Course: Computer Application in Control

Title of the project:

"RFID Based Attendance Management System"

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Project Description:

This project is based on the idea of using RFID cards in various application, which are used in this project for the attendance management system. This system is easy to use and it has wide range of application in all companies, banks, factories, and even educational institutions such as universities.

The purpose of the project is to design and implement an attendance system with its executable software (LabVIEW) based on RFID technology. The serial module of LabVIEW receives data sent by the processor. After receiving the data serially, LabVIEW access the already present data in the database and converts them into LabVIEW compatible formats. Then check if the data received at the USB terminal matches with any of the present data (Database). If match then the database is updated to the new value. If unsuccessful then LabVIEW simply does not change the database.

Project requirements:

- Hardware part:

1. Arduino as the main processor.
2. RFID module
3. Tags and cards with RFID receiver.

- Software part:

1. LabVIEW (as a Software)
2. Excel (as a Database)

Project Features:

1) The ability to record maximum number of 50 cards in the software memory with full specifications. (Each tag or card represents a human)

2) The ability to remove cards.

3) Having the ability to enter a specific password when registering or removing a new card (LOGIN option).

*A separate panel on software for registering and removing cards.

4) The ability to record important information such as name, ID number, postal code, age, gender, nationality, and blood group of the company's employees in an Excel file named database. (Each row for one person)

5) A warning to the user if the information is not fully entered when registering a new card.

6) Ability to display online information relating to each card when using the card.

7) Ability to record the time of arrival and departure with date and also the total amount of employees' attendance in the company (in minutes).

8) The ability to calculate the total hours of people's presence (in hours)

9) Ability to output all the information (excel) at any time, depending on the time interval entered by the user. For example, from7 am in the Monday morning until 2 o'clock Friday afternoon.

* It is necessary to store the data in separate columns with the date and time of the registration.

* Storage location is variable.

*It is necessary to enter the file's name by user.

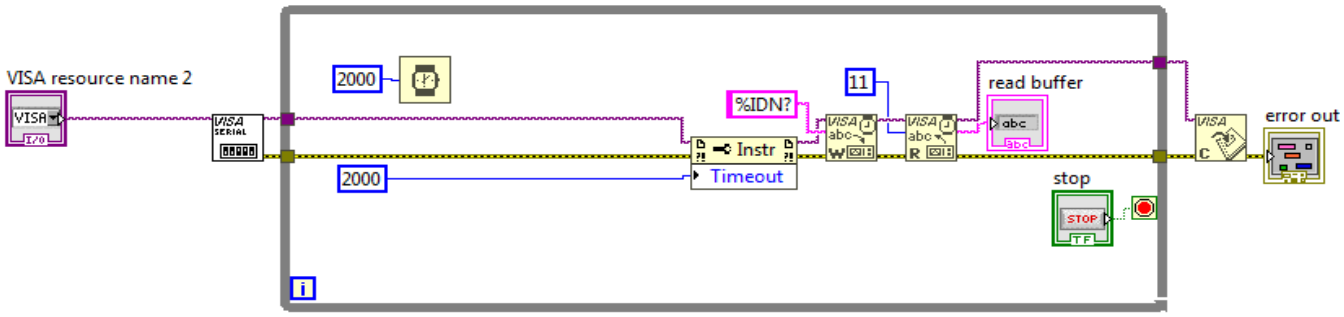
10) Show the people who are present with the arrival time (people who use the card to enter)

Programming part:

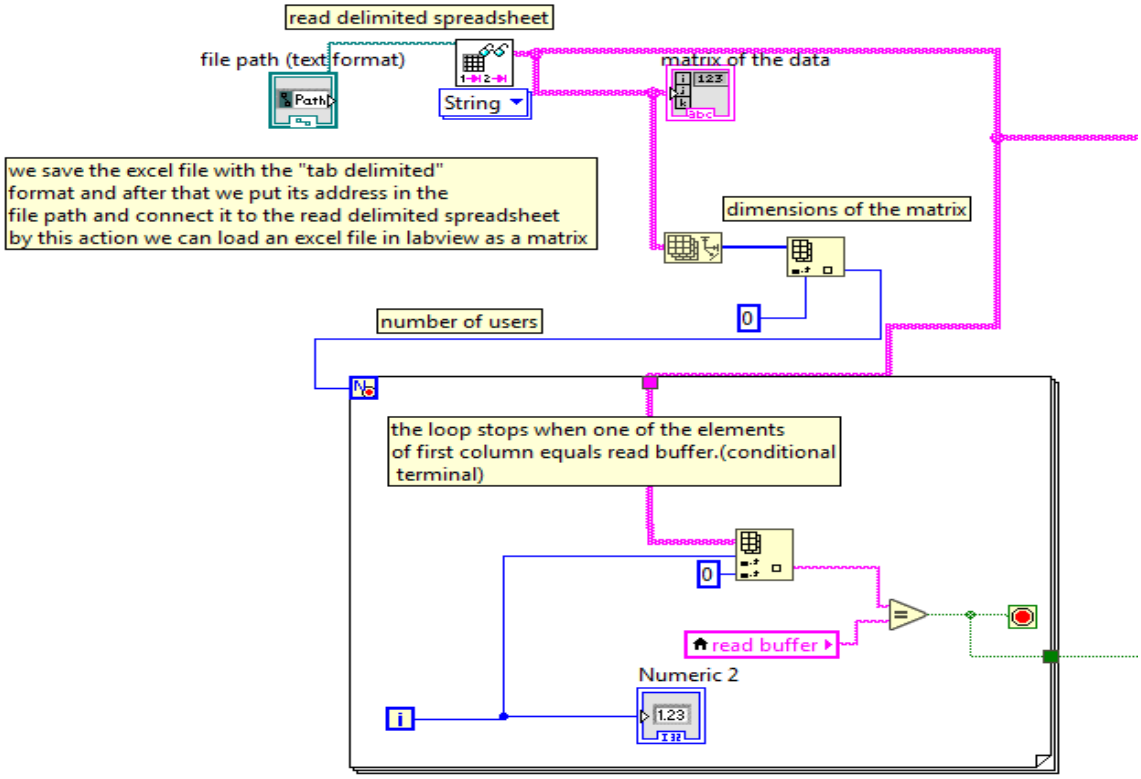
Here is the code for hardware part:

