|  |  |  |
| --- | --- | --- |
| Square | | |
| - | Int | xCoordinate |
| - | Int | yCoordinate |
| - | Ship | shipThere |
| - | bool | hasBeenShot |
| + | void | Square(int xCoordinate, int yCoordinate)) |
| + | void | Square(int xCoordinate, int yCoordinate, Ship shipThere)) |
| + | void | Square( Square square) |
| + | Square | placeShipOnto(Ship ship) |
| + | int | getX() |
| + | int | getY() |
| + | bool | Equals(Square obj) |
| + | bool | shoot() |
| + | bool | isShot() |
| + | bool | isShip() |
| + | String | toString() |
| + | bool | hasShipSunk() |

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| --- | --- | --- |
| Ship | | |
| + | Square[] | position |
| - | Bool | isSunk |
| + | Void | Ship( Square[] position) |
| + | Bool | getShot( Square square) |
| - | Void | updateIsSunk() |
| + | Bool | getIsSunk() |
| + | String | ToString() |

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| --- | --- | --- |
| BoardLimit | | |
| - | Int | MAX\_X\_COORDINATE |
| - | Int | MAX\_Y\_COORDINATE |
| - | Int | MIN\_X\_COORDINATE |
| - | Int | MIN\_Y\_COORDINATE |
| - | BoardLimit | limit |
| + | BoardLimit | Get() |
| + | Int | maxX |
| + | Int | maxY |
| + | Int | minX |
| + | Int | minY |

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| --- | --- | --- |
| Player ( Interface ) | | |
| + | Square | MakeMove(Board board) |

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| --- | --- | --- |
| Narrator | | |
| + | void | displayIntro( TextBlock msgTxt) |
|  |  |  |
| + | Void | displayNameFoundSaved(TextBlock msgTxt, string name) |
| + | Void | newName(TextBlock msgTxt, string name) |

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| Animations | | |
| + | Void | TypeWriter(string textToAnimate, TextBlock txt, TimeSpan timeSpan) |
| - | void | TypeWriter(string text, TextBlock txt) |

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| Ai | | |
| + | Square | MakeMove( Board board) |
| + | Square | randomMove( Board board) |
| + | Square | smartRandom(Board board) |
| + | Square | finishShip( Board board) |

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| --- | --- | --- |
| Easy | | |
| + | Square | MakeMove( Board board) |

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| --- | --- | --- |
| Medium | | |
| + | Square | MakeMove( Board board) |

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| --- | --- | --- |
| Hard | | |
| + | Square | MakeMove( Board board) |

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| BoardPlacementData | | |
| - | StartPageData | StartPageData |
| - | Ship[] | playerShips |
| - | AiLevel | Level |
| - | Int | idleTime |
| + | void | BoardPlacementData(StartPageData startPageData, Ship[] playerShips, Ship[] aiShips, AiLevel level, int idleTime) |
| + | Ship[] | getPlayerShip() |
| + | Ship[] | getAiShip() |
| + | AiLevel | getLevel() |
| + | Int | getIdleTime() |

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| --- | --- | --- |
| GamePageData | | |
| + | BoardPlacementData | boardPlacementData |
| - | Int | currTimeSec |
| - | Int | currTimeMin |
| - | Int | currTimeHour |
| - | Int | turnCount |
| + | Board | playerBoard |
| + | Ai | ai |
| + | void | GamePageData(BoardPlacementData boardPlacementData, int currTimeSec, int currTimeMin, int currTimeHour, int turnCount, Board playerBoard, Board aiBoard, Ai ai) |
| + | voic | setTime(int currTimeSec, int currTimeMin, int currTimeHour) |
| + | Int | getTimeSec() |
| + | Int | getTimeMin() |
| + | Int | getTimeHour() |
| + | void | setTurnCount(int turnCount) |
| + | Int | getTurnCount() |

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| --- | --- | --- |
| Narrator | | |
| + | Void | displayIntro(TextBlock msgTxt) |
| + | Void | displayNameFoundSaved(TextBlock msgTxt, string name) |
| + | Void | displayNameFound(TextBlock msgTxt, string name) |
| + | void | newName(TextBlock msgTxt, string name) |
| + | Void | placing(TextBlock msgTxt, string name) |
| + | Void | startplaying(TextBlock msgTxt, string name) |
| + | void | firstturn(TextBlock msgTxt, string name) |
| + | Void | secondturn(TextBlock msgTxt, string name) |
| + | void | shipdown(TextBlock msgTxt, string name) |
| + | void | normal(TextBlock msgTxt, string name) |

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| --- | --- | --- | --- |
| PlayerDB | | | |
| - | String | dirPath | |
| + | List<GamePageData> | | Saves |
| - | PlayerDB | | Db |
| - | Void | | PlayerDB( string dirPath) |
| + | Bool | | isPlayerExist(string playerName) |
| - | Bool | | isPlayerSavedInList(string playerName) |
| + | GamePageData | | loadGame(string playerName) |
| + | void | | saveGame(GamePageData save) |
| + | void | | saveDB() |

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| --- | --- | --- |
| SerializeUtilities<T> | | |
| - | IFormatter | formatter |
| - | Void | SerializeUtilities() |
| + | Void | Serialize(T obj, string fileName) |
| + | T | Deserialize(string fileName) |

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| --- | --- | --- |
| StartPageData | | |
| - | String | playerName |
| + | Void | StartPageData( string playerName) |
| + | String | getPlayerName() |

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| --- | --- | --- |
| Board | | |
| - | Square[,] | squares |
| - | Int | Available |
| + | Void | Board(Grid grid) |
| + | Bool | isAllShipSunk() |
| + | Void | placeShip(Ship toPlace) |
| + | Boolean | isTaken(Square space) |
| + | Bool | Shoot( Square square) |
| + | void | updateGrid() |
| + | String | ToString() |
| + | Square[] | AvailableMoves() |
| + | Square[] | SecondAvailableMoves() |
| + | Square[,] | AllSquares() |
| + | bool | IsShipShotNotSunk(int i, int j) |