

uGUI_Processes.c

```
void uGUI_btn_onClickGlobal(uint8_t Sender)
void uGUI_btn_onClickRight(uint8_t Sender)
void uGUI_btn_onClickRight(uint8_t Sender)
void uGUI_tlabel_onClickGlobal(uint8_t Sender)
void uGUI_chb_onClickGlobal(uint8_t Sender)
void uGUI_radio_onClickGlobal(uint8_t Sender)
void uGUI_bar_onClickGlobal(uint8_t Sender)
void uGUI_tab_onClickGlobal(uint8_t Sender)
void uGUI_scrollbar_onClickGlobal(uint8_t Sender)
void uGUI_tab_onClickPages(uint8_t Sender)
void uGUI_radio_onClickAreas(uint8_t Sender)
void uGUI_initialize(void)
void uGUI_main_process(void)
```

uGUI_Overlay.c

```
uint8_t uGUI_draw_text(uint8_t objectID)
uint8_t uGUI_draw_Page(uint8_t objectID)
uint8_t uGUI_draw_Scrollbar(uint8_t objectID)
uint8_t uGUI_draw_tlabel(uint8_t objectID)
uint8_t uGUI_draw_Bar(uint8_t objectID)
uint8_t uGUI_draw_Chb(uint8_t objectID)
uint8_t uGUI_draw_Btn(uint8_t objectID)
uint8_t uGUI_draw_Tab(uint8_t objectID)
uint8_t uGUI_draw_Radio(uint8_t objectID)
uint8_t uGUI_bar_update(uint8_t objectID)
uint8_t uGUI_draw_Image(uint8_t objectID)
void uGUI_draw_Switch(uint16_t x, uint16_t y, uint16_t w, uint16_t h, uint8_t state)
void uGUI_draw_Slider(uint16_t x, uint16_t y, uint16_t h, uint16_t w, uint16_t Color, uint16_t posSlider)
```

