YMaze

A Whisker client

---

by Mike Aitken

www.whiskercontrol.com

Distributed by Campden Instruments Ltd (www.campden-inst.com)

YMaze

Printed: March 2024 in Cambridge, UK

Creator (Whisker)

Rudolf N. Cardinal

Design and Programming (Whisker)

Rudolf N. Cardinal

Michael R. F. Aitken

Legal Advisor (CUTS)

Adjoa D. Tamakloe

Sales (Campden)

Julie Gill

Contacting the authors:

For information about Whisker, visit http://www.whiskercontrol.com/.

If you have sales enquiries about Whisker, contact Campden Instruments Ltd at http://www.campden-inst.com/.

If you have comments or technical enquiries that cannot be answered by the sales team, contact the authors:

Rudolf Cardinal (rudolf@pobox.com)
Mike Aitken (m.aitken@psychol.cam.ac.uk)

Table of Contents

Foreword

WARNING

Whisker is a system designed for research purposes only, and should never be used to control medical apparatus or other devices that could endanger human life.

DISCLAIMER

The authors, copyright holders, and distributors disclaim all responsibility for any adverse effects that may occur as a result of a user disregarding the above warning.

1 Y-Maze

1.1 About Y-Maze

Purpose

A simple task for the Med Associates Y-Maze

Supplied with:
- VB source project to illustrate VB programming techniques.
- Installer for the task, and required controls
- Task manual (this file).

Software requirements

Requires WhiskerServer v 2.4 or greater, configured to control the following devices.
Also requires (these will be installed if not present on the machine):
- Whisker SDK version 2.1 or greater.
- Microsoft CommonDialog Control (as supplied with VisualBasic 6.0).
- Microsoft ADO (ActiveX Data Objects) v2.5 or above (as supplied with Windows 2000 or later).

Data storage

- Text summary output to disk.
- Detailed storage into .csv format, compatible with spreadsheet packages.
- Database output to ODBC database (example MS Access database supplied).

Author

Task design by Rutsuko Ito & Mike Aitken.
Code by Mike Aitken (m.aitken@psychol.cam.ac.uk).

Copyright

1.2 Required devices

The program requires to claim devices in a given group name, with a set of device names as listed below in capitals:

```
# Box 1 definition

line   0      box1   EntranceLocoBeam
line   1      box1   CentreLocoBeam
line   2      box1   FarLocoBeam
line   3      box1   NosepokeLeft
line   4      box1   NosepokeCentre
line   5      box1   NosepokeRight

line   24     box1   CSLightLeft
line   25     box1   CSLightCentre
line   26     box1   CSLightRight
line   27     box1   SyringePumpLeft
```

```
line   28      box1   SyringePumpCentre
line   29      box1   SyringePumpRight
line   29      box1   ClickerLeft
line   30      box1   ClickerCentre
line   31      box1   ClickerRight
line   32      box1   Tone
line   33      box1   Houselight

# Box 2 definition

line   6       box2   EntranceLocoBeam
line   7       box2   CentreLocoBeam
line   8       box2   FarLocoBeam
line   9       box2   NosepokeLeft
line   10      box2   NosepokeCentre
line   11      box2   NosepokeRight

line   34      box2   CSLightLeft
line   35      box2   CSLightCentre
line   36      box2   CSLightRight
line   37      box2   SyringePumpLeft
line   38      box2   SyringePumpCentre
line   39      box2   SyringePumpRight
line   40      box2   ClickerLeft
line   41      box2   ClickerCentre
line   42      box2   ClickerRight
line   43      box2   Tone
line   44      box2   Houselight

# Box 3 definition

line   12      box3   EntranceLocoBeam
line   13      box3   CentreLocoBeam
line   14      box3   FarLocoBeam
line   15      box3   NosepokeLeft
line   16      box3   NosepokeCentre
line   17      box3   NosepokeRight

line   45      box3   CSLightLeft
line   46      box3   CSLightCentre
line   47      box3   CSLightRight
line   48      box3   SyringePumpLeft
line   49      box3   SyringePumpCentre
line   50      box3   SyringePumpRight
line   51      box3   ClickerLeft
line   52      box3   ClickerCentre
line   53      box3   ClickerRight
line   54      box3   Tone
line   55      box3   Houselight
```

Please ensure that these devices are available and listed in the device definition file in use by the server.

