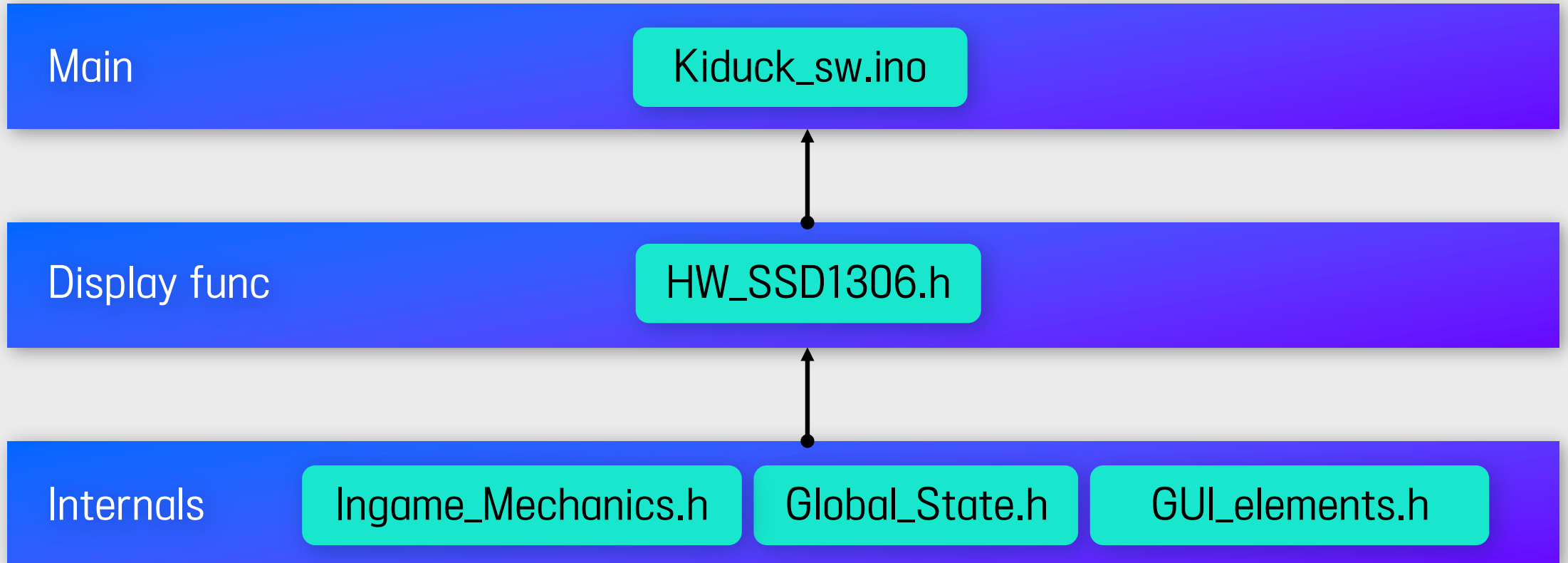