Here is the code for software part (LabVIEW):

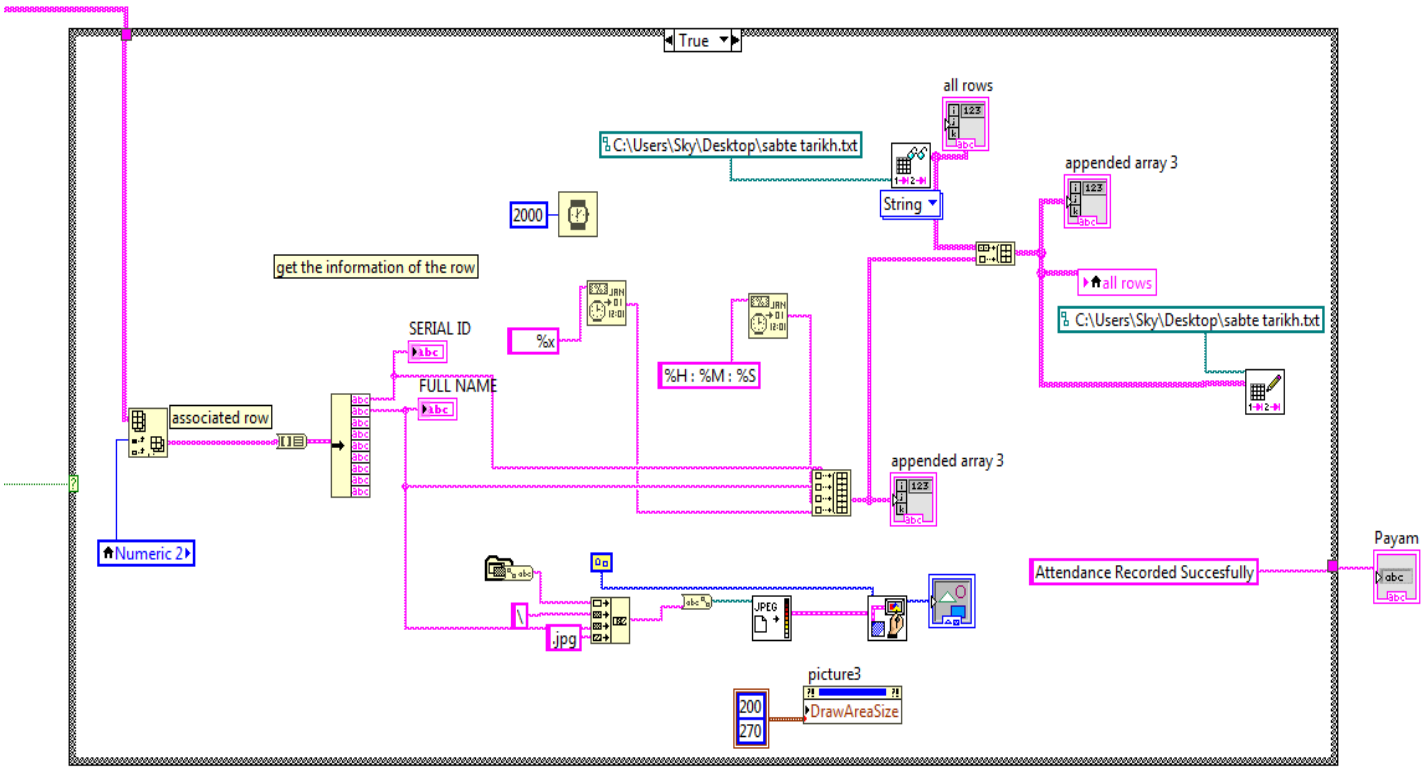
Reading serial port:



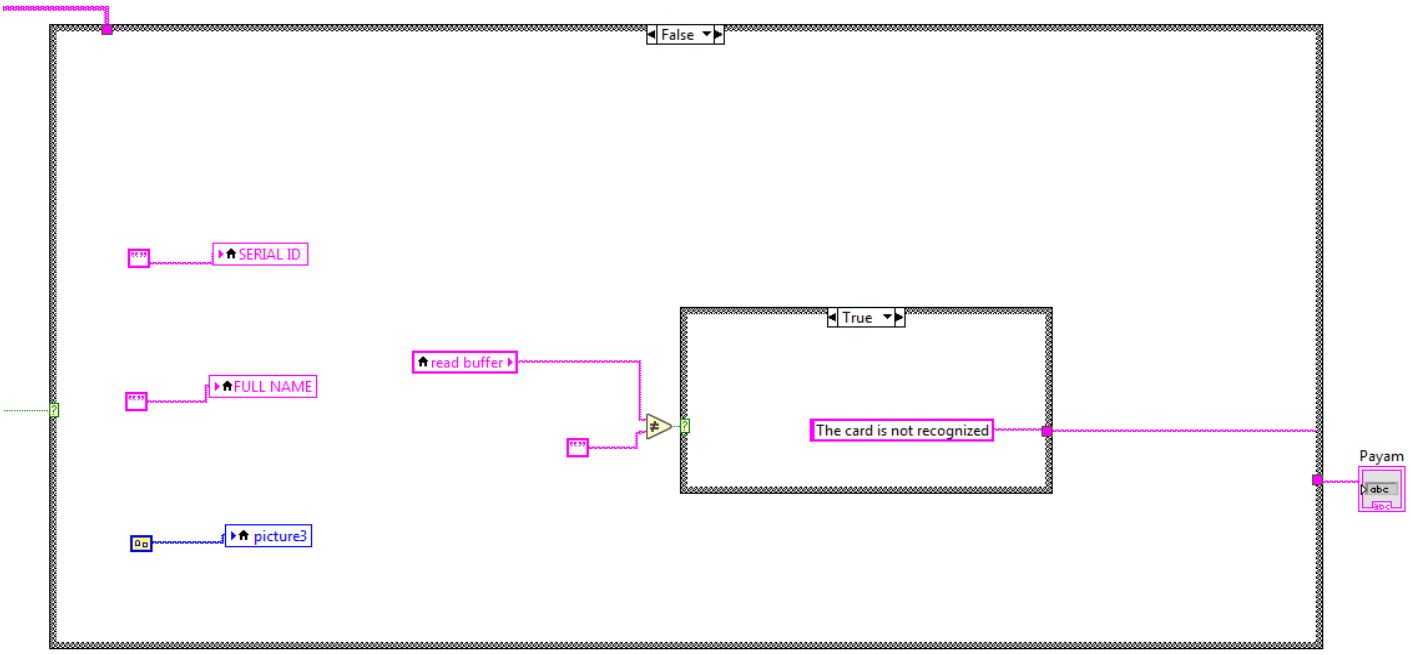
Loading database in software:



