NextGen IoT Hackathon

Project Proposal

Team Name:

Semicolon

Product Name:

Fingerprint based electronic voting system for Sri Lankan Election System

Sustainable Goal Addressed:

Electrification of the electoral system

Problem Definition

Sri Lanka, being the oldest democracy in South Asia, is still using an old traditional paper-based election system. There are many problems with that method.

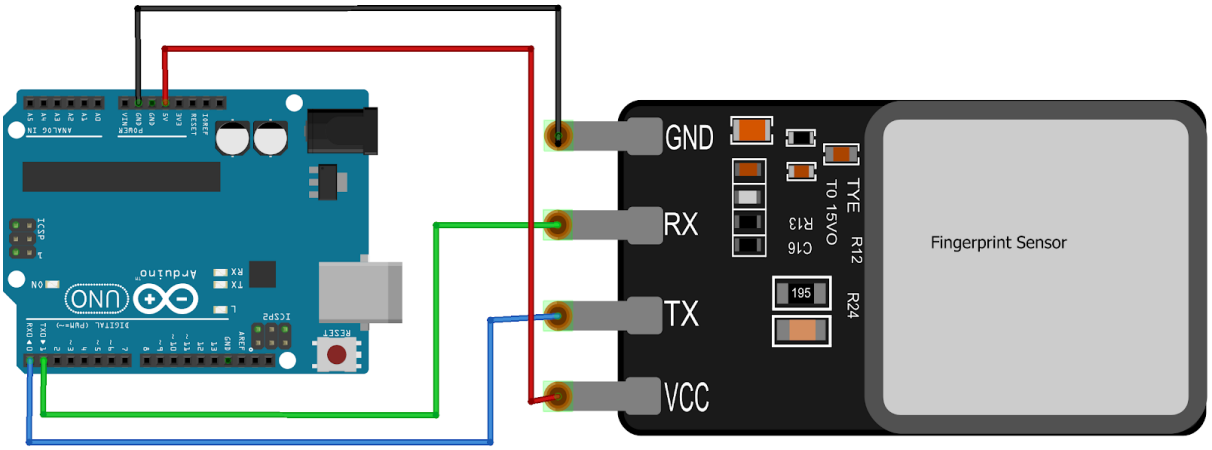
- Security is a must thing to consider in an election system, but the traditional voting system doesn't have strong security.
- Delivery Mechanism: In the traditional voting system, there are collected election cards in a box. And after the election the boxes delivery started.
- There are some problems in delivering election boxes.
- Some people make mistakes while they are voting.
- Some people add fake votes.
- takes some time to calculate a person's votes.
- low confidently.
- sometimes not an accurate collection of votes and average.
- take a lot of time to deliver election boxes.

Solution

The proposed system is introduced with a unique computerized application for the Sri Lankan election system instead of the traditional paper-based system. It is a web-based application. Voters can easily cast their votes through this system. According to the current system of voting in Sri Lanka, there are two ways in which one voter can give one or three preferences. The system is capable of handling both of these methods. The entire system is administered by an administrator and the administration of the polling station is administered by the polling center inspector. The system uses fingerprints to identify the voter. This system includes a non-fingerprint system for disabled voters who cannot provide a fingerprint. That system is handled by a polling center inspector Once a voter inserts his fingerprint into the system, he is allowed to vote only if it is valid. Once a voter has cast a vote, this system automatically deposits that preference data system after decoding. This system can reduce the number of valid votes and reduce time the counting of votes.

