

YMaze

A Whisker client

by Mike Aitken

www.whiskercontrol.com

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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).

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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.

Configuring 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

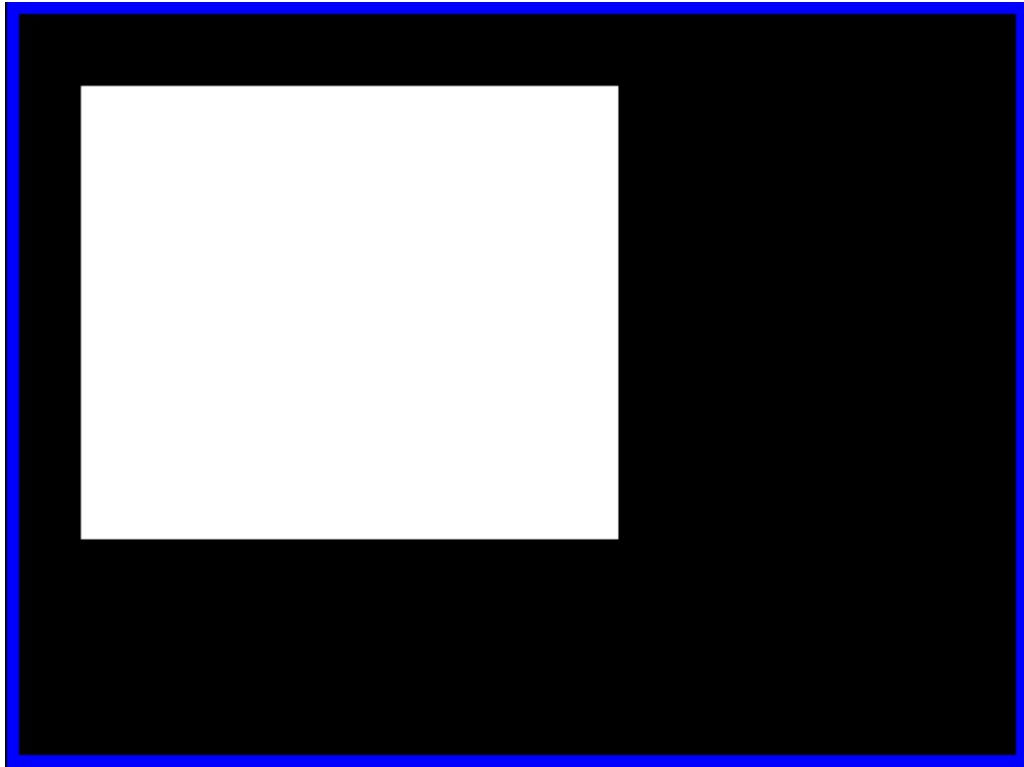
As soon as the box is claimed from the main dialog, the houselight is illuminated, and remains illuminated throughout the experiment.

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 appear 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.

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