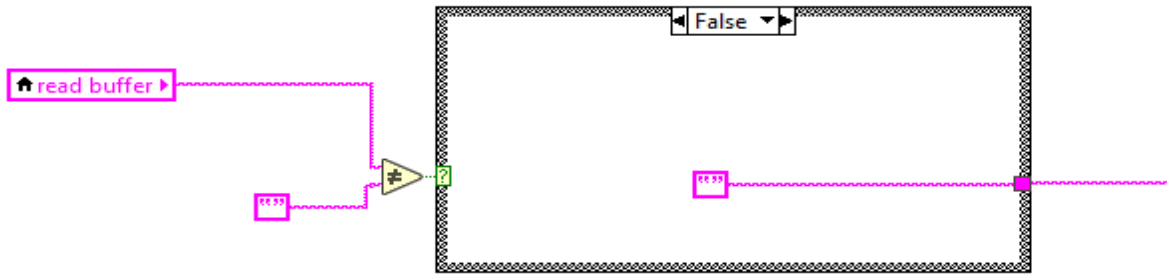
Display user information relating to each card: (If the loop stop is True)



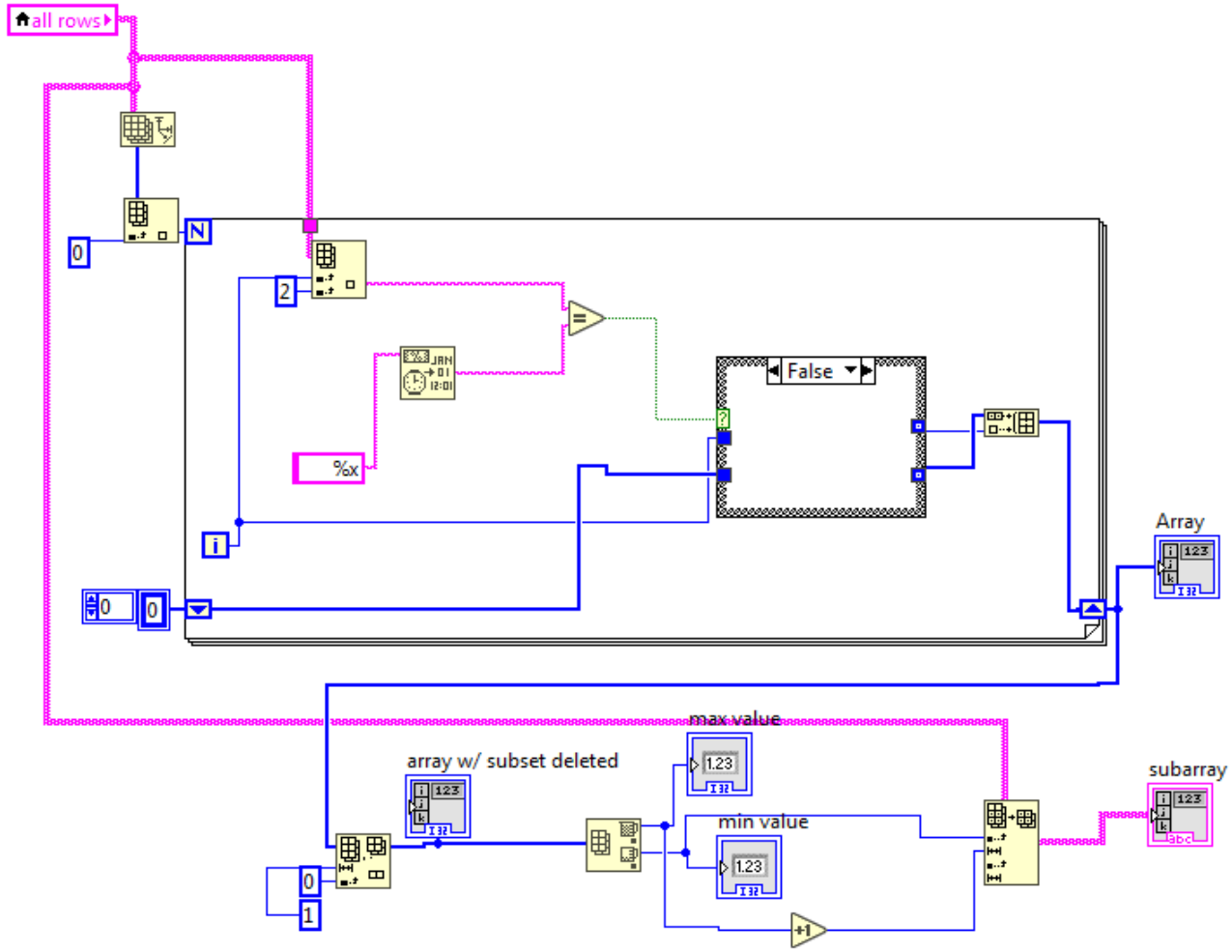
Display warning: (If the loop stop is False)



