UNIVERSITY of HOUSTON
COLLEGE of TECHNOLOGY

TEAM MEMBERS
SI NGUYEN LE   LOGAN MORRIS
ISAAC GAONA   CRISTIAN GUZMAN
ADVISOR   *PROFESSOR*
DR. RICARDO LENT   DR. MEQUANINT
MOGES

SLIC
BIOLOCK

BACKGROUND

❖ FBI'S UNIFORM CRIME REPORTING PROGRAM ESTIMATED **1,515,096 BURGLARIES** IN THE UNITED STATES 2016

❖ REPORTS OF OFFENSES RESULTED IN AN ESTIMATED **$3.6 BILLION** IN DEFICITS

❖ AVERAGE OF **$2,361** LOSS PER BURGLARY OFFENSE.

❖ **BIOMETRIC FINGERPRINT** PROVIDES **UNIQUENESS** TO **SECURITY**

OBJECTIVE

❖ **SECURITY**
  ➢ **BIOMETRIC FINGERPRINT**
  ➢ **ONE DISTINCT ENTRY POINT**

❖ **EFFICIENCY**
  ➢ **10 FINGERPRINTS IN MEMORY**
  ➢ **AUTOMATIC RELOCK MECHANISM**

❖ **FEASIBILITY**
  ➢ **MOBILE APPLICATION CONTROL**
  ➢ **BACKUP BATTERY LIFELINE**

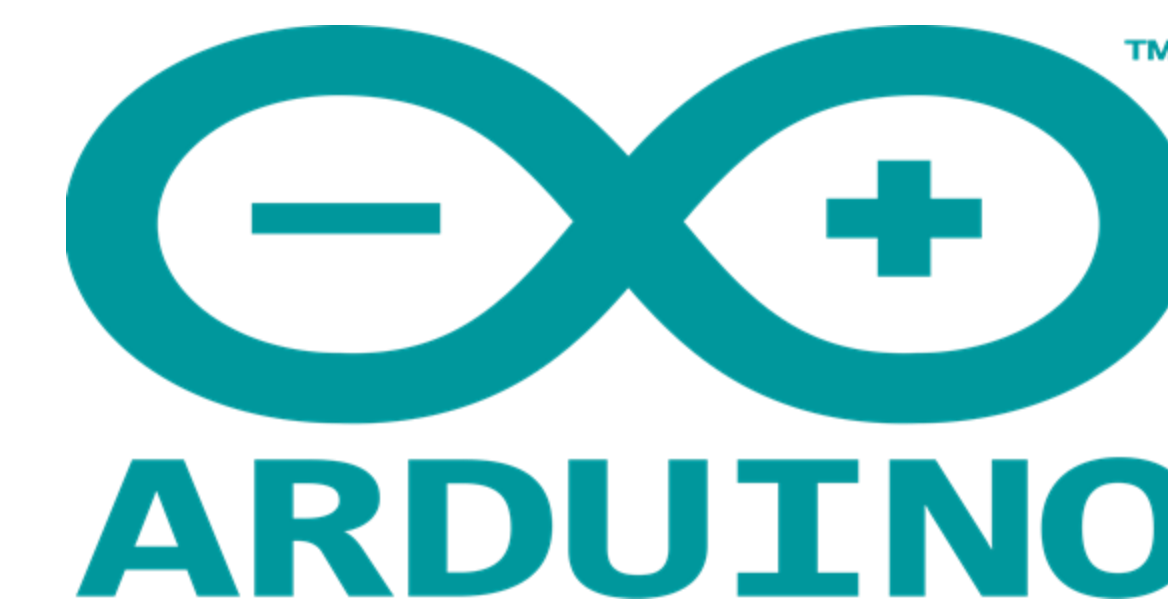❖ **AFFORDABILITY**
  ➢ **25% REASONABLY CHEAPER**

DESIGN

ANDROID   **adafruit**

LOCK MECHANISM → **55g SERVO MOTOR**
DETECTOR → **FINGERPRINT SCANNER**
MICROCONTROLLER → **ARDUINO UNO**
POWER SOURCE → **MAIN & BACKUP AA BATTERIES**
REMOTE CAPABILITY → **ANDROID APPLICATION**

ARDUINO   **Xamarin**

ABSTRACT

IN ORDER TO COMBAT BURGLARIES AND LOST RESOURCES, WE DESIGNED A **STRONG SECURITY SYSTEM** GEARED TOWARDS **HOMEOWNERS** & **SMALL BUSINESSES**. THE SYSTEM IS IDEALLY FOCUSED TOWARD **EFFICIENCY**, **FEASIBILITY**, & **AFFORDABILITY**. OUR EFFICIENCY IS DEPENDENT UPON **FINGERPRINT SENSORS** AS A FOUNDATION OF THE SECURITY. OUR **MOBILE APPLICATION** THEN PROVIDES THE USER WITH A CONVENIENT METHOD OF CONTROLLING THE LOCK. LASTLY, OUR DESIGN IS **PROJECTED TO BE LOW-COST** COMPARED TO CURRENT PRODUCTS IN THE MARKET.

