Model Design

S1 Group 7 -จบเถอะ

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Model Design : Automatic Fan

► Case study 1: Automatic Fan

► Given information

  Ultrasonic Sensor

   - Turn on when near the fan

   - Turn off when away from the fan

  7-Segment

   - Display status of the fan

Model Design : Automatic Fan

▶ Specification

System information

-MCU : STM32L152RB

-Sensor : HC-SR04 module
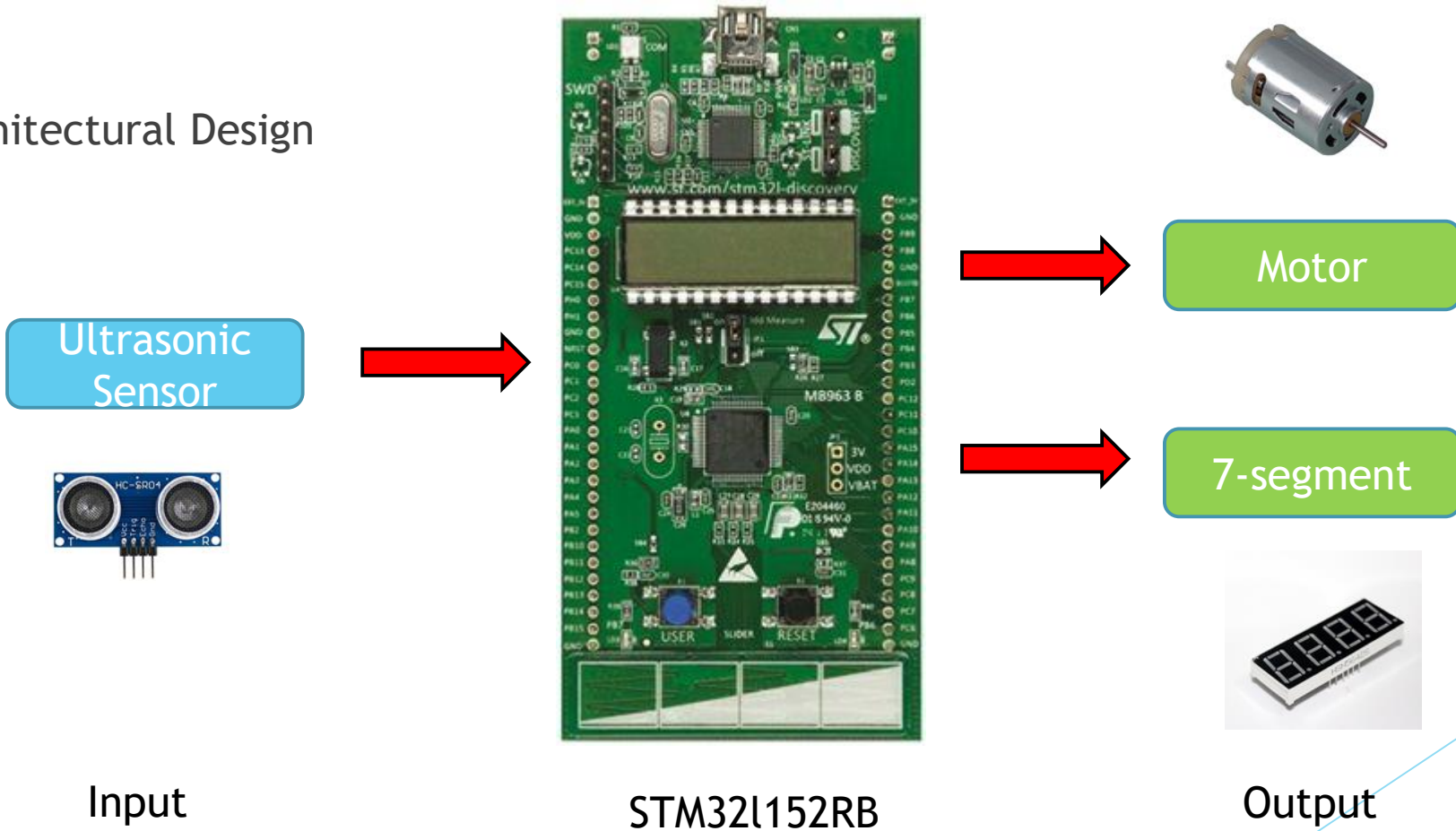
-Seven Segment

-Software :Keil/Language : C

Function

▶ Function

-Detect user when near the fan

-Automatic on/off control

-Show status of the fan

-Delay 10 seconds to turn off after user leave the fan

Model Design : Automatic Fan

▶ Architectural Design

Ultrasonic
Sensor

Motor

7-segment

Input

STM32l152RB

Output

Model Design : Automatic Fan

▶ Architectural Design

▶ Pin Used

Port	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A																
B																
C																

