



PWM DRAWER

AMIT Graduation Project

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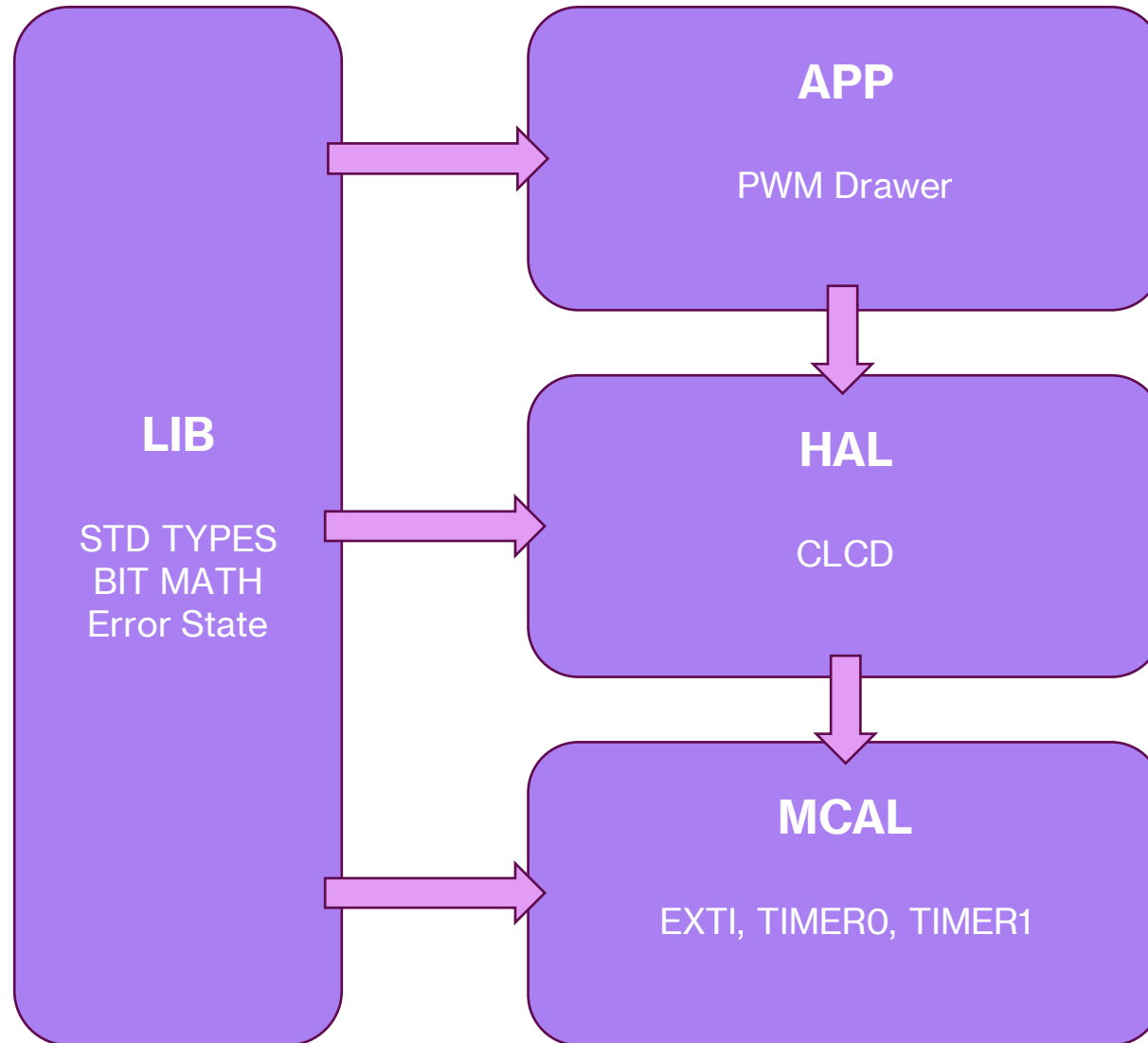
Introduction

- Pulse Width Modulation (PWM) is a type of signal that is generated from a digital IC (such as a microcontroller)
- It is produced in the form of pulses/ square waves. Meaning, the signal will be a train of high levels and low levels. e.g., 5 v and 0 v.