uGUI_Objects.c

```
void uGUI_Initialize_ObjectSize(void)

uint8_t uGUI_getGlobalID(uGUI_ObjectTypes ObjectType)

uint8_t uGUI_delete_element(uint8_t GlobalID)

uint8_t uGUI_releaseGlobalID(uint8_t GlobalID)

uint8_t uGUI_checkGlobalID(uint8_t GlobalID)

uint8_t uGUI_touch(uint16_t x, uint16_t y)

uint8_t uGUI_tab_checkarea(uint16_t x, uint16_t y, uint8_t objectID)

uint8_t uGUI_radio_checkarea(uint16_t x, uint16_t y, uint8_t objectID)

uint8_t uGUI_bar_setpos(uint8_t objectID, uint16_t x, uint16_t y)

uint8_t uGUI_scrollbar_setpos(uint8_t objectID, uint16_t x, uint16_t y)

uint8_t uGUI_touch_checkarea(uint16_t x, uint16_t y)

uint8_t uGUI_main_class_create(int16_t x0, int16_t y0, int16_t x1, int16_t y1, char* Text, void
*function, uGUI_ObjectTypes ObjectType)

uint8_t uGUI_page_create(uint16_t colour, uint8_t scroll, void *function)

uint8_t uGUI_scrollbar_create(int16_t x0, int16_t y0, int16_t x1, int16_t y1, uint16_t
scroller_colour, uint16_t background_colour, uint8_t position, uint8_t orientation, char *Text,
void *function)

uint8_t uGUI_tlabel_create(int16_t x0, int16_t y0, int16_t x1, int16_t y1, uint16_t color,
uint16_t a_color, uint16_t tcolor, char *Text, void *function)

uint8_t uGUI_txt_create(int16_t x0, int16_t y0, uint16_t color, char *Text, uint8_t maxTextSize)

uint8_t uGUI_bar_create(int16_t x0, int16_t y0, uint16_t width,
    uint16_t height, uint16_t color, uint16_t fill_color,
    uint8_t orientation, uint16_t min,
    uint16_t max, uint16_t position, uint8_t show_percentage, char* Text, void* function)

uint8_t uGUI_btn_create(int16_t x0, int16_t y0, uint16_t width, uint16_t height, uint16_t Color,
    uint16_t ClickColor, char *ButtonText, void *onClick)

uint8_t uGUI_chb_create(int16_t x0, int16_t y0, uint16_t size, uint16_t Frame_Colour,
    uint16_t Check_Colour, uint8_t Thickness, bool Active, char *Chb_Label, void *onClick)

uint8_t uGUI_tabs_create(int16_t x0, int16_t y0, uint8_t tab_length, uint8_t tab_height, uint8_t
Orientation, uint16_t Colour, uint8_t Thickness, uint8_t Elements, uint8_t Active, char *Text,
void *function) // Orientation: 0 Is Left to right, 1 is top to bottom

uint8_t uGUI_radio_create(int16_t x0, int16_t y0, uint8_t radio_length, uint8_t radio_height,
uint8_t Orientation, uint16_t Colour, uint8_t Elements, uint8_t Active, char *Text, void
*function) // Orientation: 0 Is Left to right, 1 is top to bottom
```

```

uint8_t uGUI_image_create(int16_t x0, int16_t y0, int16_t x1, int16_t y1, char *Text, void
*function) // Orientation: 0 Is Left to right, 1 is top to bottom

uint8_t uGUI_main_class_change_position(uint8_t objectID, int16_t x0, int16_t y0, int16_t x1,
int16_t y1)

uint8_t uGUI_add_to_page(uint8_t objectID)

uint8_t uGUI_add_to_scrollbar(uint8_t objectID, uint8_t ScrollbarID)

uint8_t uGUI_object_on_page(uint8_t ObjectID)

void uGUI_set_staticobjects_page(uint8_t ObjectID, uint8_t subPage)

void uGUI_activate_sub_page(uint8_t subPage)

void* uGUI_turn_page(uint8_t Page_ID)

uint8_t uGUI_redraw_static_page(uint8_t Page_ID)

uint8_t uGUI_redraw_object(uint8_t objectID)

uint8_t uGUI_tlabel_change(uint8_t objectID, uint8_t state)

uint8_t uGUI_txt_change(uint8_t objectID, uint16_t color, uint16_t clr_color, char *Text)

uint8_t uGUI_btn_txt_change(uint8_t objectID, char *Text)

uint8_t uGUI_btn_click(uint8_t objectID, uint8_t state)

uint8_t uGUI_chb_toggle_status(uint8_t objectID)

uint16_t uGUI_get_bar_position(uint8_t objectID)

uint16_t uGUI_get_scroll_position(uint8_t objectID)

uint8_t uGUI_set_bar_position(uint8_t objectID, uint16_t new_position)

int8_t uGUI_get_active_tab(uint8_t objectID)

int8_t uGUI_get_active_radio(uint8_t objectID)

uint16_t get_Value_16(uint16_t start)

unsigned long get_Value_32(uint16_t start)

void draw_image_from_SD(uint16_t x, uint16_t y, char *filename)

void ItoA( int z, char* Buffer, char* suffix )

void FtoA( float Number, char* Buffer, char* suffix, uint8_t max_Size)

```

TouchPanel.c

```
static void ADS7843_SPI_Init(void)

void TP_Init(void)

static void DelayUS(vu32 cnt)

static void WR_CMD (uint8_t cmd)

static int RD_AD(void)

int Read_X(void)

int Read_Y(void)

void TP_GetAdXY(int *x,int *y)

void TP_DrawPoint(uint16_t Xpos,uint16_t Ypos)

void DrawCross(uint16_t Xpos,uint16_t Ypos)

void ClearCross(uint16_t Xpos,uint16_t Ypos)

Coordinate *Read_Ads7846(void)

FunctionalState setCalibrationMatrix( Coordinate * displayPtr,
                                     Coordinate * screenPtr,
                                     Matrix * matrixPtr)

FunctionalState getDisplayPoint(Coordinate * displayPtr,
                                Coordinate * screenPtr,
                                Matrix * matrixPtr )

void TouchPanel_Calibrate(void)
```

LCD_Driver.c

```
void LCD_SetInput(void)

void LCD_SetOutput(void)

uint16_t LCD_ReadData(void)

uint16_t LCD_GetPixel(uint16_t x, uint16_t y)

void LCD_WriteCommand(int Data)

void LCD_WriteData(int Data)

void LCD_Strobe_Data(void)

void LCD_Write_Com_Data(int Reg, int Data)

void LCD_SetArea(int16_t x1, int16_t y1, int16_t x2, int16_t y2)

void LCD_Paint(unsigned int color)
```

```
void LCD_Init(void)

void LCD_Delay(uint32_t nCount)

void LCD_DelayUs(uint32_t nCount)

void LCD_PutPixel(int16_t x, int16_t y, uint16_t color)

void LCD_Clear(uint16_t color)
```

