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| HKUPSY |
| Experiment1 |
| User Requirements |

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| Wayne  12/16/2010 |

# User Requirements

In this section, we will discuss the details of all total fifteen user requirements.

Req #

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| Description | The program should support two modes, one is for the normal experiment, and the other is for the practice. If not mentioned explicitly, all following requirements are for the normal experiment mode. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | The whole experiment is composite of several sections, and each section is composite of several trails. The number of sections and number of trials in one section can be set in the configuration by the researcher. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | Between each two trials, there should be a black scene to separate them. On the black scene, there should be a sentence”Press the Space Bar to continue”. If the two trials are the separation of two sections, there should be a sentence showing the progress of the experiment in terms of the section. The next trial will be started after the subject presses the spacebar. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | If the last section is finished, show “End of the experiment”. The program should exit after spacebar is pressed. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | In each trial, the system will choose one object randomly. Show it on the left part of the screen in 3D-view, and right part of the screen in 2D-view. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | 3D-view uses perspective projection, and the location, angle, and other properties of the camera are decided in the configuration. The 3D-view object should rotate by its y-axis back and forth continually. The speed of rotation is set in the configuration. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | For 2D-view, the projection mode is either perspective or orthogonal, which is decided in the configuration. The camera is at the top of the object, which is from y-axis. The 2D-view is not rotating, but the shape may be distorted by such as using different aspect ratio, different radius and so on. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | There are seven parameters for an object. They are:  1. Object number, which is used to indicate which object is in use.  2. Slant, indicating where we look at the object in 3D-view, and it may have three possible choices.  3. Speed, indicating the rotation speed of the object by its y-axis in 3D-view, and it may have three possible choices.  4. Height, the height of the object, the height should not be small. The height is in a range specified by the configuration.  5. Tile, indicating the degree of the tilt of the object in 3D-view comparing to the x-z plane. This value should be small.  6. A parameter to indicate how we distort the object in 2D-view, such as a possible range of aspect ratios.  7. A parameter to indicate whether we use perspective projection or orthogonal projection in 2D-view. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | In each trial after object is displayed on the screen in both 3D and 2D view, subject can use up-arrow key and down-arrow key to adjust the shape, such as aspect ratio or radius, of the object in 2D view. Subject should press spacebar after he/she thinks the object in 2D-view corresponds to the object in 3D-view. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

|  |  |
| --- | --- |
| Description | The system should record as much information as possible after each trial, including trial number, object number, original parameters for the object, and the parameters of the object after the subject tunes it. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | The system should be able to generate the output filename automatically using experiment date, subject id and other information |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | The system does not need to record information after each trial in practice mode. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

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| Description | In practice mode, show the correct 2D-view of the object in each trial after the subject confirms his/her adjustment to the object. The correct projection should overlap with the one the subject adjusted and should use different line style or color so that the object can learn from the error. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

|  |  |
| --- | --- |
| Description | The system should record as much information as possible after each trial, including trial number, object number, original parameters for the object, and the parameters of the object after the subject tunes it. |
| Rationale |  |
| Acceptance Criterion |  |

Req #

|  |  |
| --- | --- |
| Description | Researcher should be able to configure the experiment before it starts. Researcher can decide number of sections, number of trials in one section, whether using orthogonal projection or perspective projection or both in 2D-views, and so on. |
| Rationale |  |
| Acceptance Criterion |  |