CS2310 Milestone #2 Report

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The term final project is about building an IC Card manage system on Android, and implement the I-card and C-card on it, which is my task.

**Introduction:**
The IC card management system has been successfully built in Android system, and can implement the add, edit, clean the database, view a IC card, view all IC cards, import and export in the form of XML, and display the petri net of all the IC cards. The screenshot of the menu is shown in Fig. 1.

![Fig. 1 Screenshot of menu page](image)

**Function:**
In order to implement the IC card petri net and the time reminder function, my task could be divided into two parts, including drawing the petri net and set the time alarm function.

1. Drawing the petri-net

After importing the XML data from outside, the IC card system would have the cards to show. Then, clicking the button “Display” in the menu would draw the petri net of all the imported IC cards. The petri net is shown in Fig. 2.
In Fig. 2, the names of the IC cards are shown in red, and the smaller words in blue are the message to be sent from this IC card. Since there might be a lot of IC cards needed to be drawn on the picture, the IC cards are designed to be close to each other. And users can drag the IC cards as they like to redesign the structure of the petri net to a desirable condition, just like the one in Fig. 3.
In addition, if user wants to see the more detailed information of the card, he/she could click on the name of the IC card to see. Fig. 4 shows the result of clicking on the “Gesture Recognizer” card.

![Image of IC card information]

Fig. 4. More detailed information of a card

Besides, considering the fact that there might be a very large petri net and the screen with a limited size could show all at a time, I also implemented the dragging function for the canvas, i.e. the user can drag the canvas to the left, right, top, bottom to see the image there.

2. Alarm function

In order to better express a particular function of an IC card – the time critical property, I implemented the alarm clock function. In this way, user can use the IC card system to better schedule the tasks of the IC cards. For example, if a IC card named “see the doctor” has a time critical property of “meeting at 10:00 am”, then the user could set the alarm according to the time.

To invoke the alarm function, first we need to press the menu button on the phone, and see a self-designed menu shown in Fig. 5.
Then, click the “Set an alarm” button on the menu and enter the screen of setting an alarm, shown in Fig. 6.
After setting the alarm, when the time arrives, there would be an alert jumping out, shown in Fig. 7.

![Image of alarm alert](image)

**Fig. 7. Reminder of alarm**

**Challenges:**

Showing the petri net according to the information of IC cards is the most difficult problem in the project. I implemented it by drawing the items on a canvas, calculating the correct position for each item, and set the click listeners to capture the user clicks.