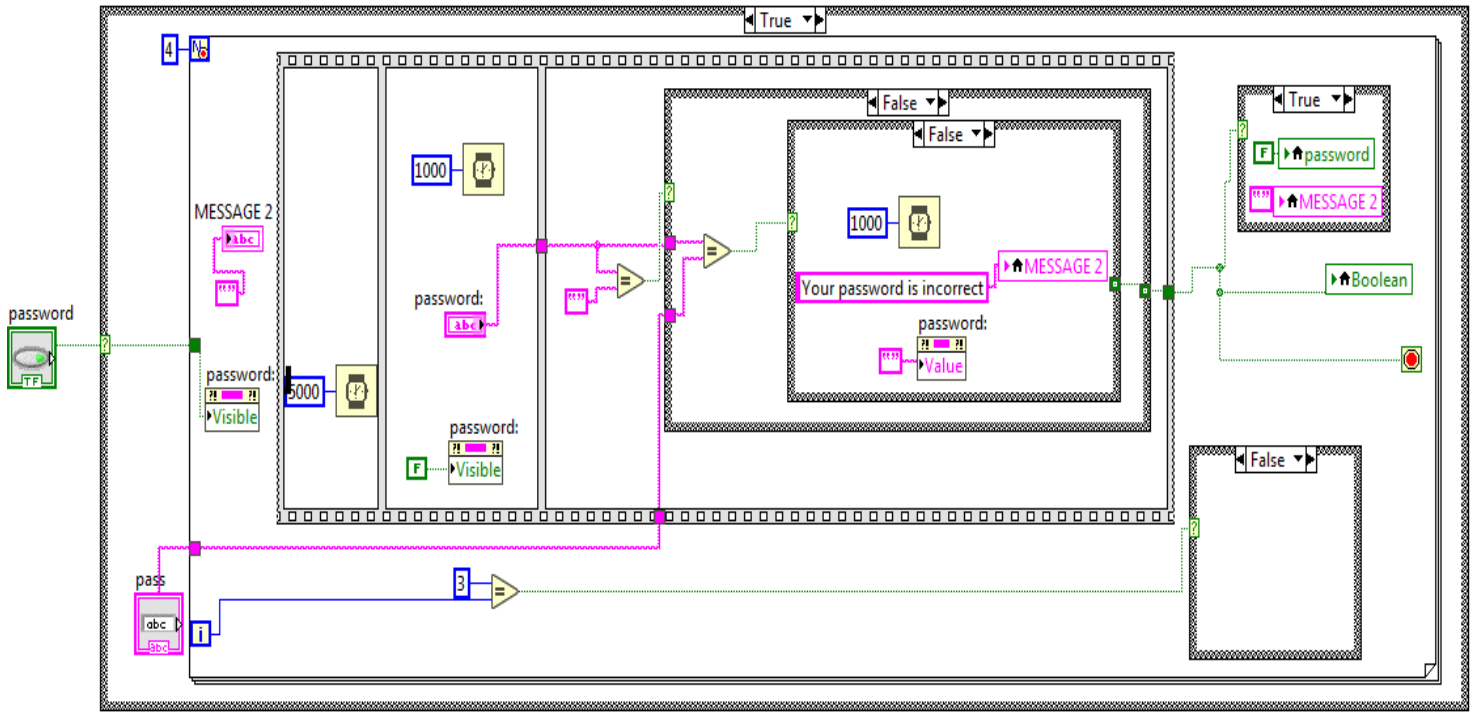
If no card used yet:



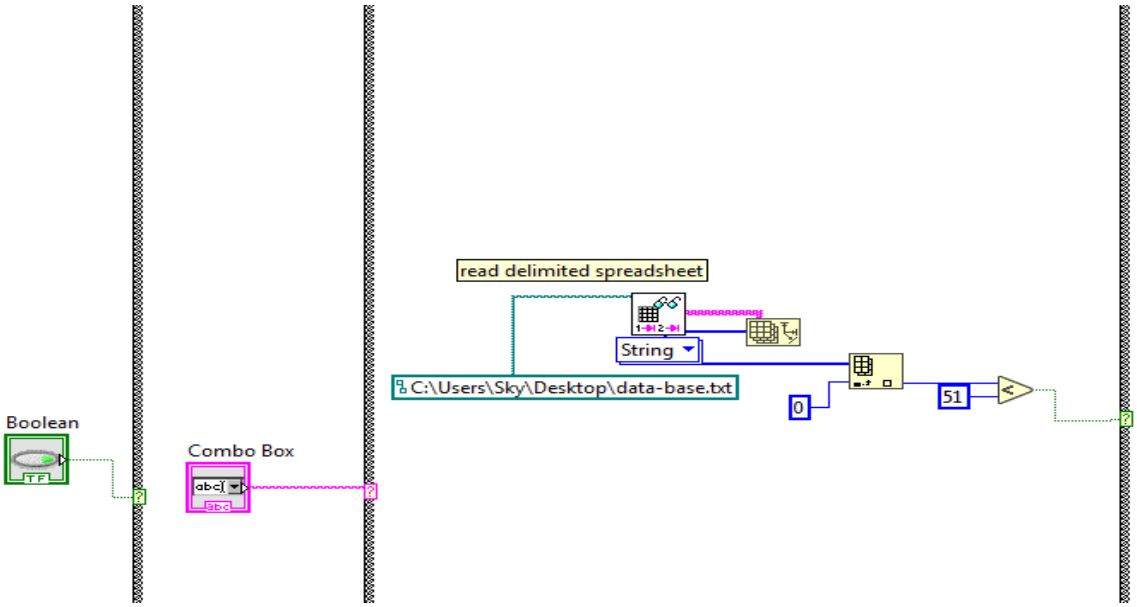
Record the arrival time and departure time of each card (user) with date:



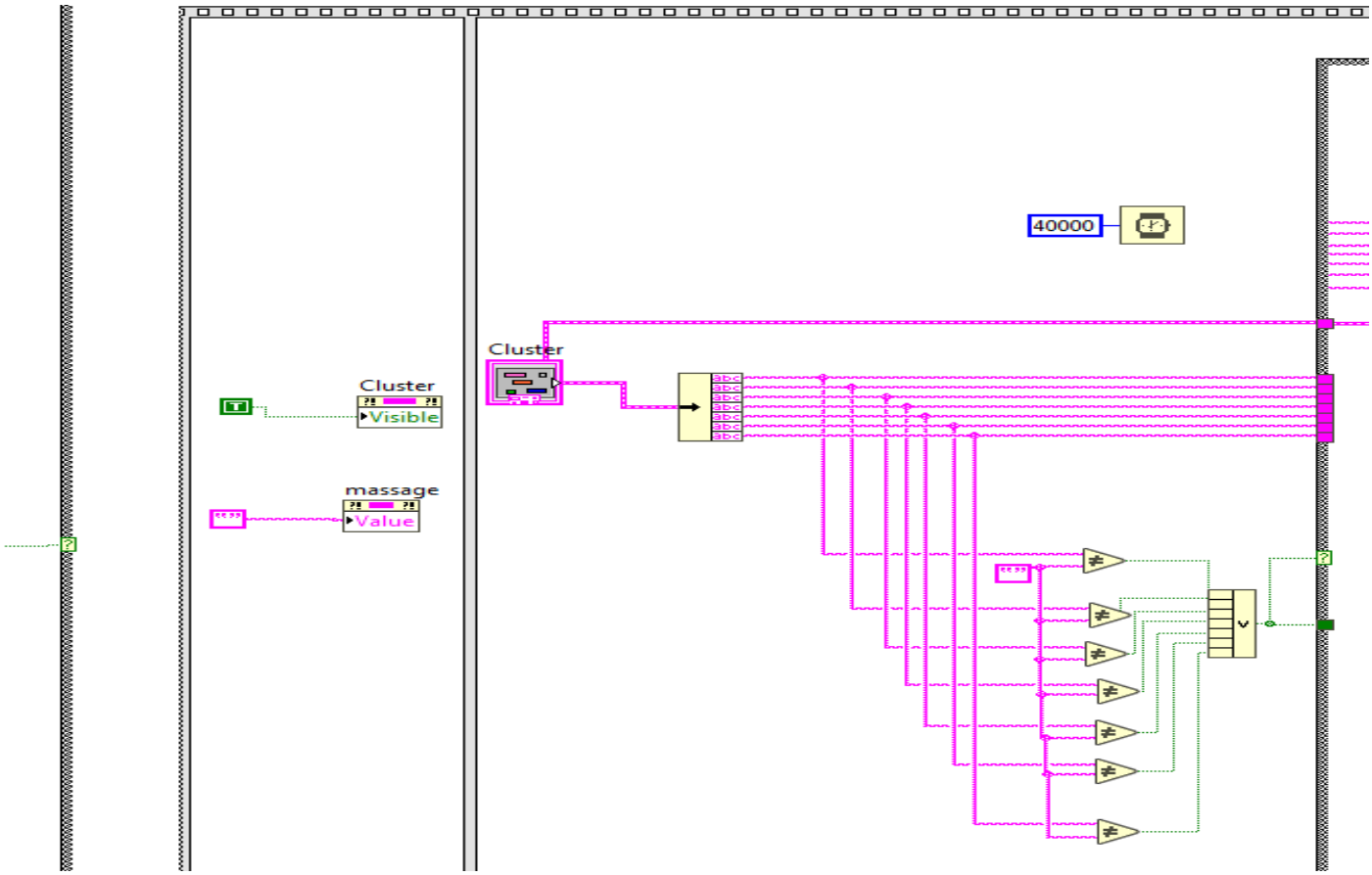
LOGIN option with specific password: (For registering or removing a new card)



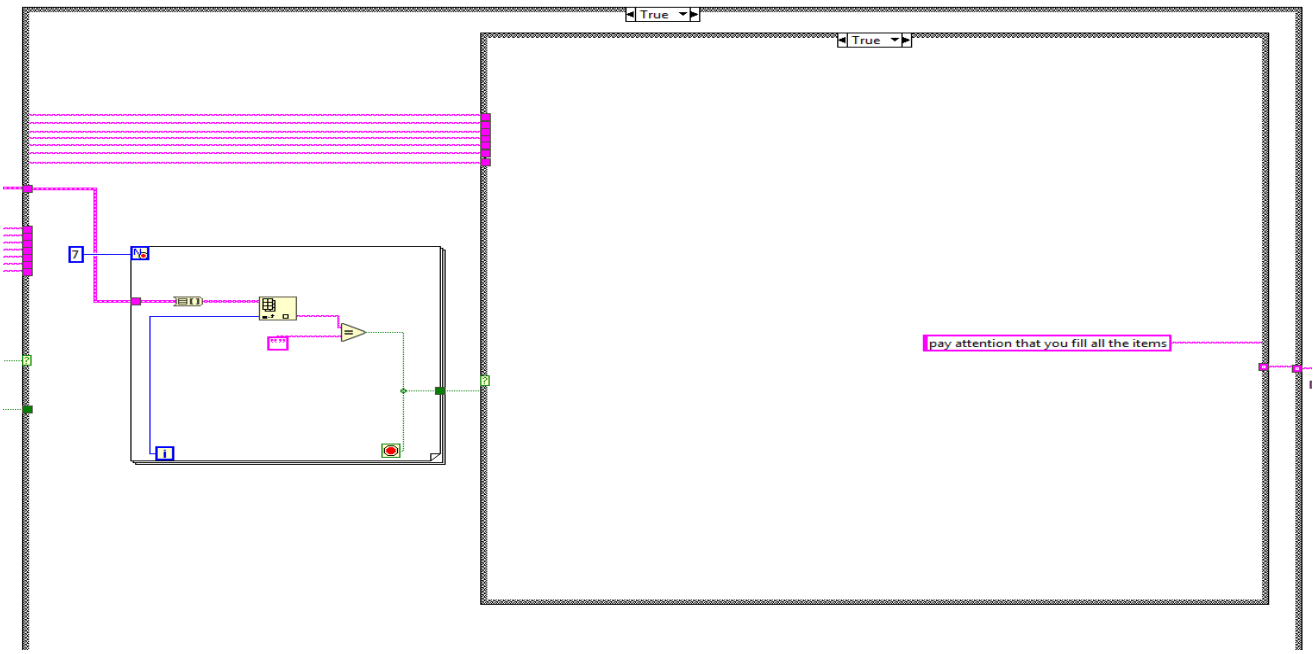
Check if the number of registered card less than 50 cards in the software memory with full specifications:



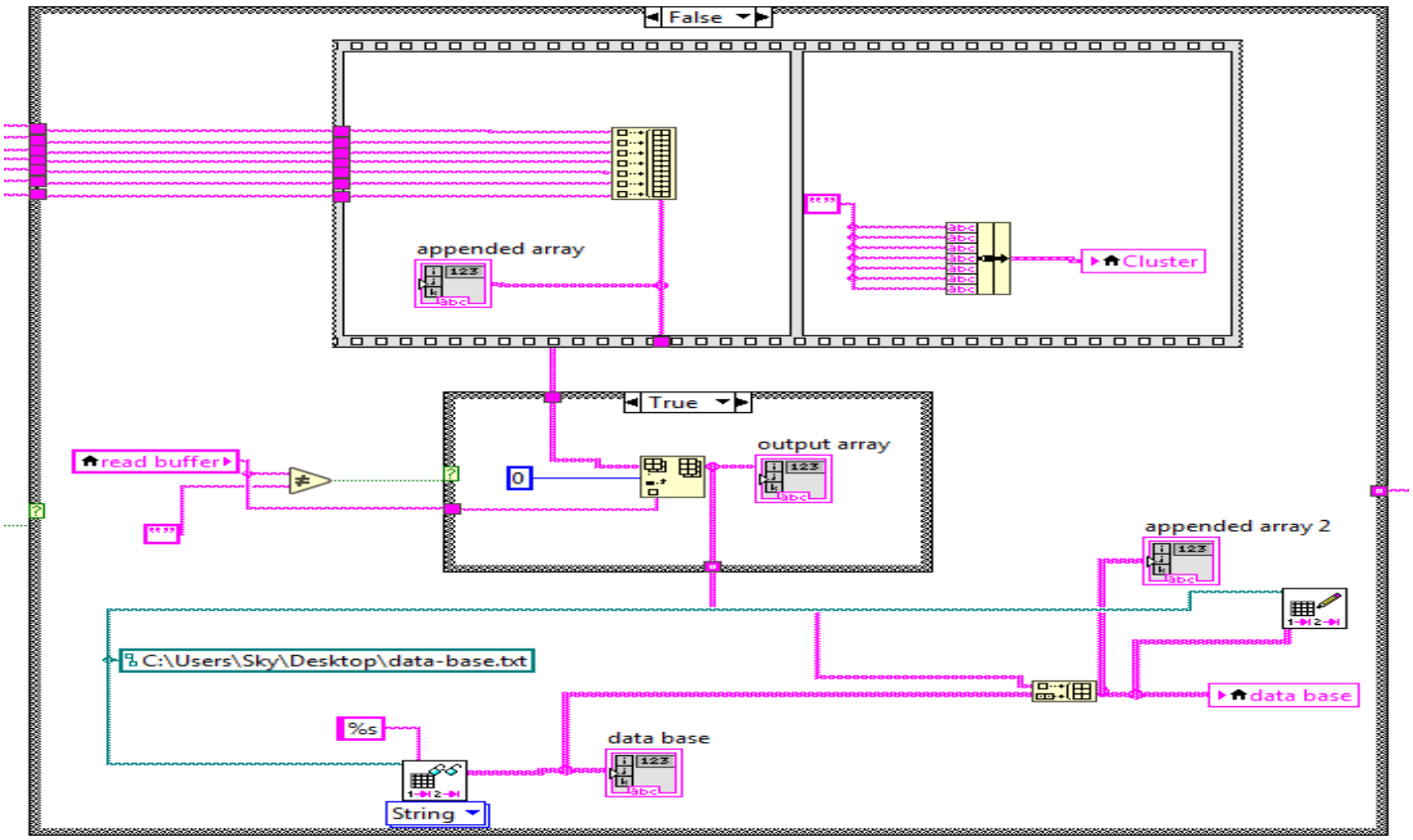
Enter new user information for registration:



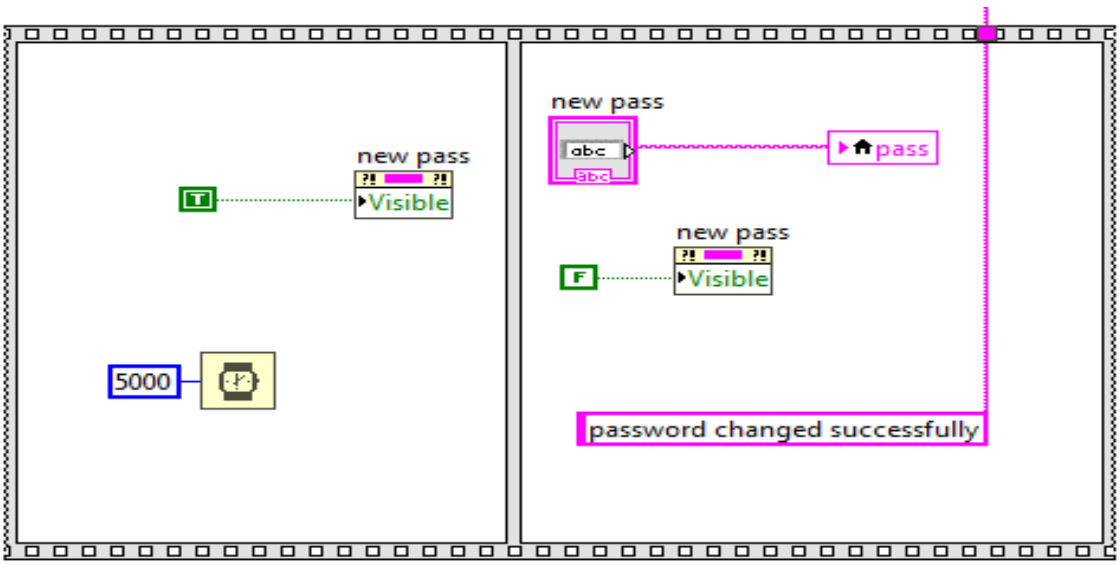
If all required information are not entered:



