

## LIST OF FIGURES

1.1	Index Board in Indonesia. . . . .	2
2.1	The New Dimension of IoT [b-ITU Report]. . . . .	5
2.2	Technical Overview of the IoT. . . . .	6
2.3	IoT Sub-systems. . . . .	7
2.4	DHT22 Temperature and Humidity Sensor. . . . .	7
2.5	MQ-135 Air Quality Sensor. . . . .	8
2.6	NodeMcu ESP8266. . . . .	8
2.7	Display of Firebase. . . . .	9
2.8	Kodular Logo. . . . .	10
2.9	Quadcopter. . . . .	10
2.10	Configuration of Rotors. . . . .	12
3.1	Overall System Block Diagram. . . . .	13
3.2	System Block Diagram. . . . .	14
3.3	Electronic Schematic of Tool. . . . .	16
3.4	Wiring Diagram of Sensor. . . . .	16
3.5	Flowchart of Sensor. . . . .	17
3.6	Arduino Coding. . . . .	18
3.7	Block Diagram of Platform. . . . .	19
3.8	Flowchart of Application. . . . .	20
3.9	User Interface Design. . . . .	21
3.10	Block Design. . . . .	22
3.11	System Block Diagram of Drone. . . . .	22
3.12	Flowchart of Drone. . . . .	24
3.13	Design of Quadcopter. . . . .	25
3.14	Motor Sunnysky x2216 1100kV. . . . .	26
3.15	ESC 40A Firmware. . . . .	26
3.16	MR Propeller 9045. . . . .	27
3.17	Lipo Battery 4s. . . . .	28
3.18	Pixhawk 2.5.8 . . . . .	28
3.19	Radio Telemetry 433MHZ . . . . .	29
3.20	Drone Frame F450. . . . .	29

4.1	The realization of the assembled Sensor. . . . .	32
4.2	The realization of the assembled Sensor MQ-135. . . . .	33
4.3	The realization of Platform Firebase. . . . .	34
4.4	The realization of application on Smartphone. . . . .	34
4.5	Display when the data has been retrieved. . . . .	35
4.6	The realization of the assembled drone. . . . .	36
4.7	Calibration of MQ-135. . . . .	37
4.8	Graph of Stability drone in Mission Planner. . . . .	38
4.9	Graph of Stability drone in Mission Planner. . . . .	39
4.10	Providing samples for reference data. . . . .	39
4.11	Comparison Graph of Temperature Measurement. . . . .	44
4.12	Display of Stopwatch. . . . .	45