type="checkbox"/> fabio galeotti	<input type="checkbox"/> francesca pancotto
<input checked="" type="checkbox"/> maria bigoni	<input type="checkbox"/> mattia nardotto	<input type="checkbox"/> Natalia Montinari
<input type="checkbox"/> Raimondello oraini	<input type="checkbox"/> Paolo Vanin	<input type="checkbox"/> stefania bortoletti
<input type="checkbox"/> tommaso reggiani		

**Get emails:** [\[Help\]](#)

**E-mail sender address:** dse.bless@unibo.it [\[Help\]](#)

**Experiment finished?** [\[Help\]](#)

**Hide in participant statistics?** [\[Help\]](#)

**Hide in public calendar?** [\[Help\]](#)

**Link to paper:**  [\[Help\]](#)

[Home](#)

## Recruitment, Text formatting and Multimedia

Finally, you can also change the color of the text, making it **RED**, **GREEN**, or **BLUE**, or highlighting it in **YELLOW**.

## Text formatting

- ▶ `text_formatting.ztt`: source code for the above example,
- ▶ `formatting_exercise.ztt`: colored text, dynamically changing size,
- ▶ `timer.ztt`: a big, colorful timer.

# Text formatting - 2

*see the Reference manual, at page 55.*

Text can be formatted in:

- ▶ standard boxes
- ▶ grid boxes
- ▶ contract creation boxes
- ▶ contract grid boxes

# Text formatting - 2

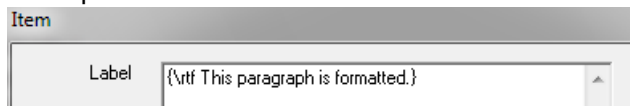
*see the Reference manual, at page 55.*

Text can be formatted in:

- ▶ standard boxes
- ▶ grid boxes
- ▶ contract creation boxes
- ▶ contract grid boxes

The RTF format begins with `{\rtf` (with a blank space at the end), and ends with `}`.

Example:



# RTF formatting instructions

<code>\tab</code>	tabulator
<code>\line</code>	new line
<code>\ql</code>	aligned to the left
<code>\qc</code>	centred
<code>\qr</code>	aligned to the right
<code>\strike</code>	crossed through
<code>\ul(\ul0)</code>	underlined (not underlined)
<code>\par</code>	new paragraph
<code>\bullet</code>	thick dot (for lists)
<code>\b (\b0)</code>	bold (not bold any more)
<code>\i(\i0)</code>	italics (not italics any more)
<code>\sub</code>	subscript
<code>\super</code>	superscript
<code>\fsn</code>	font size in units of half a dot

# Conditional Formatting

The insertion of variables is carried out *before* the interpretation of RTF instructions. This make conditional formatting possible, as in the following example: when the BOLD variable is 1, “hallo” should be shown in boldface, otherwise it is shown in plain text.

```
<> {\rtf <BOLD|!text: 0="" ; 1="\b";> hallo}}
```



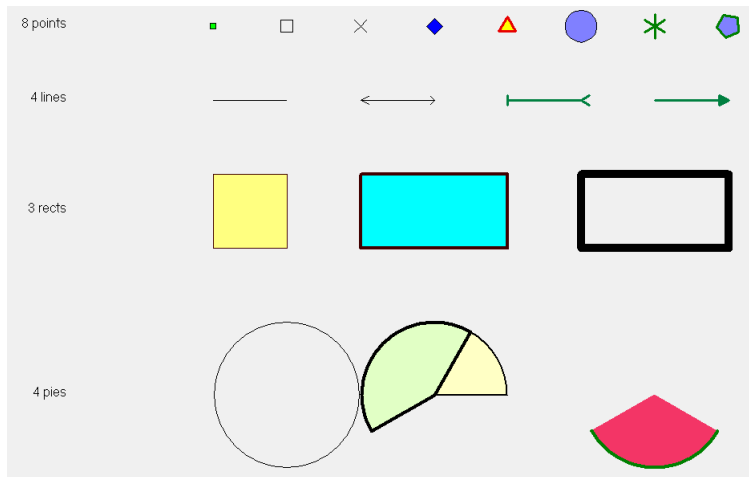
# Text Color

With RTF formatting, you have to define first the colors you are going to use, with the instruction `\colortbl`.

```
{\rtf {\colortbl;  
  \red0\green0\blue255;  
  \red255\green0\blue0;  
  \red0\green255\blue0;  
  \red255\green255\blue255;  
}  
\cf1 this is BLUE  
\cf2 this is RED  
\cf3 this is GREEN  
\cf4 this is WHITE  
}
```

# Plots and Vectorial Graphics

*See the z-Tree wiki*



Example: `plotitems.ztt`

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# Plot Box - I

- ▶ The Plot Box sets up a **coordinate system** and allows to display Plot Items.
- ▶ Plot items are drawn **sequentially**. So items more down in the list of items **can cover** items more up in the list.
- ▶ The Plot box is **opaque**. It covers all boxes below.
- ▶ The Plot box is a **Box**. It can be contained in Screens and Container Boxes. It can contain Plot Items.