LCD_api.c

```
double Abs(double Nbr)

double sqrt10(double Nbr)

void LCD_draw_straight_line(int16_t x0, int16_t y0, int16_t x1, uint16_t color)

void LCD_draw_rounded_rect_2(int16_t x0, int16_t y0, int16_t x1, int16_t y1, uint16_t r, uint16_t
Color, uint8_t thickness, uint8_t filled)

uint8_t LCD_draw_rounded_rect(int16_t x0, int16_t y0, int16_t x1, int16_t y1, uint16_t r, uint16_t
Color)

uint8_t LCD_etch_fettling(int16_t x0, int16_t y0, int16_t x1, int16_t y1, uint16_t r, uint16_t
Color)

void LCD_Line(int16_t x0, int16_t y0, int16_t x1, int16_t y1, uint16_t color)

void LCD_Thick_Line(int16_t x0, int16_t y0, int16_t x1, int16_t y1, uint16_t Colour, uint8_t
Thickness)

void LCD_Circle(int16_t cx, int16_t cy, uint16_t r, uint16_t color, uint8_t fill)

void LCD_Circle_Sector(int16_t cx, int16_t cy, uint16_t r, uint16_t Angle_B, uint16_t Angle_A,
uint16_t color)

void LCD_Draw_Free(uint16_t x, uint16_t y, uint16_t color)

void LCD_Clear_Free()

void LCD_Rectangle(int16_t left, int16_t top, int16_t right, int16_t bottom, uint16_t color, bool
fill)

void LCD_Gradient_Rectangle(int16_t left, int16_t top, int16_t right, int16_t bottom, uint16_t
colour1, uint16_t colour2, uint8_t orientation)

void LCD_Flowing_Border_Rectangle(int16_t left, int16_t top, int16_t right, int16_t bottom,
uint16_t colour1, uint16_t colour2, uint8_t thickness, bool fill)

uint16_t LCD_check_colour_brightness(uint16_t colour)

uint16_t LCD_Change_Colour_Intensity(uint16_t Colour, int16_t summand)
```

```
uint16_t LCD_Colour_Merge(uint16_t Colour, int16_t Colour2)
uint16_t LCD_Generate_Random_16(uint16_t seed, uint16_t Index)
void LCD_Square(int16_t x0, int16_t y0, int16_t width, int16_t color,uint8_t fill)
void LCD_ClearCharBox(int16_t x,int16_t y,uint16_t color)
void LCD_Disppic_FullSize(const unsigned char *str)
int power (int base, int n)
void LCDAPI_drawLongRoundRect(uint16_t x, uint16_t y, uint16_t h, uint16_t w, uint8_t solid)
void LCDAPI_drawEmptyCircle(uint16_t x, uint16_t y, uint16_t OuterRadius, uint16_t thickness)
void LCDAPI_drawCircleFilled(u16 cx,u16 cy,u16 r)
```

font.c

```
void font_set(uint8_t FontNumber)
uint8_t font_number_of_chars(unsigned int font_addr)
uint8_t font_first_char(unsigned int font_addr)
uint8_t font_char_width(unsigned int font_addr,uint8_t chr)
uint8_t font_char_present(unsigned int font_addr,uint8_t chr)
uint8_t font_char_height(unsigned int font_addr)
uint16_t font_start_offset(unsigned int font_addr,uint8_t chr)
unsigned int font_get_strlen(unsigned char FontAddr, unsigned char Spaces, char *Text)
void lcd_putc(unsigned int font_addr,uint8_t chr,unsigned int font_color)
void put_text(unsigned int x, unsigned int y, unsigned int Color, char *text)
```

FloodFill.c

```
void pushStack(uint16_t x, uint16_t y)
void popStack(uint16_t *x, uint16_t *y)
void floodFillScanlineStack(uint16_t x, uint16_t y, uint16_t oldColor, uint16_t newColor)
```