Algorithm for Gui

Run>

⌄⌄This applies to every window⌄⌄

Continuously Run time and date and update label as is changes while waiting for an event

If event made, respond to the event.

Else, continue running time and date

⌄⌄Type of events and their response⌄⌄

Button press->go to other page or perform some action like changing a status or value

Slider slide->Change internal and external value to the new value set at slider

Drop menu select-> Change internal value and external value to the new value set at drop menu

Change in time-> Change the internal value to the updated system time and change external value to the new time set

⌄⌄Detailed events and what they do⌄⌄

**Lock screen:**

While we are on the lock screen the keypad is always active and accepting sequence.

A counter must manage this keypad function and the progress bar in it, it resets to 0 every 4 key inputs. And displays an error text when it’s not the set password.

If key is pressed->counter +1, in\_pass = append(keyvalue)

If counter is 4 and in\_pass not set\_pass OR reset key pressed-> counter =0, in\_pass = 0, progress bar =0, if counter is 4-> show error msg

Elseif counter is 4 and in\_pass is set\_pass->change from lockscreen to main screen

If reset button pressed

**Main screen:**

While we are on the home screen all the 4 buttons are always active and accepting input.

If Lock button is pressed-> change to Lock Screen

If ambient button is pressed-> change to ambient Screen

If Security button is pressed-> change to Security Screen

If Settings button is pressed-> change to Settings Screen

**Settings screen:**

While we are on the settings screen all the 2 buttons and the 4 number sliders are always active and accepting input.

If back button is pressed-> change to main Screen

If show log button is pressed-> open the log file

If lock button is pressed-> change to lock Screen

If any roller is changed, we upgrade set\_pass to the new sequence set by appending each roller value

**Ambient Screen:**

While we are on the ambient screen all the 4 buttons, 3 sliders and 4 drop downs are always active and accepting input.

-If back button is pressed-> change to main Screen

-If lock button is pressed-> change to lock Screen

-If reset button is pressed-> change all the variables of the screen to default.

-If play button is pressed-> status=play and open repository music files and start playing on external app->If play button is pressed and status is play, then pause on external app (By Mapping system functions)

-If fwr button is pressed-> skip fwd and play

-If bkw button is pressed-> skip bkw and play

-If room dropdown is changed, we upgrade room value to the new room set, whole hose is default

-If color dropdown is changed, we upgrade color value to the new color set, white is default

-If audio drop down is changed, we upgrade the room audio to the new room audio set. Whole house is default

-If temp unit dropdown is changed, we upgrade the system variable for temperature unit. Celcius is default. Slider value must be set to different ranges for each unit, Fahrenheit should be 60 min 80 max, Celcius 16 min, 27 max. (Formula: F=C\*1.8+32)

-If temp slider is changed or unit changed, the system variable for temperature is set to the new temperature set.

-if volume slider is changed the rooms variable for volume in set to the new slider value

-if lighting slider is changed the rooms variable for lighting

**Security Screen**:

While we are on the security screen all the 7 buttons, 2 drop downs are always active and accepting input.

-If back button is pressed-> change to main Screen

-If lock button is pressed-> change to lock Screen

-If any arm button is pressed-> change the security status to armed and append the value of the button pressed(ej: arm away is pressed-> sec\_stat= armed + away), change the button pressed label to un-armed, set the other button label to default and display armed status mesage

-If play button is pressed-> status=play and open repository music files and start playing on external app->If play button is pressed and status is play, then pause on external app(By Mapping system functions)

-If fwr button is pressed-> skip fwd and play

-If bkw button is pressed-> skip bkw and play

-If room dropdown is changed, we upgrade room value to the new room set, whole hose is default

-If color dropdown is changed, we upgrade color value to the new color set, white is default

-If audio drop down is changed, we upgrade the room audio to the new room audio set. Whole house is default

-If temp unit dropdown is changed, we upgrade the system variable for temperature unit. Celcius is default. Slider value must be set to different ranges for each unit, Fahrenheit should be 60 min 80 max, Celcius 16 min, 27 max. (Formula: F=C\*1.8+32)

-If temp slider is changed or unit changed, the system variable for temperature is set to the new temperature set.

-if volume slider is changed the rooms variable for volume in set to the new slider value

-if lighting slider is changed the rooms variable for lighting

**Logging method:**

After every event that changes a value is made, a print in the log.txt will be made as well.

Every time the app starts it logs the date and time.

Log.txt examples:

(Window Start Log) [Active]-hh: mm am/pm - dd/mm/yyyy

(Lighting change log) Ligting in “room” changed to “x”” %”

(temperature change log) Temperature in “room” changed to “x””º””Unit”

(volume change log) Volume in “room” changed to “x”” %”

(video playing log) Feed of “room” was played

(song status change log) Song in “room changed to “audio\_status” [status = play or pause or skipfoward or skipback]

(temperature unit change log) Temperature unit changed to “Xº”

(security status change log) Security Status changed to “Sec\_status” [status = armed stay, armed away, un-arm]

(Door status change log) “Room” door was “door\_status” [status= locked, unlocked]

(log print log) Log Form was printed out

(password change log) Password changed to “set\_pass”

**System memory:**

A txt. File must be kept and updated in every launch of the app

Data like Password, temperature, temperature unit Security Status, and Room lighting must be upgraded and stored in a AppData.txt file, every time the system starts, that file is read read as the default initial values. Changes to this file must be done when the user terminates the program.