# Plot Box - I

- ▶ The Plot Box sets up a **coordinate system** and allows to display Plot Items.
- ▶ Plot items are drawn **sequentially**. So items more down in the list of items **can cover** items more up in the list.
- ▶ The Plot box is **opaque**. It covers all boxes below.
- ▶ The Plot box is a **Box**. It can be contained in Screens and Container Boxes. It can contain Plot Items.

To create a new Plot Box, select Treatment→New Box→ New Plot Box

# Plot Box - II

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**Plot Box** [X]

Name  ☐ with Frame

Width [p/%]  Distance to the margin [p/%]  Adjustment of the remaining box

Height [p/%]  ☐ left ☐ top ☐ right

☐ bottom

Display condition

Horizontal margin  Vertical margin

Fill color

☒ Maintain aspect ratio

**x-axis**

☐ categorical ☒ linear ☐ logarithmic

left  -2

right  10

**y-axis**

☐ categorical ☒ linear ☐ logarithmic

top  0

bottom  10

Move pointer to

OK Cancel

Recruitment:  
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**plot box**

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# Plot items

- ▶ In a plot box different types of graphical elements (points, lines, rectangles,...) can be displayed. These elements are called **plot items**.
- ▶ They can be placed into the **coordinate system** that is set up in the plot box.
- ▶ The **position** of the plot items is thus defined with reference to this coordinate system.
- ▶ Furthermore, these elements have **features**, for instance the lines can be thicker or thinner and drawn in different colors.
- ▶ The size used to describe these features is always in screen **pixels**.



# Lines

To add a Line, select Treatment→Graphics→ New Line. This displays a **connection** between two points.

The 'Plot Line' dialog box is shown. It has a title bar with a close button. Inside, there's a 'Name' field. Below it are two columns for 'Point 1' and 'Point 2', each with 'x' and 'y' sub-labels. The 'x' fields contain '1' and '2', and the 'y' fields contain '2'. There are 'OK' and 'Cancel' buttons to the right. Below the points are 'arrow size' and 'arrow width' fields. A checkbox labeled 'Arrow is closed' is present. Below that is a 'line color' field showing 'rgb(0.00,0.00,0.00)' and a 'line width' field showing '1'. At the bottom is a 'Display condition' field.

It can be a straight line or an one-sided or two-sided arrow. Plot lines are plot items. They can be **contained**

- ▶ in plot boxes
- ▶ and in plot graphs.

**Arrow size:** Size of the arrow in the direction of the line. The arrow size can be negative, in which case the arrow points from the outside to the line.

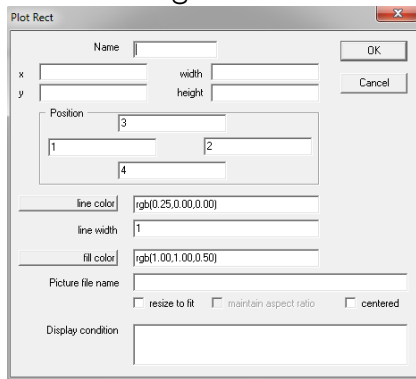
**Arrow width:** Total size of the arrow orthogonal to direction of the line.

**Arrow is closed:** If not checked: arrow consists of two lines. If checked, the arrow is a filled triangle.



# Rectangles

To add a Rectangle, select Treatment→Graphics→  
New Rectangle.



Plot rectangles are  
plot items. They can  
be **contained**

- ▶ in plot boxes
- ▶ and in plot  
graphs.

x/y: coordinates of the center of the rectangle.

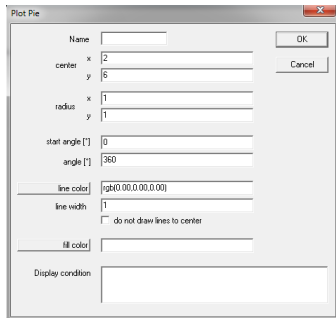
width/height and position: defined with respect to  
the coordinate system that is set up in the plot box.