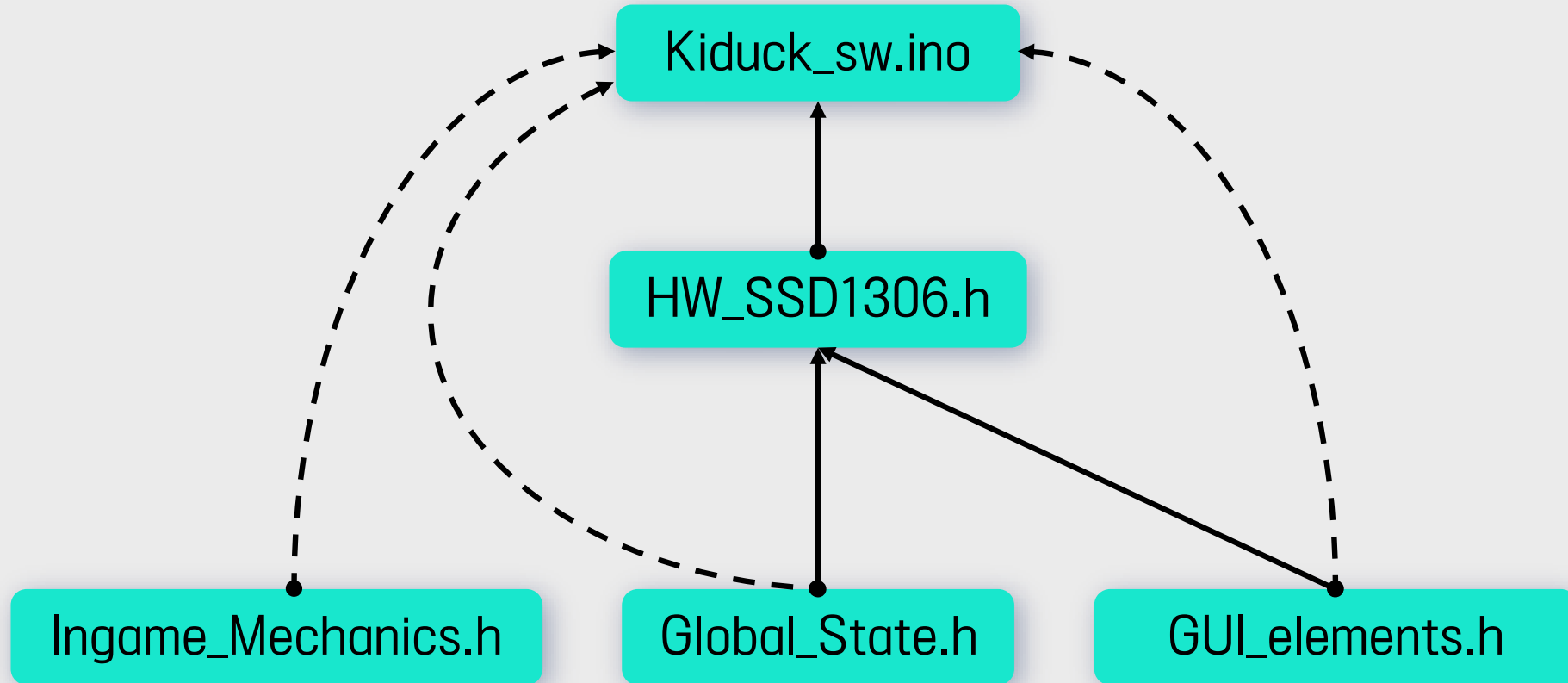


