ELECTRONIC VOTING MACHINE USING RPi

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0.1 Highlights of the Project

1. **Significance of the project:**
   The EVM is a Simple Electronic Device used to record votes in place of valid papers and boxes which were used earlier in voting system.
   Conventionally, voting booth is used for casting votes in both centralized and distributed places. Voting is done under the supervision of authorized parties. Counting of votes is done manually once the election is over. But with the rapid growth of electronic voting system, computer technology and cryptography methods can be used that substitute the occurrence and most significantly error-prone human Component.
   Through this we can potentially increase the productivity and accuracy of voting processes by eliminating the invalid voters and also to help accumulating and counting the votes.

2. **Limitations of the project:**
   By far, the biggest concern about electronic voting is **hacking**. As with any electronic device, there is always the risk that someone without authorization would be able to access and alter the results of an election.The problem with using these types of verification is that anyone who obtains these pieces of information could login and cast a vote for someone else.
   The expense of all this would be too great for many governments to invest in, especially if the tech is unsure of being a long-term solution.

3. **Software used:**
   1. Python 3.5

4. **Tools:**
   1. Push Button
   2. Raspberry 3 B+

5. **Techniques**:
   1. Interfacing of RPi with Python
   2. Generation and making use of Database with the afore mentioned interface

0.2 Problem Statements

The common problem related with elections is the unfair use of voting machines.The voter id needs to be manually checked by election committee personal. There is also the problem of double voting which we plan to resolve with our project through the database connectivity.

0.3 Smart Goals

1. **Auditable, transparent, secure:**
   Automated elections mean that people can trust the results because it allows for a process that is so auditable, transparent and secure. Of course, electronic voting also helps reduce human error.

2. **Faster results:**
   For country like India, Electronic voting and electronic counting means that people can get official election results within hours, instead of weeks. Again, this builds trust.

3. **Increase engagement and turnout:**
   Technology will be a useful way of improving voter education and registration, to increase engagement and voter turnout.

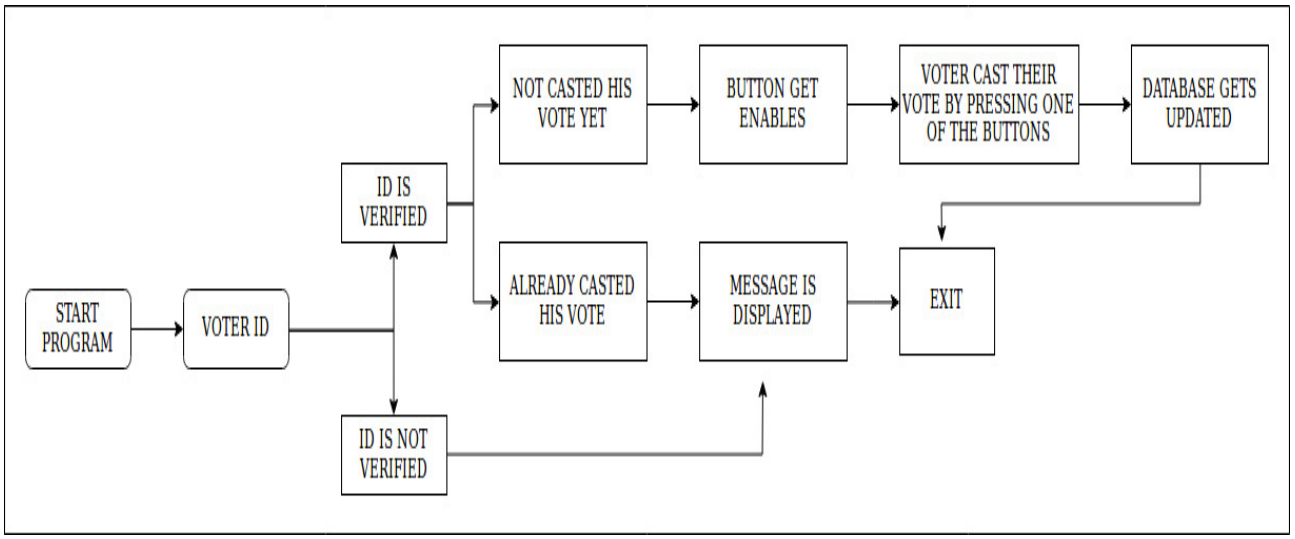
4. **Increases accessibility:**
   It is also vitally important that everyone who is eligible to participate in elections can do so. And electronic voting is very good at making voting more accessible, meaning it's easier for disable people to vote independently.

0.4 Things We Need Help with and my Plan to Resolve

1. **Introduction:**
   Raspberry Pi is an ARM cortex based popular development board. It is a single board computer working on low power with a very good processing speed and memory. Raspberry Pi can be used for performing different functions at a time, like a normal PC.Here we are going to build an Electronic Voting Machine using Raspberry Pi Board. We all are aware about the Electronic Voting Machine (EVM) which is used to vote in Elections, by pressing a simple button. We have put together Voting Machine in which Voter is authenticated by database of the actual voter ID, so that only authenticated votes can be counted.

2. **Methodology:**
   RPi 3+ is used for validation, collection and calculation of votes.With the help of Tkinter module, GUI page is created where Voter's Voter ID will be entered and get validated in two prospects.Firstly whether the ID is valid or not, Secondly whether he has already casted his vote or not. When both the parameters are cross-checked with pre-linked database then the buttons will be activated for a brief amount of time only.
   After all this the linked Database will get updated for that voter id and result will be linked with other database

3. **Sequence Diagram:**



0.5 Conclusion

Our program drive efficiencies into every stage of the election process. We make voter registration faster and more accurate. We also speed up voter authentication, preserve voter secrecy, and make the storage, counting database connected.

0.6 References

1. *https://www.raspberrypi.org/documentation/usage/gpio/*

2. *https://docs.python.org/3.5/tutorial/*