We use generally PWM signal for two functions:

1. Communication.
 2. Load Control (e.g. Motor Speed, Light Intensity, etc.)
- In this project, we are going to use PWM as a way of communication.
 - We are going to generate a PWM signal from our microcontroller (Atmega32) then receive it on the same microcontroller, calculate the Duty Cycle and Frequency of the signal, then print it on the LCD.

Layered Architecture



Specs

1. Microcontroller: ATMEGA32

2. EXTI : INTO and sense rising edge.

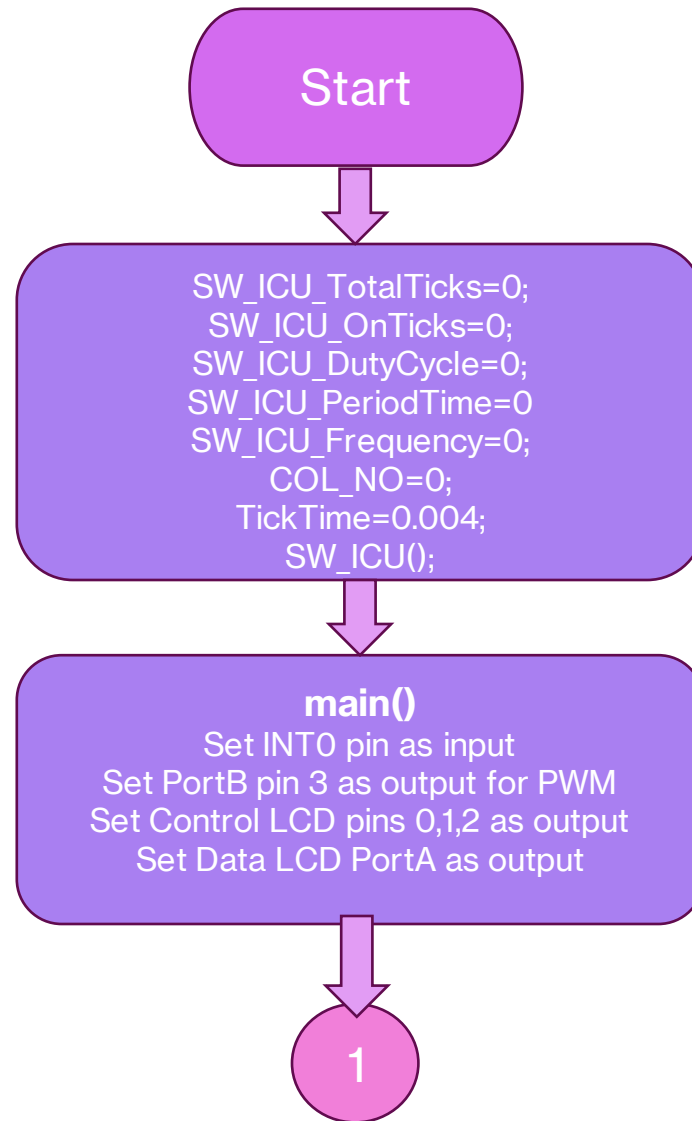
3. Timer0 : Generates PWM signal.

- *Mode:* Fast PWM mode.
- *Prescaler:* division by 64.
- *OCR0 value:* 127.