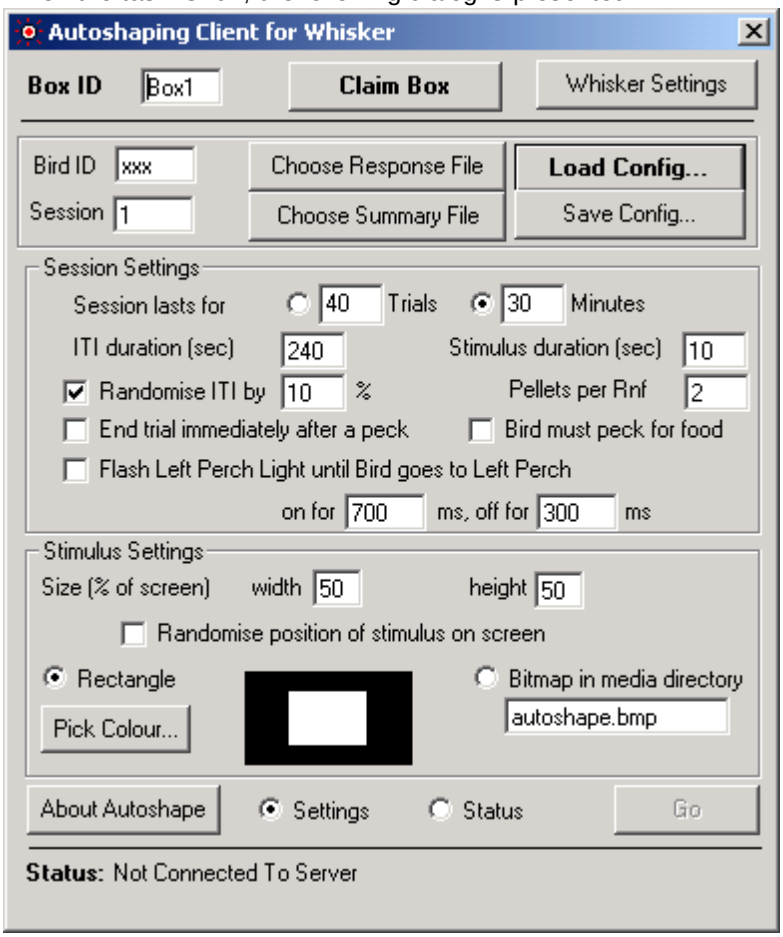
1.3 Using the task

Installation
The installer will install all the files needed to run the task.

Confiuring the Database
The installer will install a default database. This (or a copy) must be configured with a Data Source Name via the ODBC control panel.

Configuring the task
A configuration can be loaded and saved for each subject, to allow rapid setup.

When the task is run, the following dialog is presented:



The task is configured by four groups of controls on the dialog:

BoxID - this must match the group name for the box in the device definition file. See Devices.
ClaimBox button. Click to connect to the server, and claim the box specified. This will illuminate the houselight.
WhiskerSettings button. Click to view or change the settings relating to the WhiskerServer. There is no need to use this button unless you are running the task and server on different computers.

Go button Click this button to start the task.
About Autoshape Click this button to display the 'About box' for the Autoshaping task.
Settings / Status Radio buttons Toggle between viewing the settings and status (on-line data) for the task.

Configuration controls:
BirdID - the name of the subject.
Session - the session number. If you load a saved session, the session number will be automatically incremented by one.
The bird ID and session number is used to generate default filenames of the form *birdID_sessnum.*csv and *birdID_sessnum.*txt. If you wish to specify different filenames, you can do so with the **Choose response file** and **Choose summary file** buttons.

Load Config... Click this button to load a previously saved configuration.
Save Config... Click this button to save a new configuration to disk.
Once a configuration file is loaded or saved, it will be automatically updated when the session starts.

Session settings:
Use these controls to specify the settings for the duration, number and behaviour of the trials. See Task Details for more information.

Stimulus settings:
Use these controls to specify the appearance of the autoshaping stimulus.

1.4 Task details

Procedure
As soon as the box is claimed from the main dialog, the houselight is illuminated, and remains illuminated throughout the experiment.

Task starts when the 'Go' button is clicked, and begins with an ITI. During the ITI, the screen is blank. The duration of the ITI is specified, and can be randomized (+/- a random amount, up to a specified % of the total duration).

At end of the ITI, the stimulus is presented as soon as the bird moves to the front (left) perch. If the bird is not on the front perch, then the perchlight will flash to encourage birds to move there, providing the flashing option is selected. Once the subject sits on the front perch, the perch light ceases flashing, and the stimulus is presented.

The stimulus will appears in the centre of the screen, or in a random location on the screen, depending on the option selected. The stimulus is either a rectangle (of configurable colour), or a bitmap selected from the media directory. The size of the stimulus is specified as a proportion of the screen. The stimulus is presented either for a fixed duration, or optionally until a peck to the stimulus is detected (to a maximum duration).

A typical stimulus may look like this:

Screenshot of a stimulus presentation (white stimulus, black background). The blue border has been added later so you can see the edges of the screen - it's not present on screen during the task.

The offset of the stimulus is followed by a configurable number of pulses on the feeder line, unless the option is specified to only present reinforcement if the subject pecked the stimulus during the presentation. After reinforcement, the trial is complete, and another ITI begins.

The task finishes after either a specified number of trials are complete, or after a specified interval.

Data

A summary of responding is presented on the main window during the session. This summary data is stored, in text form, to a text file in the 'Summary Files' folder.

A more detailed summary is also saved, in CSV format (compatible with spreadsheet programs) in the 'Response Files' folder.

Index

- Y -