Technical Design

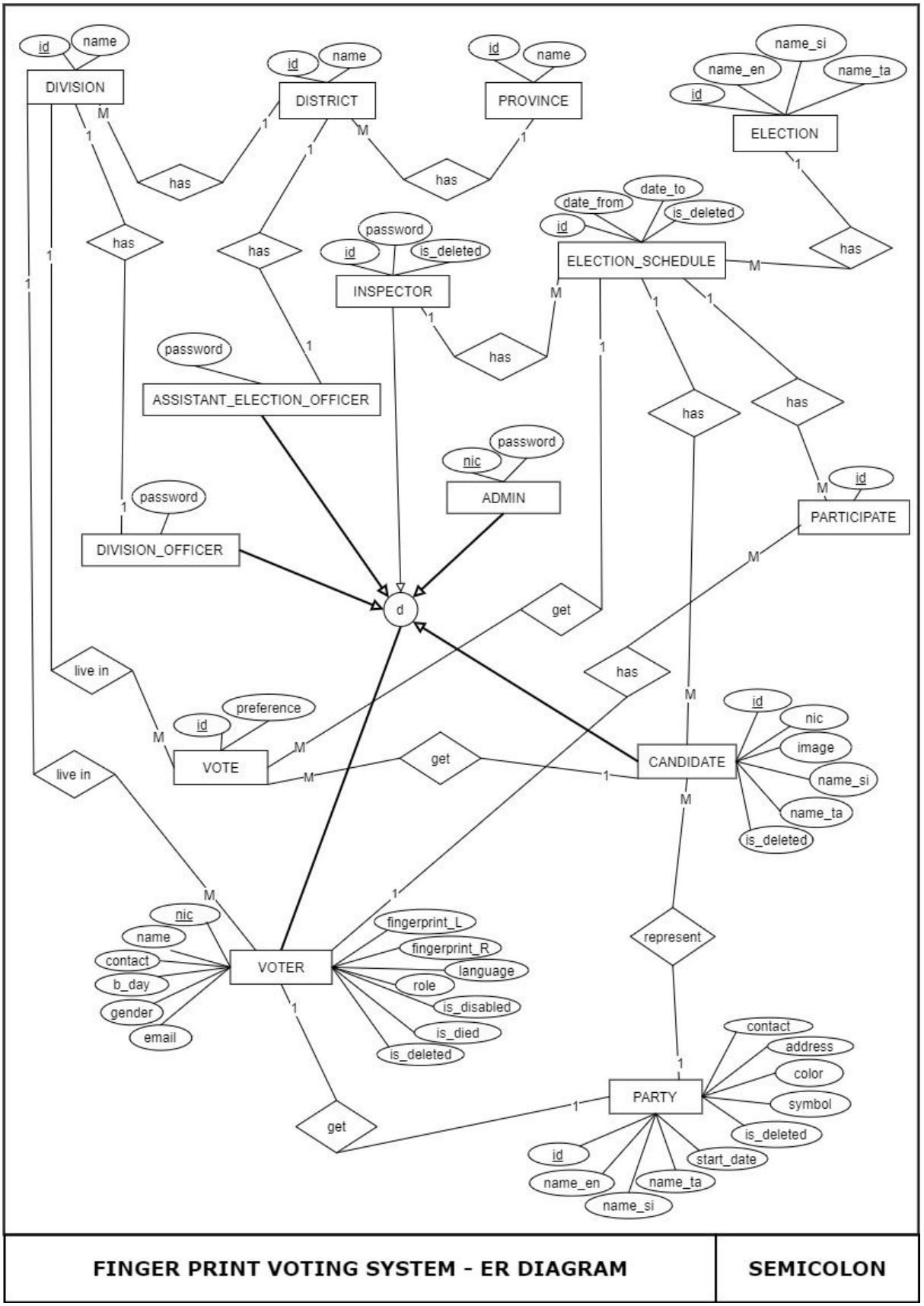
Fingerprint module connect with Arduino UNO