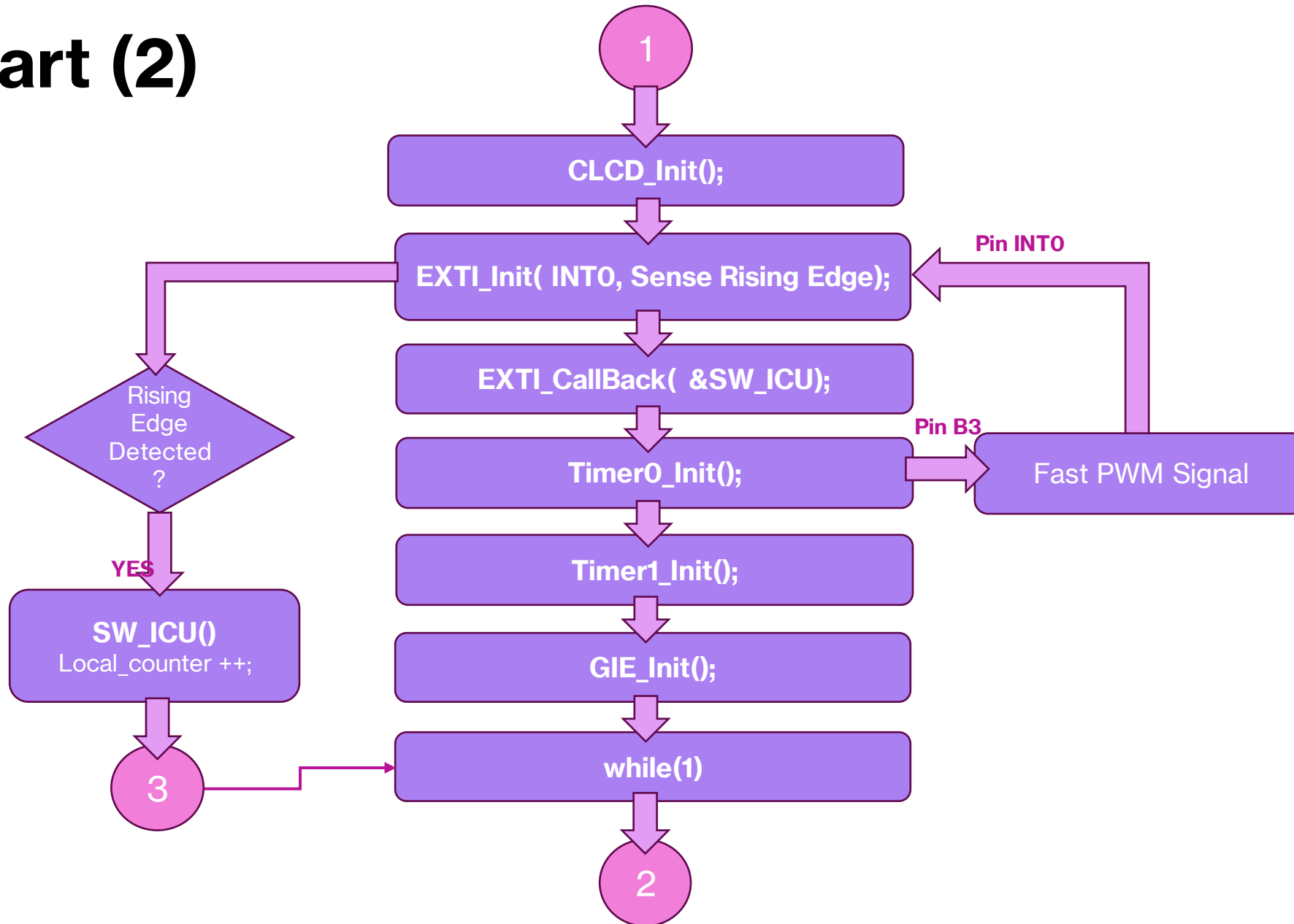
3. Timer1 : Calculates Duty Cycle, Period Time, & Frequency.

- *Mode:* Normal mode
- *Prescaler:* division by 64.

