|  |  |
| --- | --- |
| **Accuracy Value** | **Timing**  < -300ms = INACTIVE |
| INACTIVE | < -300ms  -300ms = ALMOST |
| ALMOST | -300ms  -210ms = GOOD |
| GOOD | -210ms  -150ms = GREAT |
| GREAT | -150ms  -90ms = PERFECT |
| PERFECT | -90ms  -30ms = MARVELOUS |
| MARVELOUS | -30ms  40ms = PERFECT |
| PERFECT | 40ms  120ms = GREAT  200ms = GOOD |
| GREAT | 120ms |
| GOOD | 200ms  280ms = ALMOST |
| ALMOST | 280ms  > 400ms = MISS |
| MISS | 400ms |

|  |  |  |
| --- | --- | --- |
| Design | User Responsiveness | Gameplay Experience |
| #1: Falling Notes | Great | Bad |
| #2: Spreading Notes | Great | Great |
| #3: Focusing Notes | Good | Good |
| #4: Grid | Poor | Great |
| #5: Sliding Hitbox | Good | Good |
| #6: Expanding Hitbox | Poor | Poor |
| #7: Collapsing Hitbox | Bad | Bad |
| #8: Appearing | Poor | Great |

Game start

Mode select screen

User selects 1 of 8 Modes

Gameplay screen

Song done?

Feedback screen

Get user feedback

Score updating

Data tracking

YES

NO

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Rhythm Game** | **Layout** | **Notes** | **Hitbox** | **Movement** | **Design** |
| **Dance Dance Revolution** | 4/6 columns | 4/6 arrows | Box at top | Notes scroll up | Falling Notes |
| **In The Groove** | 4 columns | 4 arrows | Box at bottom | Notes scroll up | Falling Notes |
| **Pump It Up NX** | 5 columns | 4 arrows + middle stomp | Box at bottom | Notes scroll up | Falling Notes |
| **Dance Maniax** | 4 columns | 4 motion sensors | Bar at top | Notes scroll up | Falling Notes |
| **Beatmania IIDX** | 6/8 columns | 5/7 bars + 1 scratch | Bar at bottom | Notes fall down | Falling Notes |
| **Pop ‘N Music** | 9 columns | 9 buttons | Bar at bottom | Notes fall down | Falling Notes |
| **DJMax** | 4/5/6/8 columns | 4/5/6/8 bars | Bar at bottom | Notes fall down | Falling Notes |
| **GuitarFreaks** | 3 columns | 3 tabs | Bar at bottom | Notes fall down | Falling Notes |
| **Drummania** | 6 columns | 5 drum + 1 foot pedal | Bar at bottom | Notes fall down | Falling Notes |
| **Keyboardmania** | 24 columns | 24 keys | Bar at bottom | Notes fall down | Falling Notes |
| **Guitar Hero** | 5 columns | 5 tabs | Bar at bottom | Notes approach from distance | Spreading Notes |
| **DJ Hero** | 3 columns | 3 buttons on scratch | Bar at bottom | Notes approach from distance | Spreading Notes |
| **Rockband** | 5 columns | 5 tabs or 4 drum + 1 foot pedal | Bar at bottom | Notes approach from distance | Spreading Notes |
| **Taiko no Tatsujin** | 1 row | 2 drum parts | Box on side | Notes stream to single point | Streaming Notes |
| **The iDOLM@STER** | 1 row | 6 buttons | Box on side | Notes stream to single point | Streaming Notes |
| **Hatsune Miku: Project DIVA** | Fullscreen | 8 buttons | Sequence of hitboxes | Notes focus to corresponding hitbox | Focusing Notes |
| **Gitaroo Man Lives!** | Fullscreen | 4 buttons | Box in centre | Notes focus to single point | Focusing Notes |
| **DJMax Technika** | 3/4 rows | 3/4 buttons | Moving bar | Hitbox slides across rows | Sliding Hitbox |
| **Parappa The Rapper** | 1 row | 4 buttons | Cursor | Cursor slides across row | Sliding Cursor |
| **Audition Online** | 1 row | 4 arrows | Cursor | Cursor slides across row | Sliding Cursor |
| **Osu! Tatakae! Ouendan** | Fullscreen | Anywhere buttons | Shrinking rings | Rings shrink around buttons | Appearing |
| **jubeat** | Grid | 16 buttons | Collapsing box | Box solid fills grid | Grid |

|  |  |  |  |
| --- | --- | --- | --- |
| Moving Notes, Fixed Hitboxes | | Moving Hitbox, Fixed Notes | |
| **Diagram** | **Description** | **Diagram** | **Description** |
|  | **Design #1:**  **Falling Notes**  **Moving notes** fall toward **fixed hitboxes** from **top to bottom** |  | **Design #5:**  **Sliding Hitbox**  **Moving hitbox** fall toward **fixed notes** appearing from **top to bottom** |
|  | **Design #2:**  **Spreading Notes**  **Moving notes** slide toward **fixed hitboxes** from **centre to corners** |  | **Design #6: Expanding Hitbox**  **Expanding hitbox** grow toward **fixed notes** from **centre to corners** |
|  | **Design #3:**  **Focusing Notes**  **Moving notes** slide toward **fixed hitboxes** from **corners to centre** |  | **Design #7:**  **Collapsing Hitbox**  **Collapsing hitbox** shink toward **fixed notes** from **corners to centre** |
|  | **Design #4:**  **Grid**  **Expanding notes** grow in **fixed hitboxes** at **grid points** |  | **Design #8:**  **Appearing**  **Collapsing hitboxes** shrink around **fixed notes** appearing at **grid points** |