PWM-DRAWER

AMIT_Poject

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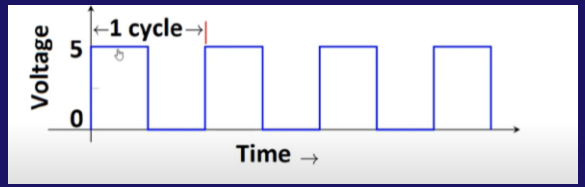
INTRODUCTION

- Pulse Width Modulation, a technique for controlling the average power delivered by an electrical signal.
- PWM is used to generate analog signals from digital devices, such as microcontrollers.
- PWM works by switching the supply between on and off at a fast rate.

PWM signal elements

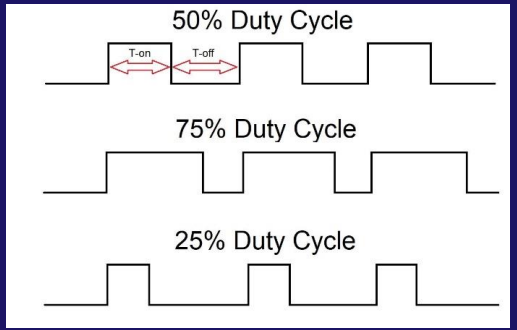
Frequency

Is represented through the total number of cycle per second.