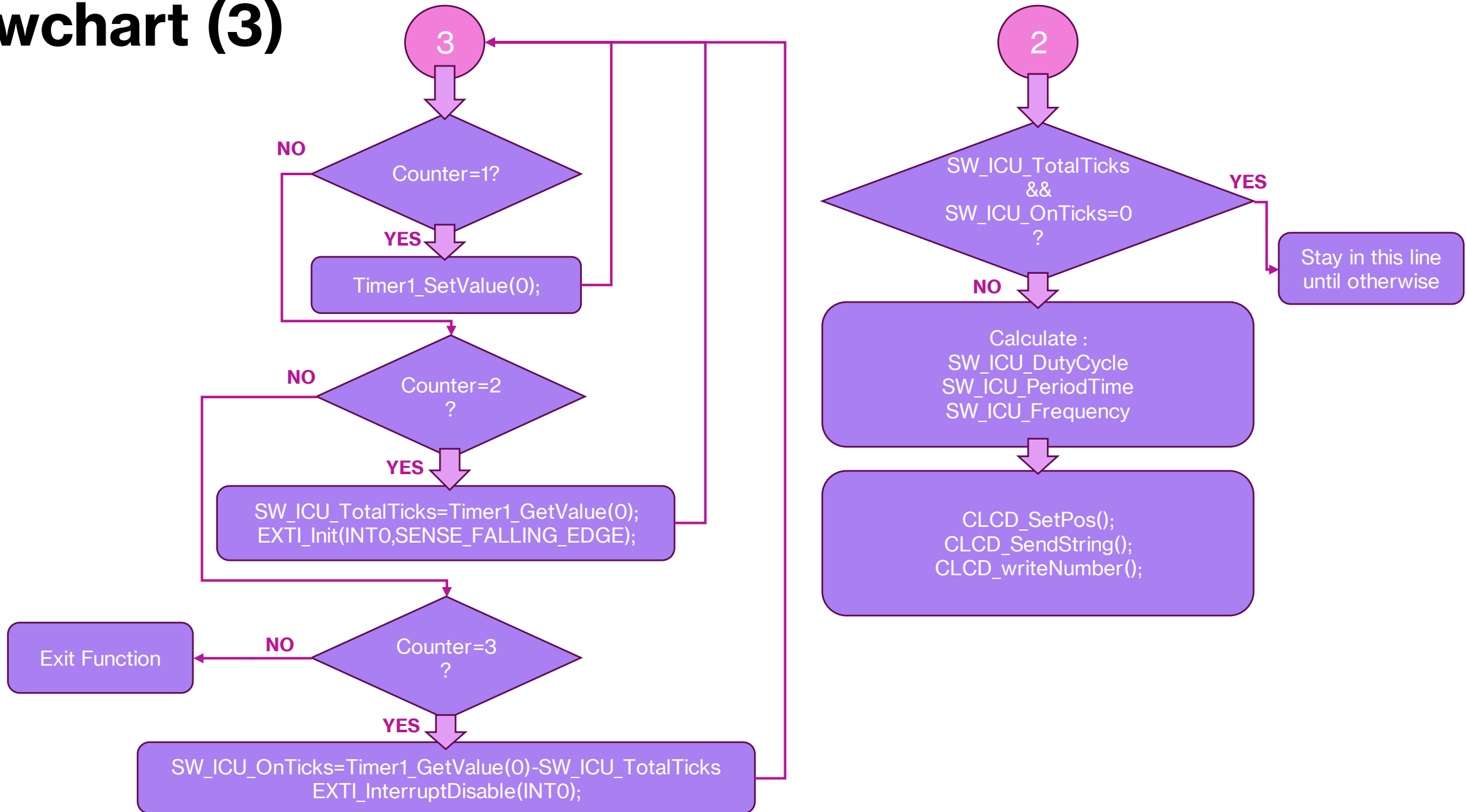
Flowchart (1)



Flowchart (2)



Flowchart (3)



THANK YOU!