clear\_board

|  |  |  |
| --- | --- | --- |
| Num\_rows | Num\_cols | Return value |
| 1 | 3 | -1 |
| 3 | 1 | -1 |
| 2 | 3 | 0 |
| 3 | 2 | 0 |
| -2 | 3 | -1 |
| 3 | -2 | -1 |

place

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| num\_rows | num\_cols | row | col | val | Return val |
| 1 | 5 | 5 | 4 | -1 | -1 |
| 7 | 1 | 5 | 4 | -1 | -1 |
| -9 | 5 | 5 | 4 | -1 | -1 |
| 7 | -9 | 5 | 4 | -1 | -1 |
| 7 | 5 | -1 | 4 | -1 | -1 |
| 7 | 5 | 5 | -1 | -1 | -1 |
| 7 | 5 | 7 | 4 | -1 | -1 |
| 7 | 5 | 5 | 5 | -1 | -1 |
| 7 | 5 | 5 | 4 | 0 | -1 |
| 7 | 5 | 5 | 4 | 6 | -1 |
| 7 | 5 | 5 | 4 | -1 | 0 |
| 7 | 5 | 5 | 4 | 256 | 0 |
| 7 | 5 | 5 | 4 | 16384 | 0 |

clear\_board -1 -1 0 0 -1 -1

place -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 0 0 0

start\_game -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 0 0 0 0 0 0 0 0 0

merge\_row 6 6 6 6 0 0 3 3 4 4 3 3 4 4 4 4 2 2 -1 -1 -1 -1 -1 -1 -1 -1

merge\_col 4 4 3 3 3 3 1 1 1 1 2 2 2 2 2 2 -1 -1 -1 -1 -1 -1 -1 -1

// shift vaues are wrong there is another test file which test these.

shift\_row 0 0 10 10 7 2 0 0 3 0 3 0 -1 -1 -1 -1 -1 -1

shift\_col 0 0 0 12 0 12 3 0 3 3 0 -1 -1 -1 -1 -1 -1

check\_state -1 0 1

user\_move 00 00 00 00 01 01

Start\_game

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Num\_rows | Num\_cols | R1 | C1 | R2 | C2 | Return val |
| 1 | 5 | 5 | 0 | 6 | 4 | -1 |
| 7 | 1 | 5 | 0 | 6 | 4 | -1 |
| -4 | 5 | 5 | 0 | 6 | 4 | -1 |
| 7 | -4 | 5 | 0 | 6 | 4 | -1 |
| 7 | 5 | -1 | 0 | 6 | 4 | -1 |
| 7 | 5 | 5 | -1 | 6 | 4 | -1 |
| 7 | 5 | 5 | 0 | -1 | 4 | -1 |
| 7 | 5 | 5 | 0 | 6 | -1 | -1 |
| 7 | 5 | 7 | 0 | 6 | 4 | -1 |
| 7 | 5 | 5 | 0 | 7 | 4 | -1 |
| 7 | 5 | 5 | 5 | 6 | 4 | -1 |
| 7 | 5 | 5 | 0 | 6 | 5 | -1 |
| 7 | 5 | 5 | 0 | 6 | 4 | 0 |
| 7 | 5 | 0 | 0 | 6 | 4 | 0 |
| 7 | 5 | 5 | 0 | 6 | 4 | 0 |
| 7 | 5 | 5 | 0 | 0 | 4 | 0 |
| 7 | 5 | 5 | 0 | 6 | 0 | 0 |
| 7 | 5 | 6 | 0 | 6 | 4 | 0 |
| 7 | 5 | 5 | 0 | 6 | 4 | 0 |
| 7 | 5 | 5 | 4 | 6 | 4 | 0 |
| 7 | 5 | 5 | 0 | 6 | 4 | 0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Board 1 – Values here will never change. | | | | | |
| 4 | 2 | 4 | 2 | 4 | 2 |
| 2 | 4 | 2 | 4 | 2 | 4 |
| 4 | 2 | 4 | 2 | 4 | 2 |
| 2 | 4 | 2 | 4 | 2 | 4 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Board 2 - Initial | | | | | | |
| 4 | 2 | 2 |  | 4 |  |  |
|  | 4 |  |  | 2 |  |  |
|  | 4 | 2 |  | 2 | 4 |  |
|  |  |  |  |  | 4 |  |
|  |  |  |  |  |  |  |
|  | 4 | 2 |  | 2 | 4 |  |
|  | 4 | 2 |  |  | 4 |  |
|  |  | 4 |  | 2 | 2 | 4 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Board 2 – after merge row | | | | | | |
| 4 | 4 |  |  | 4 |  |  |
|  | 4 |  |  | 2 |  |  |
|  | 4 | 2 |  | 2 | 4 |  |
|  |  |  |  |  | 4 |  |
|  |  |  |  |  |  |  |
|  | 4 | 2 |  | 2 | 4 |  |
|  | 4 | 2 |  |  | 4 |  |
|  |  | 4 |  |  | 4 | 4 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Board 2 – after merge col | | | | | | |
| 4 | 4 |  |  | 4 |  |  |
|  |  |  |  | 4 |  |  |
|  | 8 | 2 |  |  | 8 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  | 2 | 8 |  |
|  | 8 | 4 |  |  |  |  |
|  |  | 4 |  |  | 4 | 4 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Board 2 – after shift row | | | | | | |
|  |  |  |  | 4 | 4 | 4 |
|  | 8 |  |  | 4 |  |  |
|  |  |  |  | 8 | 2 | 8 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  | 2 | 4 |  |
| 8 | 4 |  |  |  |  |  |
| 4 | 4 | 4 |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Board 3 - Initial | | | | | |
| 4 | 2 | 2 | 4 | 2 | 2 |
| 2 | 2 | 4 | 2 | 2 | 4 |
| 4 | 2 | 2 | 4 | 2 | 2 |
| 2 | 2 | 4 | 2 | 2 | 4 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Board 3 – after merge row | | | | | |
| 4 | 4 |  | 4 | 4 |  |
| 4 |  | 4 | 4 |  | 4 |
| 4 |  | 4 | 4 |  | 4 |
|  | 4 | 4 |  | 4 | 4 |

|  |  |  |  |
| --- | --- | --- | --- |
| Board 4 | | | |
| 2 | 2 | 2 | 2 |
| 2 | 2 | 2 | 2 |
|  |  |  | 4 |
|  |  |  | 4 |

|  |  |  |  |
| --- | --- | --- | --- |
| Board 4 – after merge row | | | |
| 4 |  | 4 |  |
|  | 4 |  | 4 |
|  |  |  | 4 |
|  |  |  | 4 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Board 5 - Initial | | | | | | | | |
| 16 | 32 | 4 | 4 | 4 | 4 | 4 | 16 | 32 |
| 16 | 32 | 4 | 4 | 4 | 4 | 4 | 16 | 32 |
| 32 | 16 | 4 | 4 | 4 | 4 | 4 | 32 | 16 |
| 32 | 16 | 4 | 4 | 4 | 4 | 4 | 32 | 16 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Board 5 – after merge col | | | | | | | | |
|  |  | 4 |  | 4 | 8 | 4 | 32 | 64 |
| 32 | 64 | 4 | 8 | 4 |  | 4 |  |  |
|  |  | 4 |  | 4 | 8 | 4 | 64 | 32 |
| 64 | 32 | 4 | 8 | 4 |  | 4 |  |  |