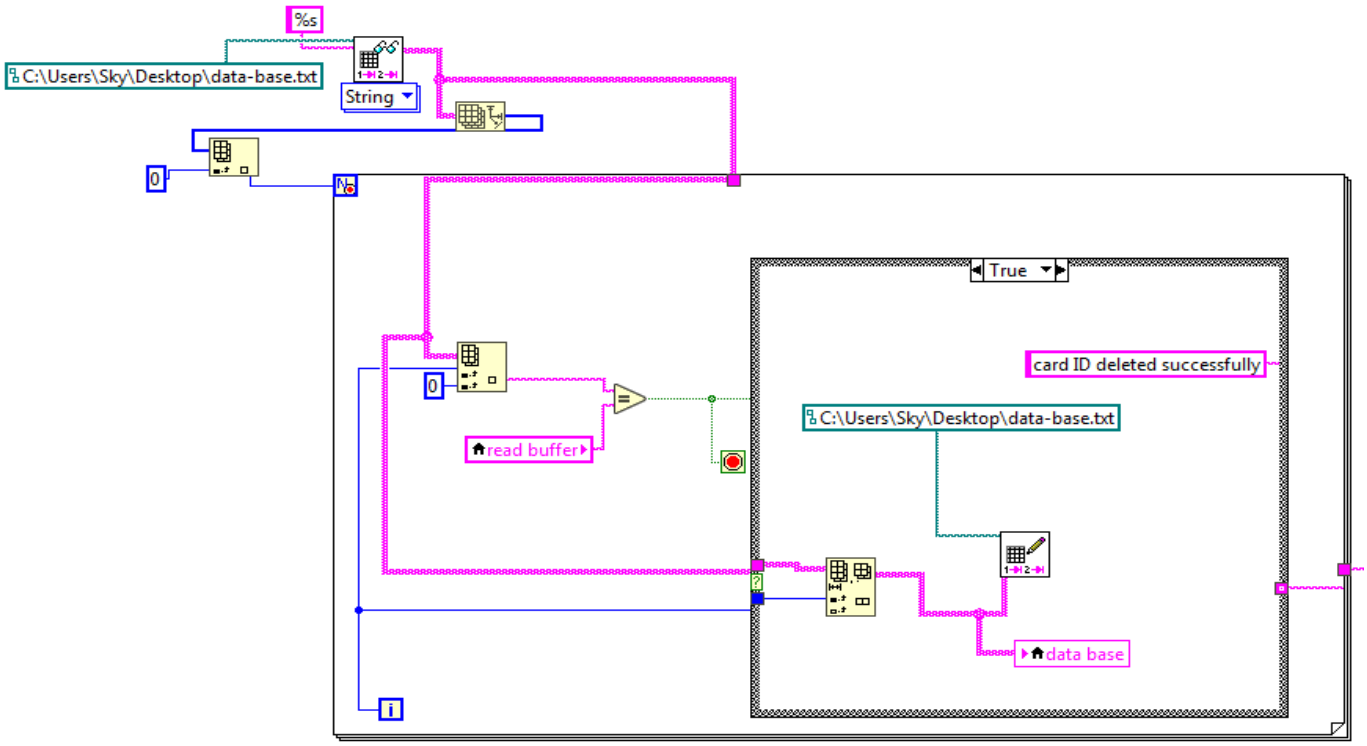
Add new user Data to Database file:



Change login password:

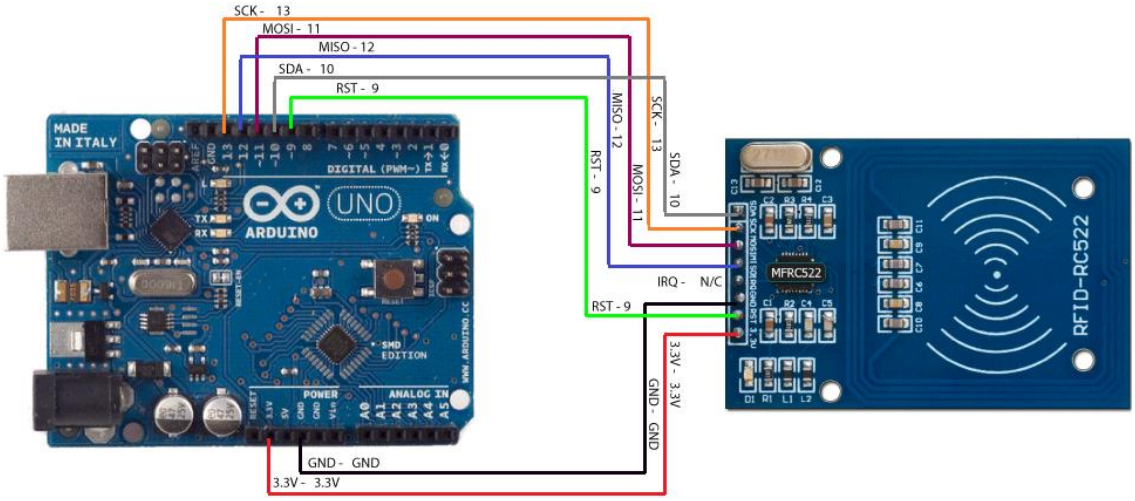


Remove card info from:: Database:

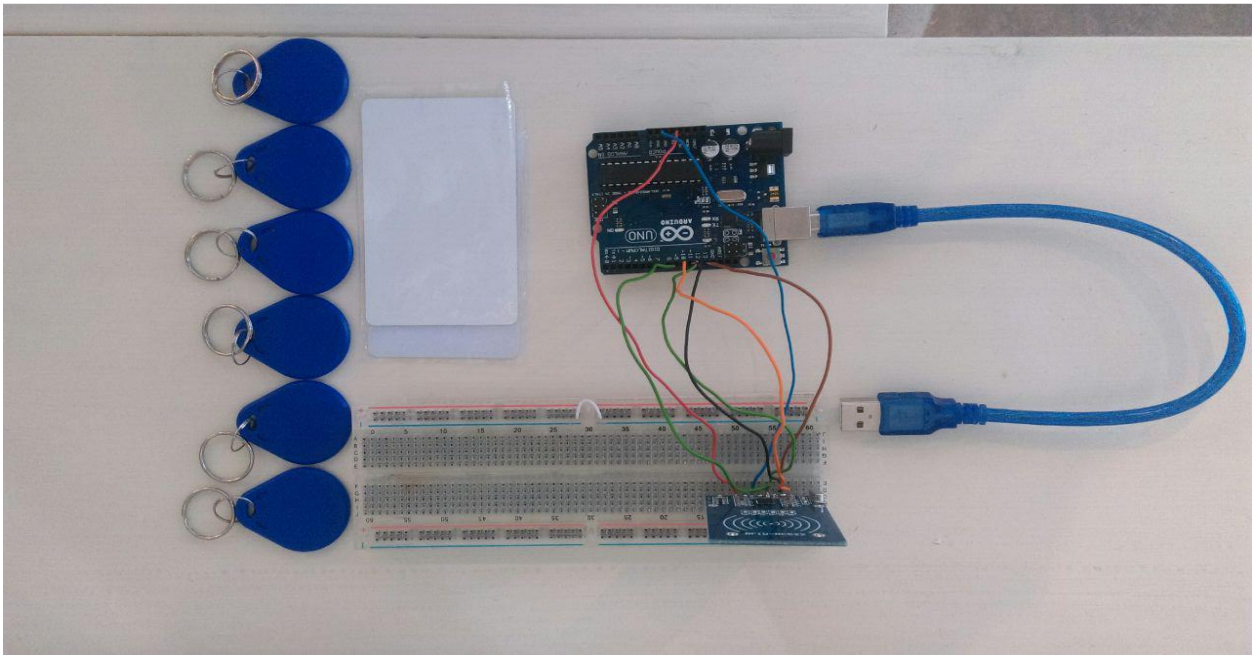


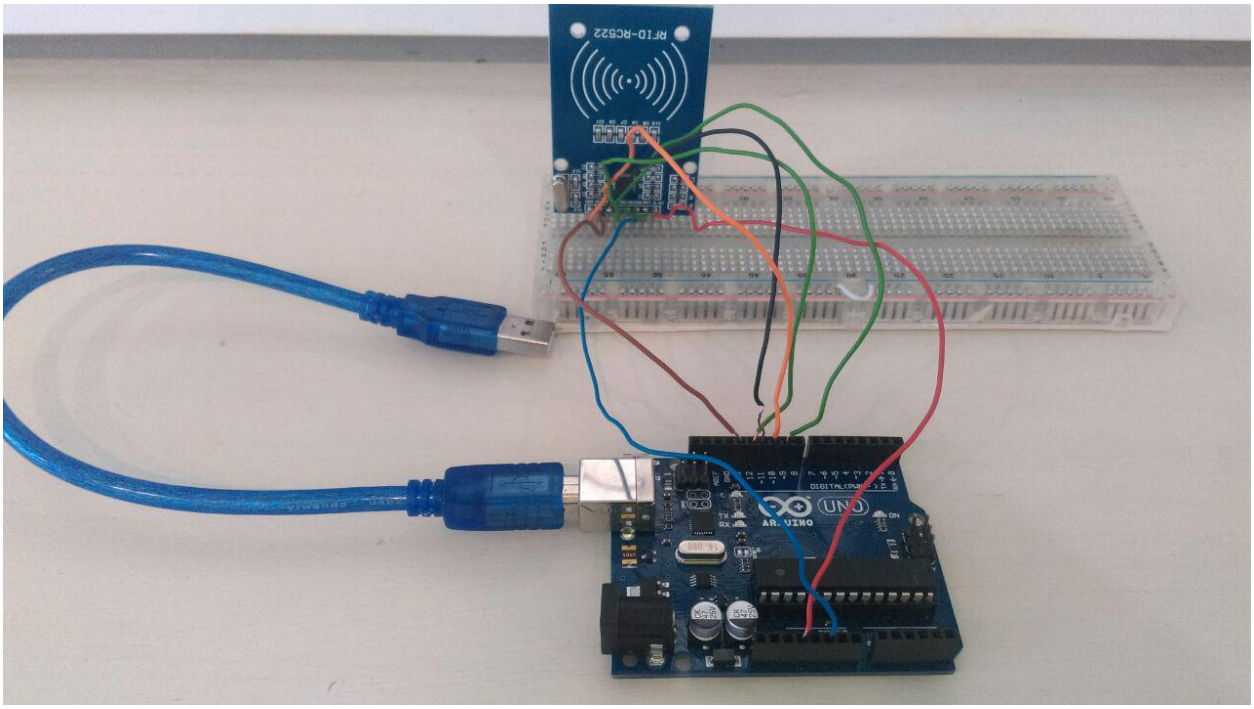
Hardware connections:

Pin	Wiring to Arduino Uno
SDA	Digital 10
SCK	Digital 13
MOSI	Digital 11
MISO	Digital 12
IRQ	unconnected
GND	GND
RST	Digital 9
3.3V	3.3V



Real Picture of Hardware Part:

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