PROCESS

CONCLUSION
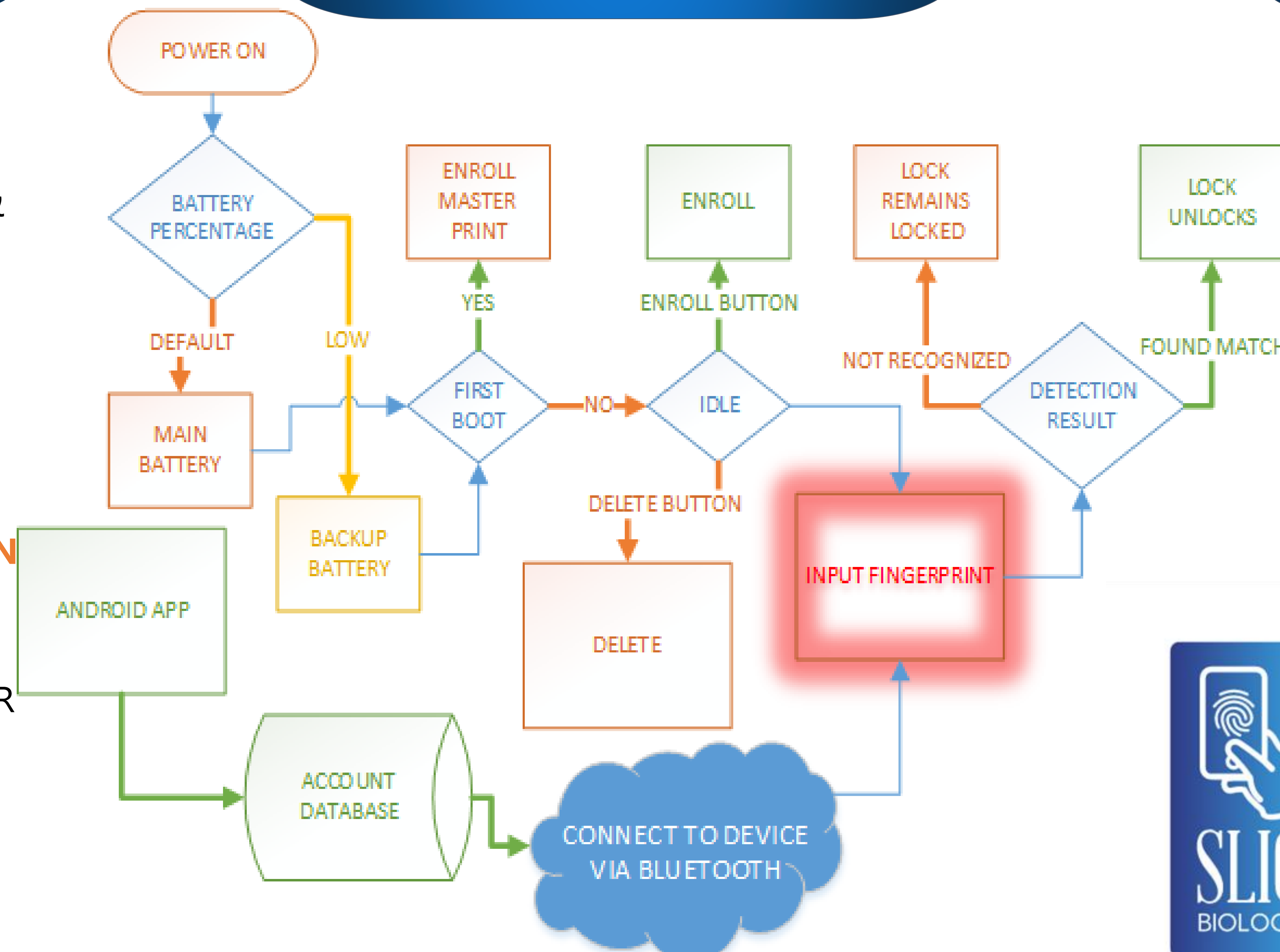
❖ **FINGERPRINT ACCESS PROVIDES STRONGER SECURITY THAN MECHANICAL KEY & PASSCODES**

❖ **EFFICIENTLY STORE SET AMOUNT OF PASSWORDS & AUTOMATIC RESET THE LOCK**

❖ **ANDROID APPLICATION ALLOWS USERS TO OPERATE THE LOCK REMOTELY VIA BLUETOOTH**

❖ **BUILT-IN BATTERY BACK-UP TO PREVENT LOCK-INS**

❖ **LOWER COST EXPENSES BY ONLY INCLUDING NECESSARY FEATURES**

Logan lrmorri3@uh.edu | Isaac igaona@uh.edu | Cristian caguzman2@uh.edu | Si sdle3@uh.edu | Advisor: rlent@uh.edu | Professor: mmoges@uh.edu | Fall 2018