

# GSoC 2020 Dev Log

## Community Bonding Period (May 4th - June 1)

- Discussed and developed a proof of concept for the customizable toolbar.
- Mentors provided me accounts for wiki and blog.
- Reading and understanding the program flow of the lua ui scripts.
- Set up account info, dev log and blog with the help of mentors.

### 09 May 2020

- Added basic MainWindow class containing CadMdiChild, Layers, CliCommand, Toolbar and Select tools.

### 10 May 2020

- Updated the toolbar class for basic initialization, attaching select tools.

### 11 May 2020

- Shifted GUI related connect calls from lua code to MainWindow class, as well input trigger connections.

### 12 May 2020

- Replaced luaInterface::qtConnect calls with actual Qt connect calls.
- Moved command list from lua to CliCommand class, along with a few other changes.
- Replaced menu luaConnect calls with temporary API function call.

### 13 May 2020

- Toolbar manual button creation in lua replaced with temporary API function call.
- Removal and refactoring of redundant lua code.

### 14 May 2020

- Finished removal and refactoring of id related code since window id is not required anymore.
- Added WindowManager class which will hold a list of window instances and have the new and open functions.

## 15 May 2020

- Feedback from mentors regarding new entry point for lua scripts.
- Moved UI button connect calls from their UI lua files to each of the tool's lua files, so that each operation can connect the button in it's initialization function.
- Shifted save and saveAs slots from lua to C++.

## 16 May 2020

- Removed init.lua as lua script execution start point.
- Lua folders are now scanned for files and run, after which init function in each operation is called which adds and connects buttons/registers commands.
- Removed all lua files in ui folder except for operations.lua

## 17 May 2020

- Began work on automatic generation of operation buttons by using operation properties.
- Added support for command line, menu buttons and toolbar buttons.

## 18 May 2020

- Added command line list support, toolbar group on the basis of file location.
- Added operations icon property support.
- Shifted remaining global functions from operations.lua to C++.
- Removed lua UI folder completely.

## 19 May 2020

- Added support for method wise toolbar icons in operation properties.

## 20 May 2020

- Attempted to make the unit tests run locally on my pc, ran into some issues with gtest,

## 21 May 2020

- Added WindowManager unit tests, updated old unit tests to work with new changes.
- Added MainWindow unit tests.

## 22 May 2020

- Added few more MainWindow unit tests.
- Refactored operations related code in luaInterface.
- Created PR.

## 23 May 2020

- Did not do anything related to the project.

## 24 May 2020

- Began work on Menu part of the Lua GUI API.
- Added Menu class.

## 25 May 2020

- Added menu and menuitem class
- Changed QMenu widgets to Menu class in ui file
- Ran into some issues regarding replacing qaction widgets.

## 26 May 2020

- Solved previous day's issues, replacement of qaction with menuitem works.
- Added callbacks list and few more functions for menu and menuitem class.

## 27 May 2020

- Added few more Menu API functions.
- Added menu positioning and fixed bug in findMenu function.

## 28 May 2020

- Added menu item positioning.
- Added more function overloads for Menu API operations.

## 29 May 2020

- Added support for menu inside menus.

## 30 May 2020

- Added menu item unit tests.
- Restricted menu items from having same label on the same level.
- Attempted disconnection of lua function slot, ran into some issues.

## 31 May 2020

- Spent some time debugging it, more weird issues. Decided to put named callbacks on hold and

add unit tests first.

- Added menu unit tests.
- While adding unit tests, realized issue with updation of positions on removing menu.

## Coding Period - I (June 1 - July 3)

### 01 June 2020

- Fixed remove function issues.
- Added more menu unit tests.
- Added named callbacks and ability to delete callbacks.
- CliCommand GUI API functions added.

### 02 June 2020

- Added CliCommand API unit tests.
- Started Layers GUI API

### 03 June 2020

- Added Layers GUI API functions
- Added few Layers API unit tests

### 04 June 2020

- Added ToolbarButton class
- Added ToolbarGroup class

### 05 June 2020

- Updated and replaced toolbartab functions
- Updated operation icon loading in luainterface
- Added few more toolbar gui functions

### 06 June 2020

- Updated and changed toolbar class functions.
- Added remaining toolbar gui api functions.

### 07 June 2020

- Attempted to solve issues with Qt and Visual Studio.

## 08 June 2020

- Shifted button connect function to toolbargroup class
- LuaQObject bug causing issues.

## 09 June 2020

- Fixed luaobject bug
- Moved snap button initialization to after script loading to avoid issues.

## 10 June 2020

- Add toolbar and toolbar tab unit tests.
- Added toolbar group and toolbar button unittests.
- Changed menu item callback connection to use signals and slots.

