API - Tower of Hanoi Game

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| Function Names | Parameters Names (Types) | Returned Types | Description | Located Files |
| --- | --- | --- | --- | --- |
| Disk.\_\_init\_\_ | self (Disk)  size (int) |  | Initialize a Disk object with size. | Models/disk\_model.py |
| Disk.\_\_eq\_\_ | self (Disk)  other (Disk | Any) | bool | Return whether the Disk self is equivalent to other in terms of object type and size. | Models/disk\_model.py |
| Disk.\_\_str\_\_ | self (Disk) | str | Return whether the Disk self is equivalent to other in terms of object type and size. | Models/disk\_model.py |
| MoveSequence.\_\_init\_\_ | self (MoveSequence)  moves (list[tuple[int]]) |  | Initialize a MoveSequence object with moves if applicable, or an empty list as the default moves. | Models/move\_sequence\_model.py |
| MoveSequence.get\_move | self (MoveSequence)  i (int) | tuple[int] | Return the move at position i in this MoveSequence object starting from index 0. | Models/move\_sequence\_model.py |
| MoveSequence.move\_disk | self (MoveSequence)  source (int)  destination (int) |  | Add move by moving disk from the rod indexed source to the rod indexed destination to the MoveSequence self. | Models/move\_sequence\_model.py |
| MoveSequence.\_\_eq\_\_ | self (MoveSequence)  other (MoveSequence | Any) | bool | Return whether self is equivalent to other in terms of object type and its moves. | Models/move\_sequence\_model.py |
| MoveSequence.\_\_str\_\_ | self (MoveSequence) | str | Display the moves of this MoveSequence self. | Models/move\_sequence\_model.py |
| ToHG.\_\_init\_\_ | self (ToHG)  rod\_num (int)  disk\_num (int) |  | Initialize a ToHG object with number of rods being rod\_num and number of disks being disk\_num. | Models/tohg\_model.py |
| ToHG.get\_move\_seq | self (ToHG) | MoveSequence | Return the move sequence of this ToHG object. | Models/tohg\_model.py |
| ToHG.get\_number\_of\_disks | self (ToHG) | int | Return number of disks of ToHG self. | Models/tohg\_model.py |
| ToHG.\_get\_rod\_at | self (ToHG)  rod\_index (int)  disk\_at (int) | Disk|None | Return the Disk object at disk\_at position of rod\_index rod counting from the bottom. | Models/tohg\_model.py |
| ToHG.number\_of\_moves | self (ToHG) | int | Return number of moves of this ToHG self. | Models/tohg\_model.py |
| ToHG.move | self (ToHG)  origin (int)  dest (int) |  | Add move to ToHG self. | Models/tohg\_model.py |
| ToHG.get\_disk\_location | self (ToHG)  disk (Disk) | int | Return the index of the rod which contains Disk disk. | Models/tohg\_model.py |
| ToHG.get\_top\_disk | self (ToHG)  rod\_index (int) | Disk | Return the top Disk of the indexed rods[rod\_index]. | Models/tohg\_model.py |
| ToHG.check\_success | self (ToHG) | bool | Return whether the ToHG self is successful (i.e. all rods except for the last rod is empty). | Models/tohg\_model.py |
| ToHG.\_\_eq\_\_ | self (ToHG)  other (ToHG|Any) | bool | Return whether ToHG self is equivalent to other in terms of object type, rods, and move\_seq. | Models/tohg\_model.py |
| ToHG.\_\_str\_\_ | self (ToHG) | str | Return the graphic representation of this ToHG self. | Models/tohg\_model.py |
| move | model (ToHG)  origin (int)  dest (int) |  | Apply move from origin to destination in model. | Controllers/console\_controller.py |
| tower\_of\_hanoi\_sol | model (ToHG)  disk\_num (int)  source (int)  auxiliary (int)  dest (int) |  | Return the solution for the Tower of Hanoi Game (explicitly indicate number of rods = 3). | Controllers/console\_controller.py |
| ConsoleController.\_\_init\_\_ | self (ConsoleController)  rod\_num (int)  disk\_num (int) |  | Initialize a new ConsoleController self. | Controllers/console\_controller.py |
| ConsoleController.play\_game | self (ConsoleController) |  | Play Console-based game. | Controllers/console\_controller.py |
| PlatformView.\_\_init\_\_ | self (PlatformView)  width (float)  click\_handler (function)  canvas (Canvas)  thickness (float)  x\_center (float)  y\_center (float) |  | Create a new PlatformView. | Controllers/gui\_viewables.py |