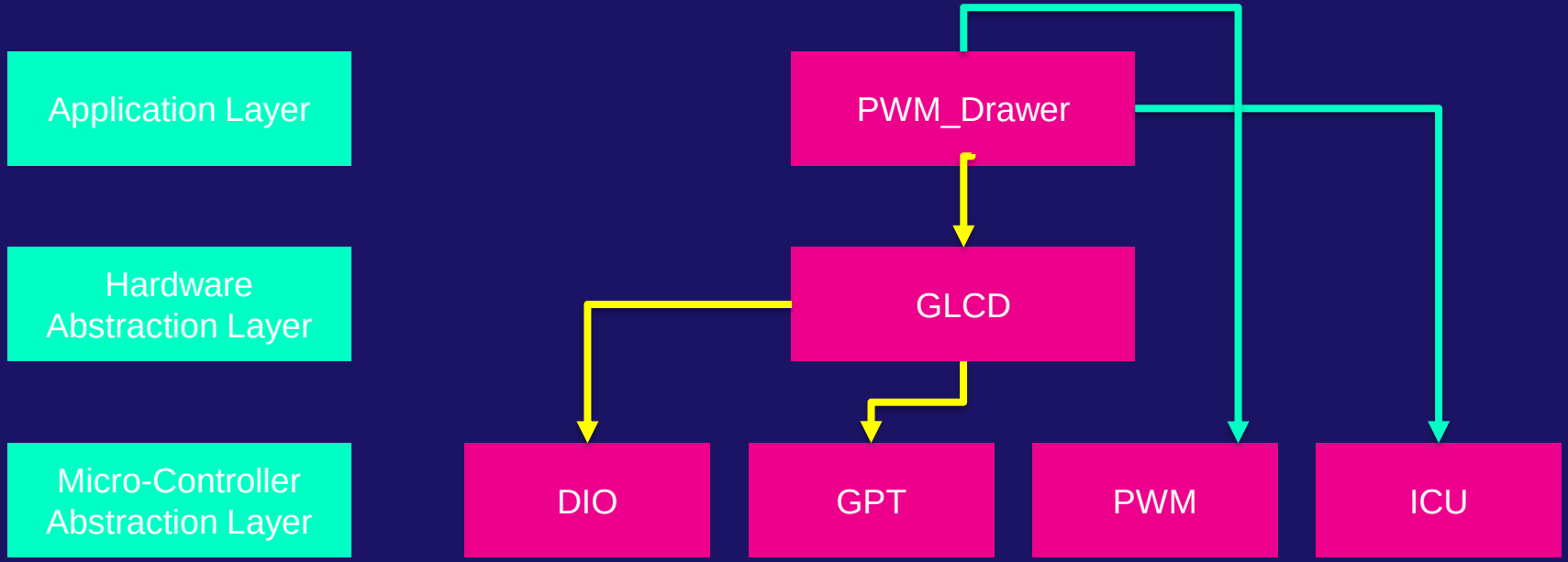


Duty cycle

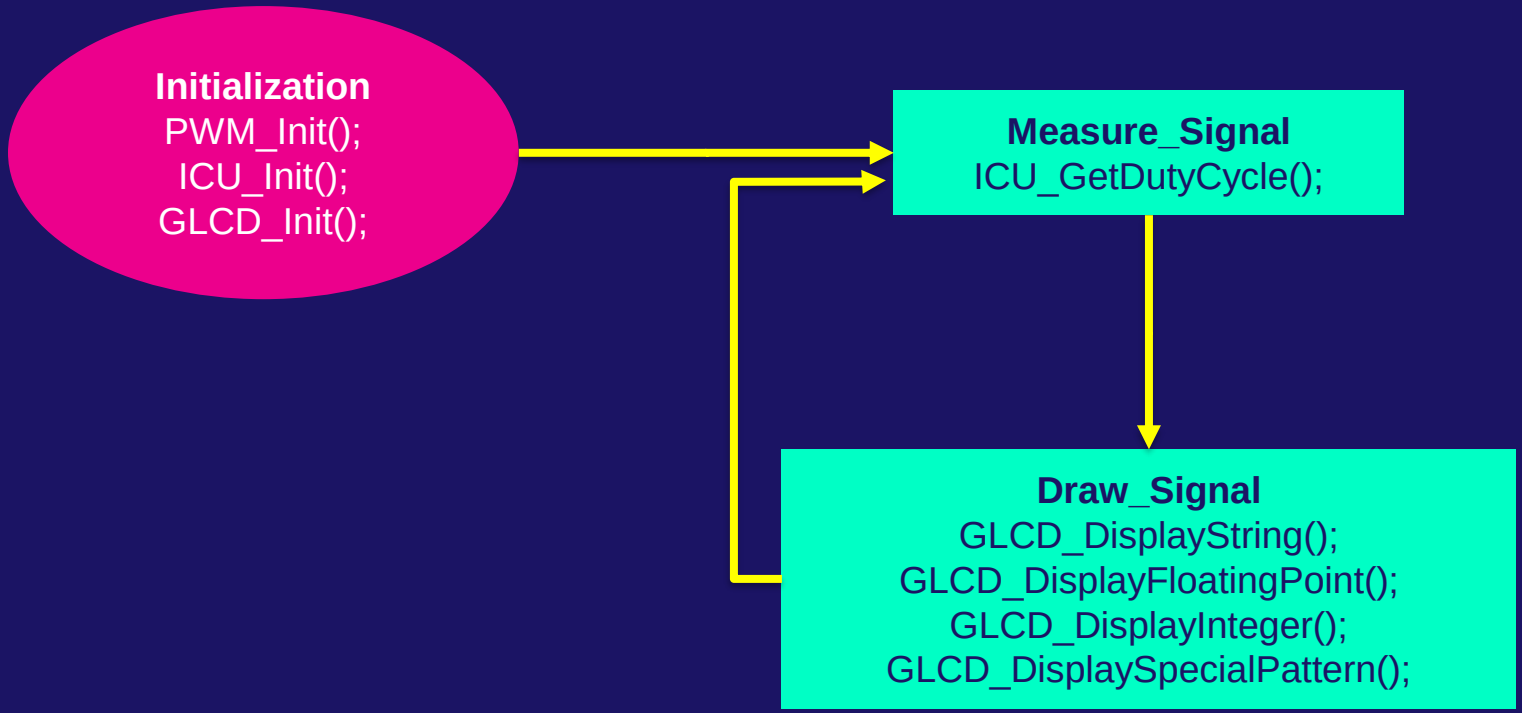
Is defined with respect to percentage or as a number between 0 & 1.