	Ultra Sonic
	Motor
	7-Segment
	No Pin Out

Model Design : Automatic Fan

- Detailed design
- Flowchart
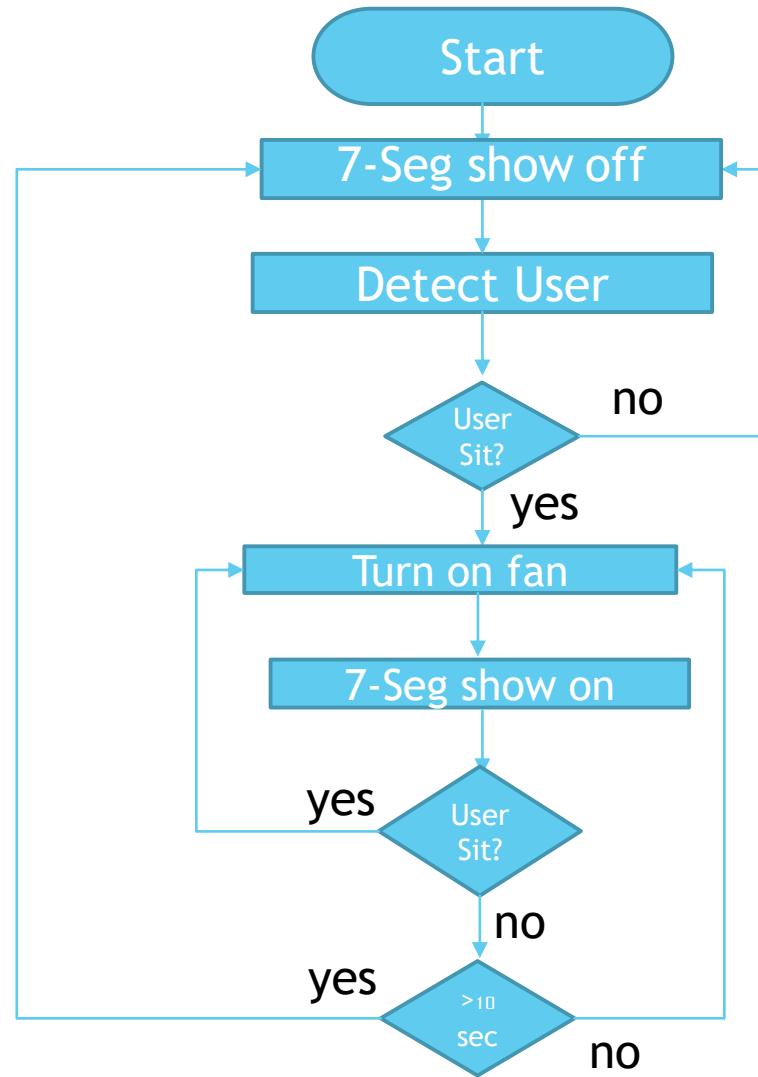
Model Design : Automatic Fan

▶ Detailed design
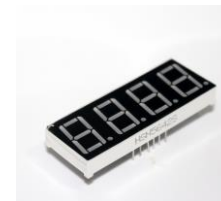
Ultrasonic Sensor

Function:
Automatic on/off

Function:
Show status

Motor

7-segment

Model Design : Automatic Fan

Project Plan

Task	Responsibility	January(Week)				February(Week)			
		1	2	3	4	1	2	3	4
Requirement&Planning	Pattanai	Plan							
		Done							
Specification	Pattanai,Thanawat		Plan						
			Done						
Architectural Design	Thanawat			Plan					
				Done					
Detailed Design	Supawit			Plan					
				Done					
Coding	Pattanai,Thanawat,					Plan			
	Supawit					Ongoing			
Unit Testing	Thanawat,Supawit						Plan		
Integration Testing	Thanawat,Supawit						Plan		
System Testing	Thanawat,Supawit						Plan		
Acceptance testing	Pattanai							Plan	
		Plan		Done		Ongoing		Delay	