## 11 June 2020

- Replaced static and dynamic casts with qobject casts, qt crashes have stopped.
- Named callbacks and remove callback added to toolbar button.
- Renamed some api functions to adhere to coding style.

## 12 June 2020

- Added back luascript widget.
- Enabled changing of number of group columns for toolbargroup.

## 13 June 2020

- Fixed luascript bug.
- Added OperationLoader class.
- Callback calling is now done directly instead of using luaConnect.
- Removed LuaQObject class and Qt related code in luainterface.

## 14 June 2020

- Renamed qtbridge to guibrige.
- Removed qt related code in guibrige.

## 15 June 2020

- Began work on GUI Dialog.
- Added dialog widget, InputGUI class.
- Added TextGUI, ButtonGUI and ButtonGroupGUI class.

## 16 June 2020

- Added checkbox, radiobutton, radiogroup, horizontalgroup widgets.
- Added Coordinate GUI widget.

## 17 June 2020

- Added angle widget.
- Added slider and combobox widget.
- Added number widget and updated widgets to allow retrieving of values.

## 18 June 2020

- Added finish callback functionality of dialog box retrieving all values in a lua table.
- Added keys for widgets added to dialog box.

## 19 June 2020

- Allow selection of coordinate points for coordinate widget by clicking on the point.

## 20 June 2020

- Added color picker widget.
- Added entity picker widget.
- Added few more input gui unit tests.

## 21 June 2020

- Used visitor design pattern to resolve entity determining issue.
- Added horizontal group unit test.

## 22 June 2020

- Fixed menu positioning bug and entity picker bug.
- Created PR
- Fixed issues on compiling through gnu compiler that were not showing up in msvc.

## 23 June 2020

- Added layer unit tests as they were less according to the coverage report.
- Began work on customizable toolbar.

## 24 June 2020

- Worked on GUI for customize toolbar widget.
- Updated the drag and drop functionality.

## 25 June 2020

- Changed layout and added parent tabs for customize widget.
- Updated the customize widget.

## 26 June 2020

- Added delete functionality for customize widget.
- Started integrating with librecad.

## 27 June 2020

- Shifted widget classes from qtcreator to librecad.

## 28 June 2020

- Updated customize widget classes for proper initialization.
- Few changes in the drag model.

## 29 June 2020

- Button loading and proper handling of duplicate icons in the customize widget,
- Remove button added to tabs and groups in the widget.
- Implemented basic re-addition of buttons on finish.

## 30 June 2020

- Added clone function for toolbar buttons.
- Fixed re addition of buttons.

## 1 July 2020

- Partly implemented reading of toolbar data file.

## 2 July 2020

- Added reading of toolbar data from xml file through custom parsing code.
- Icon map shifted to toolbar class from iconlist so that it doesn't get overwritten.

### 3 July 2020

- Replaced custom parsing code with qxmlstreamreader and writer.

## Coding Period - II (July 3rd - July 31)

### 04 July 2020

- Added UI settings class and writing to ui settings file.

### 05 July 2020

- Added default settings to ui settings.
- Added default and load toolbar file buttons.

### 06 July 2020

- Created PR for customizable toolbar.
- Added documentation for MainWindow menu and for menu class.

### 07 July 2020

- Documentation for Menu classes added.
- Documentation for toolbar classes added.

### 08 July 2020

- Documentation for layers and clicommand classes added.
- Documentation for dialog widget class added.

### 09 July 2020

- Documentation for all the input gui widgets added.

### 10 July 2020

- Documentation for dialog example added.
- Finished up the documentation for gui api.
- Made toolbar xml schema.

## 11 July 2020

- Searched for a good library for xml/json parsing and schema validation.
- Started shifting settings from xml to json.

## 12 July 2020

- Settings shifted from xml to json using rapidjson library.
- Settings json schema validation added.

## 13 July 2020

- Began work on the property editor.
- Added property editor class.

## 14 July 2020

- Abstracted away input gui containing code to the inputguicontainer class.
- Faced a few bugs with entity selection.

## 15 July 2020

- Fixed coordinate gui bug in property editor.
- Finally fixed bug with entity selection, properties of already selected entities get retained.

## 16 July 2020

- Added property visitor class.
- Tried out different ways of setting and retrieving property data.

## 17 July 2020

- Overrode copy function of entity builder classes for proper copying of entities.
- Added a variant type for retrieving property values from entities.

## 18 July 2020

- Removed property visitor class, opting for setProperties method instead.
- Changed creation of property widgets.
- Added properties for a few classes like line,circle,ellipse,arc.

## 19 July 2020

- Added group boxes to separate entity properties.
- Added spline, polyspline and all dimension properties.

## 20 July 2020

- Added List Input GUI Class.

