**Felipe Lima – 109290055**

|  |  |  |
| --- | --- | --- |
| mainWindow |  |  |
| Handles all the elements on the screen and the initial setup for the game. | Handles connect statements and window organization. | Creates the connections of all the buttons in the UI with slots that perform the desired response. |

|  |  |  |
| --- | --- | --- |
| cell |  | calls |
| Cell(QColor status, const int x, const int y) | Creates the object of the cell with the specific coordinate and status (dead or alive) |  |
| *mousePressEvent*(QGraphicsSceneMouseEvent \*event) | Changes the color of the cell when the cell is clicked. | Can handle color change withing the event or emit a signal to a slot to handle it or even call a function |
| *boundingRect*() const | Used to set where is this object located |  |
| *shape*() const | Defines the actual shape of the object |  |
| *paint*(QPainter \*painter, const QStyleOptionGraphicsItem \*option, QWidget \*widget) | Draws and paint the object in the view |  |
| Fields/Attributes: | int x\_;  int y\_;  int const width\_ = 20;  QColor status\_;  QColor next\_status\_; | Coordinates  Size  Dead or alive  Next turn status |

|  |  |  |
| --- | --- | --- |
| GameOfLife |  | Call/signal |
| Handles start, step, turn, pause, population | Keeps track of the fields and attributes that change each turn |  |
|  |  | gameEnds(bool ok); |
| Void playGame() | Handles clicking “play” button | slot |
| Void pauseGame() | Handles clicking “pause” button | slot |
| Void stepGame() | Handles clicking “step” button | slot |
| Void setSpeed() |  | slot |
| Fields/Attributes | Int population  Double pop\_percentage  Int turn  Double speed |  |

|  |  |  |
| --- | --- | --- |
| Graph |  |  |
| Handles the graph items |  |  |
| Graph(int height, int position) | Creates the object of the graph with the specific height and position  (width should be constant) |  |
| Void takeTurn() | Moves the bars to the left and add more bars |  |
| Fields/Attributes | Int height\_  Int const width\_  Int position\_ |  |

|  |  |  |
| --- | --- | --- |
| UI | Type | Signal to slot |
| Turn  Population | QLabel |  |
|  |
|  |  |  |
| view | QGraphicsView |  |
| Step | QPushButton | On clicked() connect to stepGame**()** |
| Play |  | On clicked() connect to playGame**()** |
| Pause |  | On clicked() connect to pauseGame**()** |
| slider | QSlider | On clicked() connect to setSpeed**()** |