Software Hierarchy

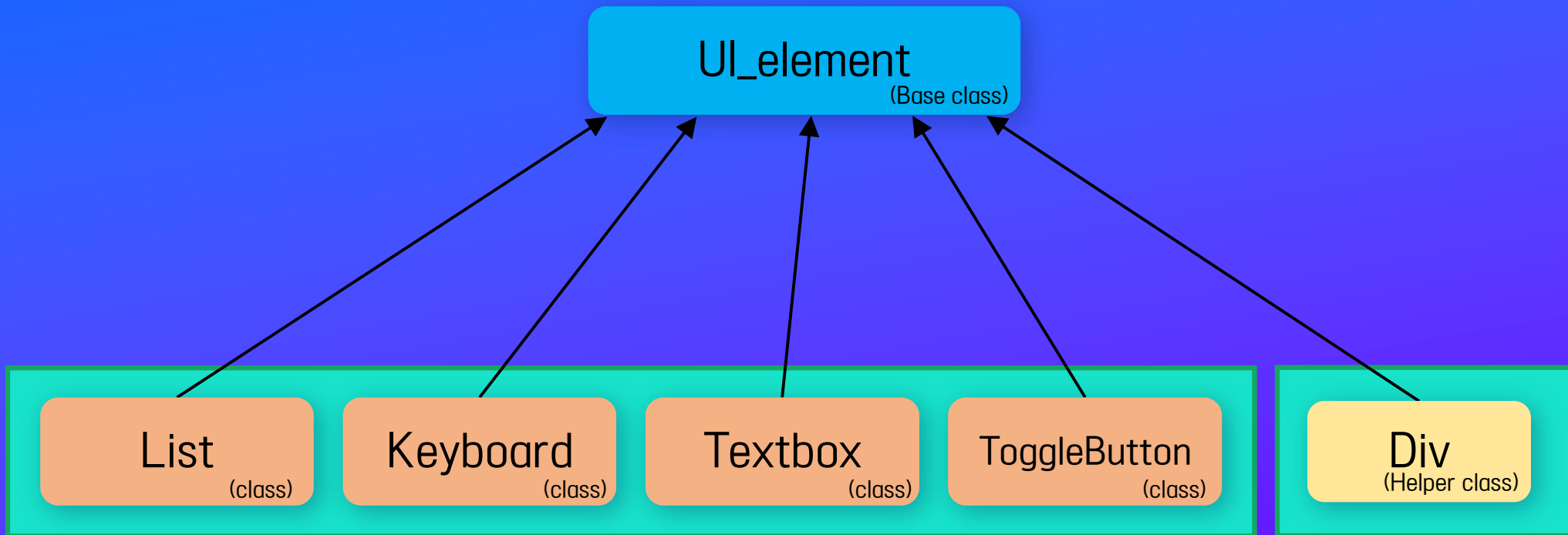


File Include Relation Graph



GUI_elements.h

Implement Internal Mechanics for GUI Elements



Global_State.h

1. User Info (Global Variable)

user_name

user_age

user_weight

character

growth

2. Kiduck Image Array and Image Selector function

duck_img

(function)

3. Basic Hardware Utility Function

Set Pin Mode to input

(function)

Falling edge Detection

(function)

Elapsed time checker

(class)

Ingame_Mechanics.h

1. Step Count

Data	int	today_steps
	vect	step_counts

Daily Goal & reward	WALK_DAILY_CRIT
	WALK_PT_CRIT
	WALK_PT

~~LSM9DS1_setup~~ (function)

calibrate (function)

step_count (function)

:
+ add when complete

2. Friend meet

Data	int	today_meet_count
	vect	today_friend meet_count

Daily Goal & reward	MEET_DAILY_CRIT
	MEET_PT

meet_reset (function)

is_not_in (function)

meet_add (function)

:
+ add when complete

3. Water Dinking

Data	float	prev_water_level
	int	today_water
	vect	water_drink

Daily Goal & reward	WATER_DAILY_CRIT
	WATER_PT

water_reset (function)

Water_update (function)

:
+ add when complete

4. Points

points

update_points
(function)

5. Event func.

change_event
(function)

HW_SSD1306.h

Display GUI Elements to SSD1306 OLED module using
<Adafruit_GFX.h>, <Adafruit_SSD1306.h>

1. Display Setup

SSD1306_Setup
(function)

startupDisplay
(function)

2. GUI Constrctor

listConstruct

textboxConstruct

keyboardConstruct

3. Display Function

rectButtonSetDisplay

navigationBarDisplay

listDisplay

keyboardTextboxDisplay

duckDisplay

Kiduck_sw.ino

Initialization

(Global Variable)

int screen = 7 long[] smap = {...}

Display & GUI objects

Screen id	description	variables
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User Data Initialization Display

7	name initialize	keyboard textbox	name_init_7 name_text_7
8	age initialize	keyboard textbox	age_init_8 age_text_8
10	weight initialize	keyboard textbox	weight_init_10 weight_text_10

0	Duck Display (Main Display)
---	-----------------------------

Settings Display

1	Settings	list	settings_list_1
2	Alarm Settings	list	alarm_list_2
3	Audio Settings	list	audio_text_3
4	name reset	keyboard textbox	name_reset_4 name_text_4
5	age reset	keyboard textbox	age_reset_5 age_text_5
9	weight reset	keyboard textbox	weight_reset_9 weight_text_9
6	Comm. settings	list	comms_list_6

setup()

Screen Setup

SSD1306_Setup()

startupDisplay()

showScreen()

Button input Setup

setButtonPinMode()

loop()

actionMap()

if fall_edge(3)

switch(screen): [].moveBackwards()

showScreen()

elif fall_edge(2)

switch(screen): [].moveForwards()

showScreen()

elif fall_edge(1)

switch(screen):
[].enter() or screenSwitchMap()

showScreen()

elif fall_edge(0)

switch(screen): screenSwitchMap()

showScreen()

elif(change_event())

showScreen()

screen function

showScreen()

switch(screen):

Call Display function for
corresponding screen

screenSwitchMap(n)

screen = smap [screen] % 100ⁿ⁺¹ / 100ⁿ

screenSwitchHook()

Any action that needs to be
executed before screenSwitch

+ Other real-time
functions (Bluetooth, step...)