## 21 July 2020

- Added Plus and Minus button functionality for List GUI widget.
- Added control points property widget for spline entity.

## 22 July 2020

- Added point highlighting for list gui widget.
- Created LWVertexGroup class for holding polyline vertices in the properties widget.

## 23 July 2020

- Added LWVertex list for the polyline entity properties.
- Fixed few bugs related to lwvertex and added doxygen comments.
- Fixed entity removal and drag points width bugs.

## 24 July 2020

- Replaced group box with tree widget in the property editor.

## 25 July 2020

- Fixed minor bugs.
- Created PR and resolved merge conflicts.

## 26 July 2020

- Tried to figure out seg fault on travis build but not on pc.
- Started refactoring button and checkbox part of input gui.

## 27 July 2020

- Refactored some input gui code (relating to button and checkbox gui)
- Changes to saving of customize toolbar widget (added ok,close and ask user on close)
- Merged and resolved merge conflicts with master.

## 28 July 2020

- Fixed minor arc bug, added point properties.
- Added copy paste functionality for input guis through context menu.

## 29 July 2020

- Added widget titlebar and fixed for proper expansion/collapse of dock widget.
- Add column to make property editor table-like, also added some styling.
- Attempted to fix build constants bug with help from mentors.

## 30 July 2020

- Fixed build constants bug.
- Added few spacing and styling changes for property editor.
- Fixed proper resizing of property editor on being closed using widget toolbar.

## 31 July 2020

- Started work on context menu.

# Coding Period - III (August 1st - August 31)

## 01 August 2020

- Added context menu manager class.
- Added loading of basic operation to context menu.

## 02 August 2020

- Changed initialization of context menu manager to use a static list of instances instead.
- Added few commands like last command, undo, redo, select options etc.

## 03 August 2020

- Divided context menu into active, inactive and selected states.
- Fix snap options to update changes on both toolbar and context menu.
- Fix undo bug.

## 04 August 2020

- Added meta info property to property editor.
- Added lineselect class.

- Added layer combo box to property editor.

## 05 August 2020

- Added command specific context menu commands.
- Added properties for transition from current command to other commands.
- Added context menu transitions for line operation.

## 06 August 2020

- Added context menu transitions for circle and few other operations.
- Added contextMenuOptions for other commands like arc and line switching in polyline.
- Added PAN operation to pause the current active operation to allow the user to PAN.

## 07 August 2020

- Fixed dock widget movement bug.
- Added auto adjusting of titlebar between vertical and horizontal depending on dock position.

## 08 August 2020

- Nothing done on this day.

## 09 August 2020

- Changed toolbar data saving method to use rapidjson document.
- Refactored ui settings code to make it easier to add other settings to the json file.

## 10 August 2020

- Added saving of dock proportions for the dock widgets.

## 11 August 2020

- Minor fix in unit tests as new menu item is added.
- Added ArcWithSCE, ArcWithSCL and ArcWithSCA functions to arcoperations.

## 12 August 2020

- Added ArcWithCSA and ArcWithSCL.
- Added context transitions for these arc operations.

**13 August 2020**

- Added ArcWithSEA for arcoperations.

**14 August 2020**

- Added entity serialization to JSON
- Entity Property serialization to JSON.

**15 August 2020**

- Deserialization of json properties on pasting.
- Added ArcWithSER and ArcWithSEC

**16 August 2020**

- Add CCW,switch direction context menu command for toggling CCW in arc/switch direction.
- Created PR for arc\_operations
- Entity creation using deserialized json data.

**17 August 2020**

- Keyboard shortcuts for copy/paste.
- Added copying of polyline vertices.
- Fix spline and dimensions bug while copying.

**18 August 2020**

- Added TextBuilder class

**19 August 2020**

- Added textoperations lua file
- Added entity properties for text.

**20 August 2020**

- Added text dialog widget and class
- Text dialog initialization

**21 August 2020**

- Updated TextBuilder class to add more properties

- Dialog close transition to text operation
- Settings of text values through dialog.

## 22 August 2020

- Add fonts combo box
- Fetching of font from font family in painter

## 23 August 2020

- Loading of fonts from resources/fonts folder
- Added menu item and toolbar icon for text
- Added context menu transitions for text operation

## 24 August 2020

- Wrote phase 3 blog post.

## 25 August 2020

- Added symbols list to text dialog.
- Wrote final report blog post.

## 26 August 2020

- Fix dimension modification bug.
- Implemented bounding box function for dimensions.

## 27 August 2020

## 28 August 2020

- Added writing and reading of mtext to dxf.

## 29 August 2020

- Added alignment box with icons to replace combo boxes.
- Fix text align position bug.

## 30 August 2020

- Added underline and strikethrough for text in lcvtext,text and builder.
- Added underline and strikethrough options in text dialog.

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