Layered Architecture

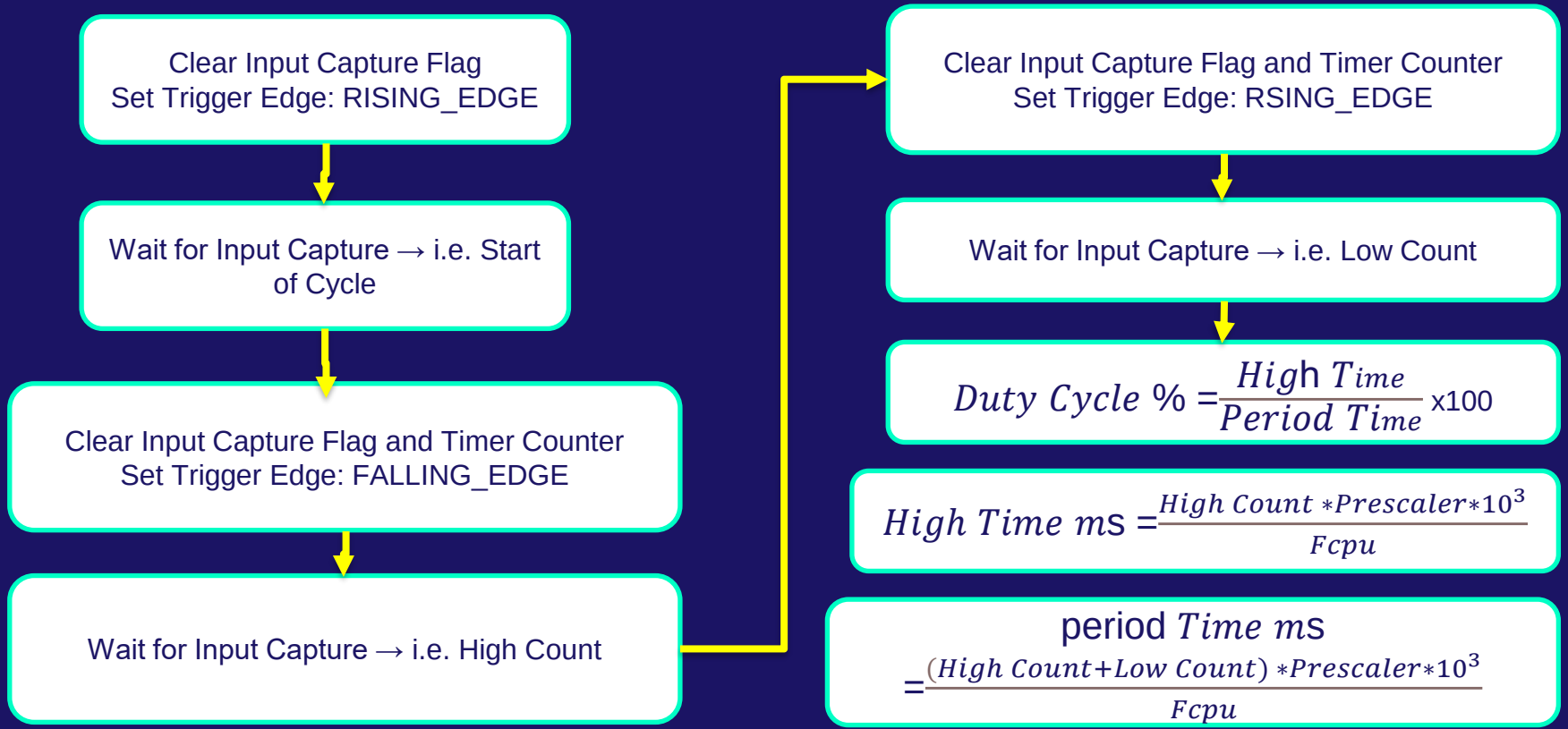


Flowchart


Initialization
PWM_Init();
ICU_Init();
GLCD_Init();
Measure_Signal
ICU_GetDutyCycle();
Draw_Signal
GLCD_DisplayString();
GLCD_DisplayFloatingPoint();
GLCD_DisplayInteger();
GLCD_DisplaySpecialPattern();

Measure_Signal
ICU_GetDutyCycle();

Flowchart



Flowchart

Draw_Signal
GLCD_DisplayString();
GLCD_DisplayFloatingPoint();
GLCD_DisplayInteger();
GLCD_DisplaySpecialPattern();

Choose a scale (milliseconds to pixel) as $\frac{period\ time}{5}$

GLCD Line 0: Display Frequency Value in kHz.

GLCD Line 1: Display Duty Cycle Value in %

GLCD Line 4: Display Period Time Value in milliseconds.