# Pies

To add a Pie, select Treatment→Graphics→New Pie.

Plot pies are plot items. They can be **contained**

- ▶ in plot boxes
- ▶ and in plot graphs.



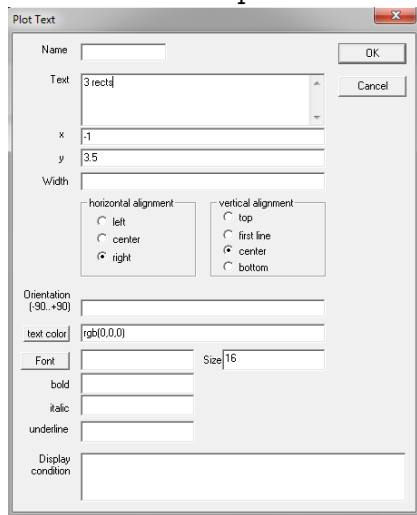
start angle: Angle where the segment starts, measured in degrees (the full circle has 360). The angle is measured from the x-axis in counter clockwise direction.

angle: Size of the segment in degrees. For a full circle, you enter 360. The segment goes in counter clockwise direction from the start angle.

**Example:** spin\_the\_wheel.ztt: a rotating pie, representing the outcome of a lottery.

# Text

To add a text to a plot, select  
Treatment→Graphics→ New Text.



Plot texts are plot  
items. They can be  
**contained**

- ▶ in plot boxes
- ▶ and in plot  
graphs.

x/y: position of the  
text.

Horizontal/vertical  
alignment: Defines  
which border of the text  
is determined by the  
text position.

Orientation: Does not yet work.

# Graphs

To add a text to a plot, select

Treatment→Graphics→ New Plot Graph.

- ▶ The plot graph is used to display **polygons or series of data**.
- ▶ The plot graph displays series of **records in a table**. Plot items that are placed into the plot graph are drawn **for every record** and the variables used in these items are evaluated in this record.

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# Graphs

To add a text to a plot, select

Treatment→Graphics→ New Plot Graph.

- ▶ The plot graph is used to display **polygons or series of data**.
- ▶ The plot graph displays series of **records in a table**. Plot items that are placed into the plot graph are drawn **for every record** and the variables used in these items are evaluated in this record.
- ▶ Plot graphs **can be nested**, i.e., placed into each other. If they are nested the data from different records can be accessed with the scope operator.
- ▶ Plot graphs are plot items: they can be contained in plot boxes and in plot graphs.
- ▶ They can contain plot items.

**Example:** boxplotdemo.ztt

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# Graphs: example

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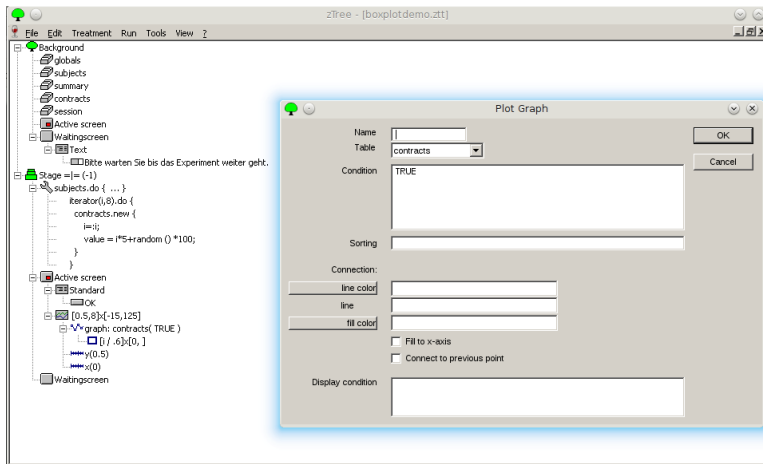
plot box