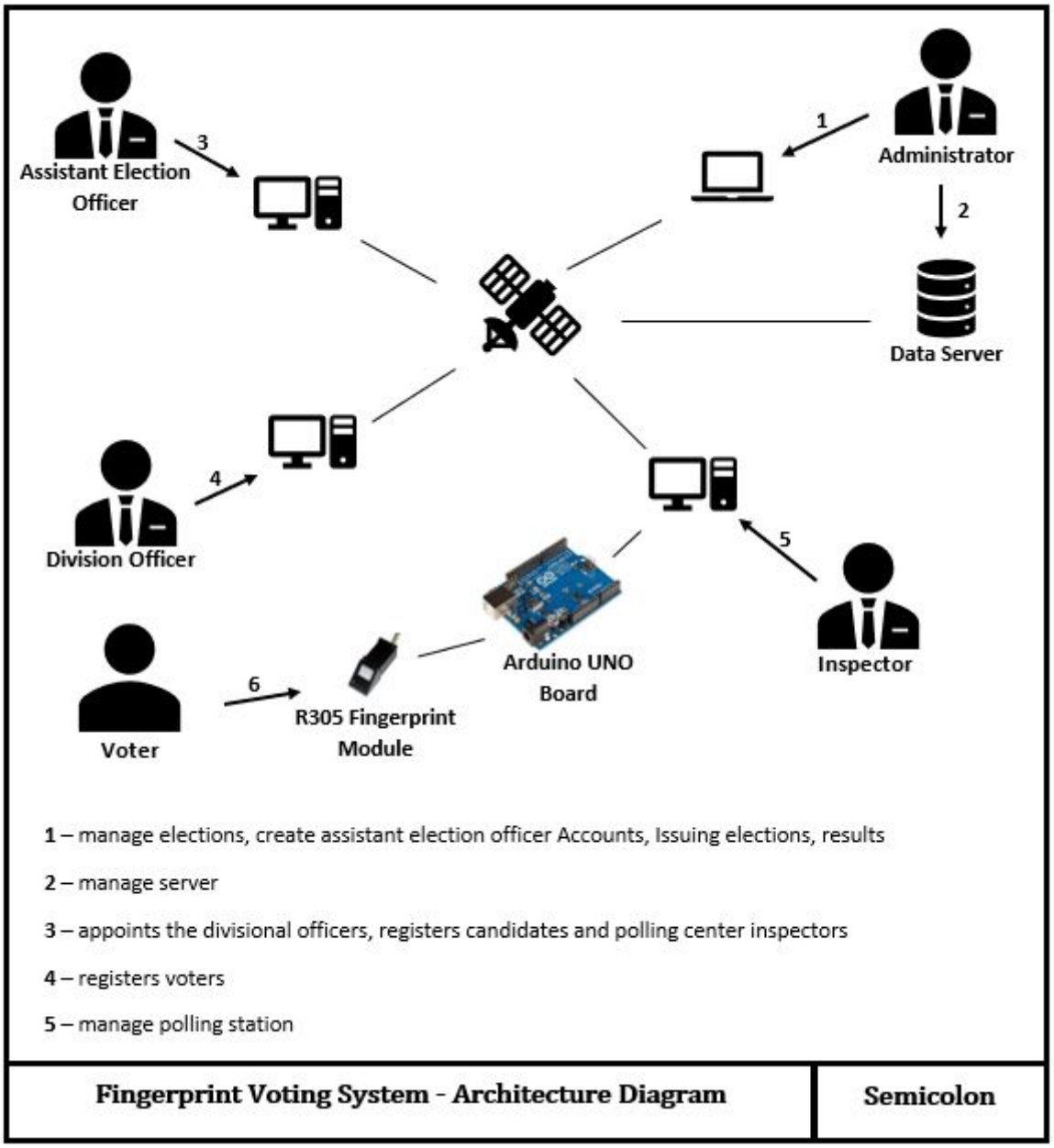
Technologies/Resources Used in the Application

- ➔ Php
- ➔ MySQL
- ➔ FPDF/TCPDF
- ➔ Computer
- ➔ Arduino 1.8.9 software
- ➔ Arduino UNO board
- ➔ R305 Fingerprint module

ER Diagram


DIVISION
DISTRICT
PROVINCE
ELECTION
ELECTION_SCHEDULE
INSPECTOR
ASSISTANT_ELECTION_OFFICER
ADMIN
DIVISION_OFFICER
PARTICIPATE
CANDIDATE
VOTE
VOTER
PARTY
has
live in
get
represent
d
id
name
name_si
name_en
name_ta
date_to
date_from
is_deleted
password
nic
preference
image
contact
address
color
symbol
start_date
fingerprint_L
fingerprint_R
language
role
is_disabled
is_died
b_day
gender
email
FINGER PRINT VOTING SYSTEM - ER DIAGRAM
SEMICOLON

Architecture Diagram



User Scenarios

According to the fingerprint-based voting system, all election activities are administered by the Administrator, the Assistant Election Officer, the Division Officer and the Polling Center Inspector. The entire election is controlled by the Administrator. He also organizes elections through the system, and is responsible for releasing election results through the system. The Administrator appoints one Assistant Election Officer for each district. Only an administrator can monitor the results of an election.

Assistant Election Officer conducts election related work in a district and he appoints the Divisional Officers. The Assistant Election Officer registers candidates and polling center inspectors in the district. Voters are registered by the Divisional Officers who are appointed to each regional. It is difficult to register voters before installing the system, but it is not difficult to keep the database up to date.

No officer is permitted to log on to the election administration website during an election. Once a voter has voted, the data is encrypted and entered into the database, and also it entered into the log entries of the relevant computer. Data security is ensured by placing a log entry in the relevant computer. Voters can enter the system only to vote if there is an election. The system cannot be used for voting after the election period is over. It is automatically controlled by the system.

First, the identity of the voter must be verified in the presence of the Polling Center Inspector. After entering the system using a fingerprint, a list of election

parties and The first ever innovation battle based on data science| Project Proposal election candidates for his district (ballot paper) are displayed. If the relevant vote is used, it will automatically exit the system.

Once the election is over, the administrator will be able to see the election results and he is responsible for releasing the results.

Individual Contribution

Fingerprint (IoT)	H. D. R. M. S. Kumara
Web	A. M. L .S Sandaruwan D. S. Weeraddana H. D. R. M. S. Kumara W. M. M. M. Bandara W. W. M. S. Karunasena
Data Base	
Documentation	

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