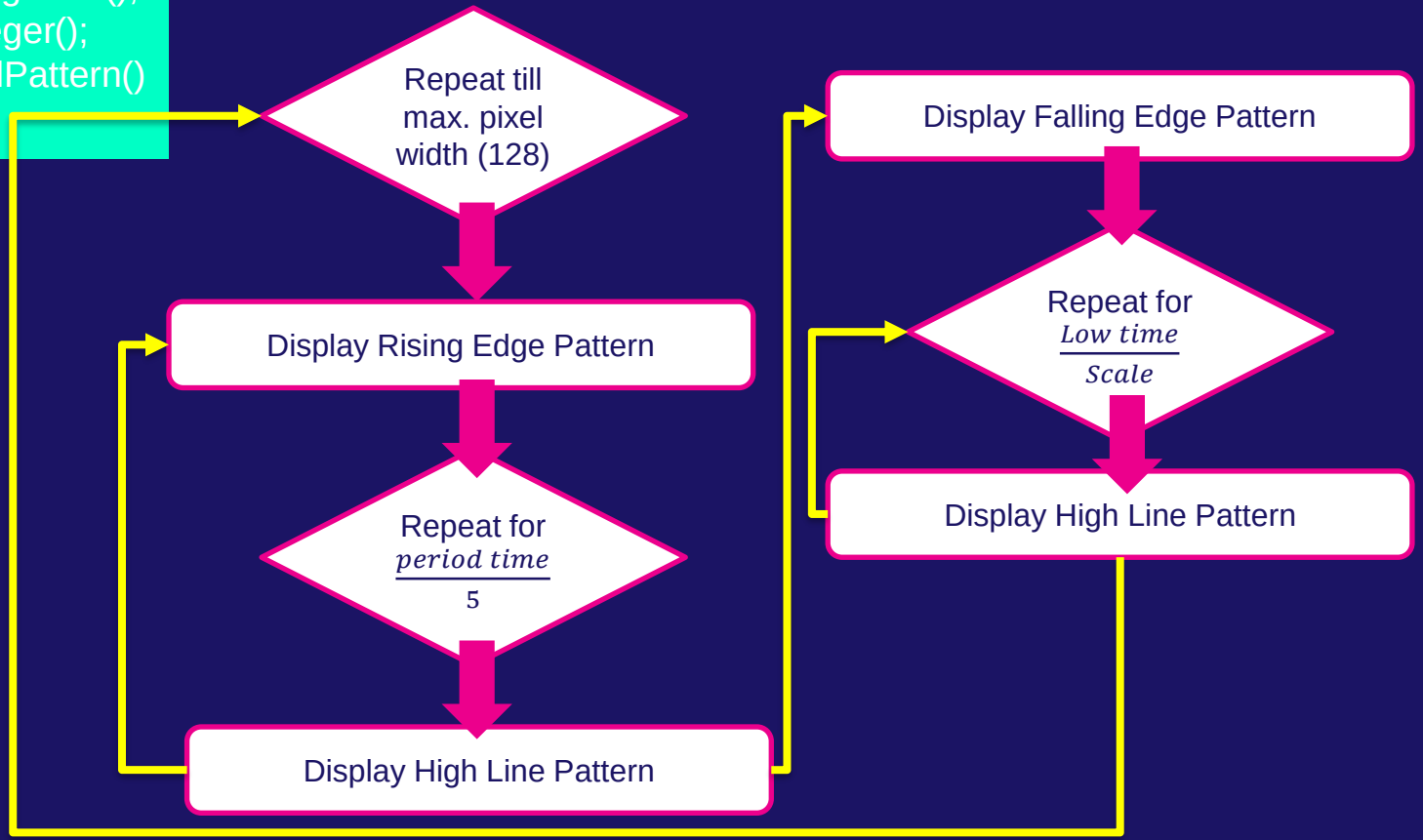
GLCD Line 5: Display Arrow on First Cycle Period Time.

GLCD Line 6: Display the PWM signal shape.

Draw_Signal
GLCD_DisplayString();
GLCD_DisplayFloatingPoint();
GLCD_DisplayInteger();
GLCD_DisplaySpecialPattern()
;

Flowchart

GLCD Line 6: Display the PWM signal shape.




THANKS !