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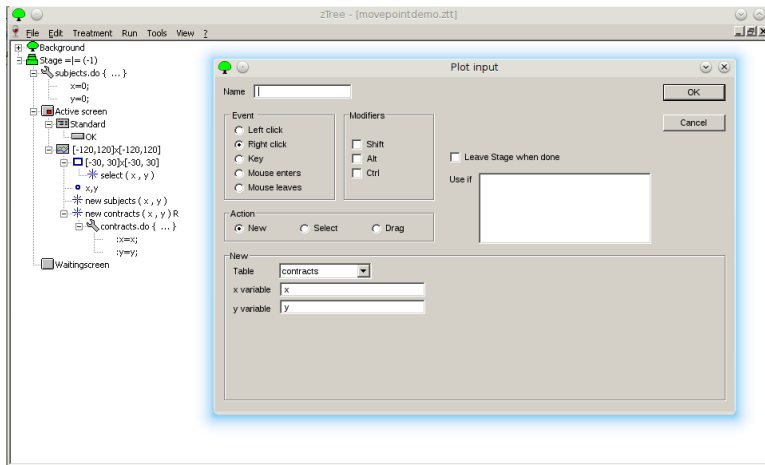
# Plot inputs

To add a text to a plot, select  
Treatment→Graphics→ New Plot Input.

- ▶ Plot inputs can be placed into plot boxes and plot items.
- ▶ They can contain checkers and programs.
- ▶ With plot input item, you define how **subjects interact** in a plot box;
- ▶ Subjects can **click** at a new position, they can **select** one of several objects on the screen, and they can even **drag** objects around.

**Example:** movepointdemo.ztt

# Plot inputs: example



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# Multimedia - I

See the z-Tree wiki. The multimedia box can contain **images**, **movies** or **sounds**.

- ▶ The content, i.e. the image, movie or sound of the multimedia box is stored in an **external file**.
- ▶ This file must be accessible at the client's computer.
- ▶ The best way to achieve this is to put the files **on a server share** and map this share to the same drive letter on each of the client computers.
- ▶ Movies and sound are played as long as the box is visible. This allows to **turn them on and off**.

# Multimedia - II

The following **formats** should work on a standard installation:

- ▶ Image: jpg, gif, png, bmp.
- ▶ Movie: mpg, avi.
- ▶ Sound: wav, mp3.

The multimedia box is a Box. It can be contained in Screens and Container Boxes. It cannot contain other elements.

# Multimedia Box

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**Multimedia Box** [X]

Name  ☒ With frame

Width [p/%]  Distance to the margin [p/%]  Adjustment of the remaining box

Height [p/%]    ☐ left ☐ top ☐ right

☐ bottom

Display condition

File name

**Resizing options**

☐ Enlarge to fit  
☐ Shrink to fit  
☐ Maintain aspect ratio

**Video/Sound options**

Volume [0..100]

Start after [sec.]

☐ Do repeat  
☒ Allow user control  
☐ Rewind

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# Slide-show - I

From z-Tree version 3.3.0 it is possible to include in the treatment a slide-show, i.e. a **set of pictures displayed in sequence**.

**Example:** slideshow.ztt

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# Slide-show - I

From z-Tree version 3.3.0 it is possible to include in the treatment a slide-show, i.e. a **set of pictures displayed in sequence**.

**Example:** slideshow.ztt

To create a slide-show, the following **procedure** should be followed:

1. in the Background, create a new Table and name it “slides” (or as you like)
2. in the Background, create a new Program, running on the globals table.
  - ▶ In this program, write:  
`slides.new{}`
  - ▶ this simply generates a new empty record in the table “slides”.

# Slide-show - II

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3. in the Active Screen of a stage, click on  
Treatment → New Box → New Slide Show.

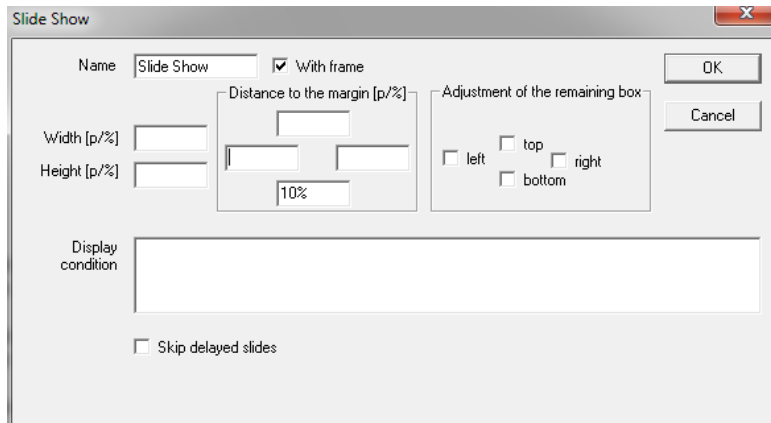
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The image shows a 'Slide Show' dialog box with the following fields and options:

- Name:** A text field containing 'Slide Show'.
- With frame:** A checked checkbox.
- Width [p/%]:** An empty text field.
- Height [p/%]:** An empty text field.
- Distance to the margin [p/%]:** A group box containing four empty text fields and a '10%' value in a field at the bottom.
- Adjustment of the remaining box:** A group box containing four checkboxes: 'left', 'top', 'right', and 'bottom', all of which are currently unchecked.
- Display condition:** A large empty text area.
- Skip delayed slides:** An unchecked checkbox.
- Buttons:** 'OK' and 'Cancel' buttons are located on the right side.

