

Abstract	
BoardMarker (module)	
PlayerHuman, PlayerComputer	
<ul style="list-style-type: none">• has a mark• has a board• assign board• assign mark (set `mark` independent of instantiation)• mark board (abstract: input square number/selection strategy)• display (super + " (`mark`))• protected: determine winning lines and keys on board	<ul style="list-style-type: none">• Board

HashGrid	
<ul style="list-style-type: none">• has size• private: has HashGridCell type to instantiate for each cell• private: has hash (internal data structure)• determine empty cells• determine full?• determine cell value ([])• determine rows, columns, diagonals, and center cells	<ul style="list-style-type: none">• HashGridCell

Abstract	
HashGridCell	
<ul style="list-style-type: none">• has key• has value• define interface for `display` method• define interface for `empty?` method	

HashGridVisual	
<ul style="list-style-type: none">• has constants for cell width padding, vertical padding, and width• draw HashGrid contents w/ optional cell keys	<ul style="list-style-type: none">• HashGrid

Space		HashGridCell
<ul style="list-style-type: none"> alias marker to HashGridCell#value alias marker= to HashGridCell#value= alias unmarked? to empty? implement `display` abstract method implement `empty?` abstract method mark (set `value`/'marker' to object that includes `BoardMarker`) 		<ul style="list-style-type: none"> BoardMarker (module)

Board		
<ul style="list-style-type: none"> has size (from HashGrid instance) reset (re-instantiate hash grid with size option) draw grid of spaces using HashGridVisual get empty spaces and available keys determine if board is full determine if move is valid mark board (`[]`= `method) determine winning line (winning marker) and winner? get center spaces, all lines, and empty keys in provided space sets private: prompt for board size 		<ul style="list-style-type: none"> HashGrid with cell type of Space

Player		PlayerHuman, PlayerComputer
<ul style="list-style-type: none"> has a name has is_computer determines human? or computer? display as string (implement `to_s`) 		

<div> <div>PlayerHuman</div> <div>Player, BoardMarker (module)</div> </div>	
<ul style="list-style-type: none"> mark board (implement abstract; get input and validate move) prompt and assign custom mark singleton: prompt name 	

<div> <div>PlayerComputer</div> <div>Player, BoardMarker (module)</div> </div>	
<ul style="list-style-type: none"> mark board (implement abstract; intelligently select key) 	

<div> <div>Abstract</div> <div>BoardMarkers (module)</div> <div>Players</div> </div>	
<ul style="list-style-type: none"> has MARKS (array of default marks 'X' and 'O') has board markers (array) assign board to board markers assign default marks 	<ul style="list-style-type: none"> BoardMarker

<div> <div>Players</div> <div>BoardMarkers (module), Enumerable (module)</div> </div>	
<ul style="list-style-type: none"> has is_multiplayer has custom_marks_enabled implement `each` and `<=>` to enable `Enumerable` prompt player options and names instantiate <`Player`-derived + `BoardMarker`-including> objects 	<ul style="list-style-type: none"> PlayerHuman+BoardMarker PlayerComputer+BoardMarker

GameRoundStatus

- has win status (true/false)
- has win status (true/false)
- has winner (Player)
- private: has board
- check move (determine if board has a winner or is full)
- end? (`true` if `win` or `draw`)
- display winner
- display draw

- Board

GameSetStatus

- has win score
- has players (any unique list of objects)
- has winner (one of the objects in `players`)
- has scores (hash lookup score tracking by any item in `players`)
- determine winner
- end? (when unique object hits win score)
- track score for unique object
- prompt win score
- display scores in various ways

Game

- has a board
- has players
- has round status
- identify players
- randomly assign marks to players
- play (initialize game, loop through players, play again?)
- display welcome and goodbye messages

- Board
- Player
- GameRoundStatus
- GameSetStatus