| PlatformView.place | self (PlatformView)  x\_center (float)  y\_center (float) |  | Place rectangular image of this disk/rod at (x\_center, y\_center). | Controllers/gui\_viewables.py |
| DiskView.\_\_init\_\_ | self (DiskView)  size (int)  width (float)  click\_handler (function)  canvas (Canvas)  thickness (float)  x\_center (float)  y\_center (float) |  | Initialize a new DiskView. | Controllers/gui\_viewables.py |
| DiskView.highlight | self (DiskView)  highlighting (bool) |  | Set this DiskView's colour to highlighted or not. | Controllers/gui\_viewables.py |
| RodView.\_\_init\_\_ | self (RodView)  width (float)  click\_handler (function)  canvas (Canvas)  thickness (float)  x\_center (float)  y\_center (float) |  | Create a new RodView. | Controllers/gui\_viewables.py |
| GUIController.\_\_init\_\_ | self (GUIController)  number\_of\_disks (int)  number\_of\_rods (int)  content\_width (float)  content\_height (float)  disk\_scale (float) |  | Initialize a new GUIView. | Controllers/gui\_controllers.py |
| GUIController.disk\_clicked | self (GUIController)  disk (DiskView) |  | React to disk being clicked: if not in the middle of blinking then select disk for moving, or for moving onto. | Controllers/gui\_controllers.py |
| GUIController.rod\_clicked | self (GUIController)  rod (RodView) |  | React to rod being clicked: if not in the middle of blinking then select disk for moving, or for moving onto. | Controllers/gui\_controllers.py |
| GUIController.select\_disk | self (GUIController)  disk (DiskView) |  | Select top disk. | Controllers/gui\_controllers.py |
| GUIController.select\_rod | self (GUIController)  dest\_rod (RodView) |  | Initiate a move. | Controllers/gui\_controllers.py |
| GUIController.select\_platform\_for\_move | self (GUIController)  platform (PlatformView)  rod\_index (int) |  | Show the disk move on screen, and update the model. | Controllers/gui\_controllers.py |
| GUIController.rod\_index | self (GUIController)  rod (RodView) | int | Return the index of rod. | Controllers/gui\_controllers.py |
| GUIController.show\_number\_of\_moves | self (GUIController) |  | Show the number of moves so far and the minimal number of moves on tk. | Controllers/gui\_controllers.py |
| GUIController.get\_rod | self (GUIController)  i (int) | RodView | Return ith rod. | Controllers/gui\_controllers.py |
| GUIController.get\_top\_disk | self (GUIController)  i (int) | DiskView | Return the top disk from ith rod. | Controllers/gui\_controllers.py |
| GUISolutionController.\_\_init\_\_ | self (GUISolutionController)  num\_disks (int) |  | Initialize a GUISolutionController. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.draw\_line | self (GUISolutionController)  x (float)  y (float)  heading (float)  length (float)  pensize (float)  color (str) |  | Draw lines to this GUISolutionController. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.draw\_scene | self (GUISolutionController) |  | Draw scenes to this GUISolutionController. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.draw\_single\_ring | self (GUISolutionController)  r (float)  x (float)  k (float)  extra (float) |  | Draw a single ring to this GUISolutionController. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.draw\_rings | self (GUISolutionController) |  | Draw rings to this GUISolutionController. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.move\_ring | self (GUISolutionController)  PP (str)  QQ (str) |  | Redraw and move the ring position. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.tower\_of\_hanoi | self (GUISolutionController)  X (str)  Y (str)  Z (str)  n (int) |  | Move rings in source position to dest position. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.start\_gui | self (GUISolutionController) |  | Start this GUISolutionController. | Controllers/gui\_solution\_controller.py |
| GUISolutionController.\_\_main\_\_ |  |  | Run the GUI version solution. | Controllers/gui\_solution\_controller.py |
| \_\_main\_\_ |  |  | Run the console version solution and console version user play version and GUI user play version. | Controllers/game\_controller.py |