# Slide-show - III

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4. Within the slide-show, click on Treatment → Slide show → New Slide Sequence.

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Dialog

Name: Slide Sequence

Table: slides

Condition: TRUE

Sorting:

Display Condition:

Repeated: 0 (sequence is shown 1 + value entered)

OK

Cancel

# Slide-show - IV

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5. Within the slide sequence, click on Treatment → Slide show → New Slide.

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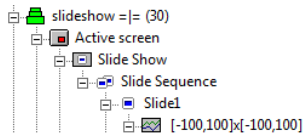
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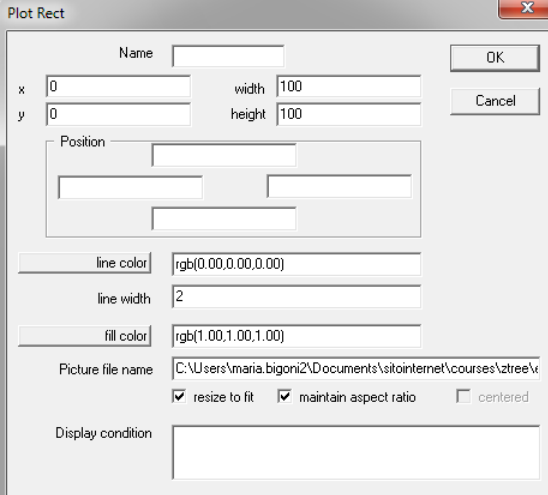
6. Within the slide, click on Treatment → New box → New plot box.





# Slide-show - V

7. Within the plot-box, click on Treatment → Graphics → New rect.



The image shows a 'Plot Rect' dialog box with the following fields and options:

- Name:** A text input field.
- x:** A text input field with the value '0'.
- y:** A text input field with the value '0'.
- width:** A text input field with the value '100'.
- height:** A text input field with the value '100'.
- Position:** A section containing three text input fields for x, y, and width/height coordinates.
- line color:** A text input field with the value 'rgb(0.00,0.00,0.00)'.
- line width:** A text input field with the value '2'.
- fill color:** A text input field with the value 'rgb(1.00,1.00,1.00)'.
- Picture file name:** A text input field with the value 'C:\Users\maria.bigoni2\Documents\sitointernet\courses\ztree\...'.
- resize to fit:** A checked checkbox.
- maintain aspect ratio:** A checked checkbox.
- centered:** An unchecked checkbox.
- Display condition:** A large text input field.

Buttons: OK, Cancel.

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# External programs

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From z-Tree version 3.3.0 it is possible to call external programs, from z-Tree or from z-Leaf.

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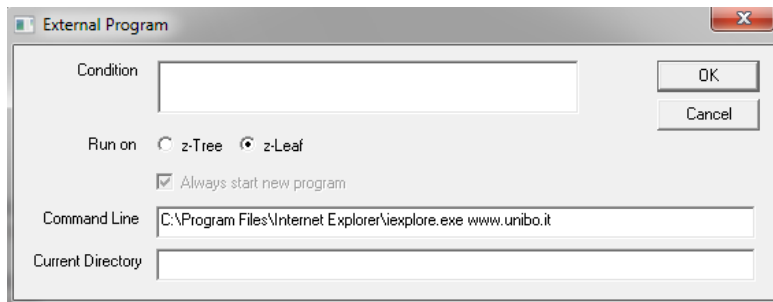
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In the Background, or within a stage, click on  
Treatment → New External Program



The screenshot shows a Windows-style dialog box titled "External Program". It contains the following fields and controls:

- Condition:** An empty text input field.
- Run on:** Two radio buttons, "z-Tree" and "z-Leaf". The "z-Leaf" button is selected.
- Always start new program:** A checked checkbox.
- Command Line:** A text input field containing the command "C:\Program Files\Internet Explorer\iexplore.exe www.unibo.it".
- Current Directory:** An empty text input field.
- Buttons:** "OK" and "Cancel" buttons are located on the right side of the dialog.