

LIST OF FIGURE

Figure 2. 1 ESP32-CAM.....	11
Figure 2. 2 ESP32-CAM Pin.....	11
Figure 3. 1 Framework Smart Water Meter	18
Figure 3. 2 Development Stages	19
Figure 3. 3 Research Flow Diagram	20
Figure 3. 4 ESP32-CAM Scheme	23
Figure 3. 5 Microcontroller Dimensions.....	24
Figure 3. 6 Camera Dimensions.....	24
Figure 3. 7 USB Dimensions	25
Figure 3. 8 Detail Case Design (a) Front View, (b) Back View, (c) Left View, (d) Bottom View, (e) Top View & (f) Right View.....	25
Figure 3. 9 Detail Holder Design (a) Front View, (b) Overview, (c) Top View & (d) Bottom View	26
Figure 3. 10 Final Case Design (a) Front View (b) Back View & (c) Final Holder Design	26
Figure 3. 11 Implementation Design (a) Front View (b) Back View & (c) Overview	27
Figure 3. 12 Implementation Device.....	27
Figure 3. 13 ESP32-CAM Jumper	28
Figure 3. 14 Board and Port Select	28
Figure 3. 15 ESP32-CAM Code	29
Figure 3. 16 Configuration of Device	29
Figure 3. 17 ESP32-CAM Startup	29
Figure 3. 18 Take Image and Sending to Storage	30
Figure 3. 19 Firebase Storage Data.....	30
Figure 3. 20 Picture Result.....	30
Figure 3. 21 Login/Register Page.....	31
Figure 3. 22 Dashboard Page	31
Figure 3. 23 Data Form	32
Figure 3. 24 Reference Image	32
Figure 3. 25 Image Processing Result.....	33
Figure 3. 26 Odometer Result	33
Figure 3. 27 Calculation Result.....	33

Figure 3. 28 Bills.....	34
Figure 3. 29 Payments.....	34
Figure 4. 1 Odometer Result	40
Figure 5. 1 Transform Bussiness.....	47