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## User Interface Programming & Graphics (ITS60303) Cover Sheet

### ASSIGNMENT 1

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**HAND OUT DATE:** 4<sup>th</sup> May 2017 (Thursday)  
**HAND IN DATE:** 1<sup>st</sup> June 2017 (Thursday 11:30pm)  
**WEIGHTAGE:** 10%

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**Instructions to students:**

- This is individual assignment.
- Complete this cover sheet and attach it to your assignment – this should be your first page!

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<i><b>This project is all our work and I have acknowledged any use of the published or unpublished works of other people.</b></i>	
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deserved a 0 marks.*

**Important:**

- a) Late submissions will be penalized as per school policy.

## **INTRODUCTION**

An Automatic Teller Machine (ATM), according to the New Oxford American Dictionary, is a machine that dispenses cash or performs other banking services when an account holder inserts a bank card. An ATM is usually within a stone throw's reach in places which include modern malls, universities and shopping lots. Due to this fact, it is no wonder that people are willing to carry out their monetary transactions wherever an ATM can be found – it eliminates the need for them to find the nearest bank and be one of many customers waiting in line just to withdraw or deposit money, or even just to check how much they have left in their respective bank accounts.

Since the usage of ATMs is considered to be a more convenient way of carrying out monetary transactions and errands, the user interface they are presented with should not have anything that will hamper the contributing factor to the popular usage of ATMs – convenience and ease of use. While the navigation and user interface should be easy to learn, it has to be appealing and unique to the customer using the ATM, especially at points where they can stand out from the rest of the many different types of designs – be it attractive wise or easier to recognise and identify.

For this assignment, the task at hand is to create a graphical user interface (GUI) for an ATM based on HTML, with other relevant tools including CSS and Material Design Lite (MDL). The different components and inspirations behind the making of the GUI for the assignment are explained as follows.

## **AESTHETIC LOOK AND FEEL**

The GUI created used the amber-orange colour combination, one of many combinations available with the use of MDL. Overall, the look and feel of the GUI embraces the yellow-orange colour scheme for a theme, with a befitting background. The header bar displays what operation is being done or which page the user is currently at, depending on the situation. For example, if the user is supposed to key in their PIN number, the header gives a simple instruction: "Enter your PIN number". The words in the heading are put to be fully made up of capital alphabets.

The ATM GUI was supposed to be intended for a square-shaped, touch-sensitive screen. While scaling the interface to be visible on a square-shaped screen would seem appropriate,

the GUI made does not necessarily comply with the given specification; rather, the interface is designed as such that it will always take up the middle of the screen, regardless of the size of the web browser, and the maximum width of the workable interface being at 800px. Buttons and text fields are made larger, not only for visibility, but also for easy interaction. Not only that, they are spaced out evenly enough so that users would not need to worry about accidentally selecting the wrong button. This is important because even a small mistake in selection can cause damage to the user and/or the account he/she currently owns.

## **NAVIGATION AND MECHANICS**

A number of HTML web pages have been created for the assignment. In normal practice, the first page accessed out of a set of web pages for a website is always named "index.html". Due to this reason, the PIN entry page was assigned that name to it. This is also in light that the whole GUI created is supposed to only be responsive, not sensitive to the contents of information entry. Normally by routine, the "Insert Card" screen is what anyone sees first before they make any interaction with the ATM. However, since the whole web site is not sensitive to information input, notably here, a card reader is absent and not available to use with the web site.

At the PIN entry page, a numeric keypad is simulated as an array of touchscreen buttons placed under the textbox where the PIN number will appear, along with buttons to abort transaction (ABORT) as well as to clear the textbox. By normal practice and regular standards, the PIN number is usually six characters long, so the input has been restricted to that. Not only that, the GUI is also set to be usable for a non-touch screen interface, although the main focus is to make the GUI touch user-friendly. Regular keyboard entry will work just fine here as well as any of the other pages wherever necessary, but there will be detection on whether invalid input has been entered – the highlighting of the text box will turn red instead of the usual yellow colour.

After the PIN number has been entered, the user should be greeted with a menu interface, showing four available options apart from the cancel transaction button. They include the following (not in order): Fast Withdrawal, Pin Change, Check Balance and Deposit. When any one of these options except Pin Change are selected, they will be asked whether they wish to carry out the desired operation on the Current Account or Savings Account before continuing. For Check Balance, the balance remaining in that account will be displayed, and the user will be asked whether they wish to print out a mini-statement. Upon completion, the main menu

will be displayed again, a "printing message" page will be displayed before that should the user choose to print out a mini-statement.

At Fast Withdrawal after selecting the account to be used, a few options to how much they wish to withdraw is made available there. Should the user select "Other Amount" instead, he/she will be presented with a somewhat similar interface like the PIN entry page, with the exception of the use of a label instead of a textbox, and instead of a button aborting the transaction process, a menu option is ready for them to return to the main menu. Upon entering the amount as they desire, just as they confirm the amount, the screen will display a message, saying that withdrawal is in progress, before requesting the user to retrieve the ejected card and later the cash they wished to withdraw. The user will be presented with the option to print out a receipt – regardless of choice the user will be presented with another message, "Thank you for banking with us" before requesting for a card entry.

At Deposit after selecting the account to be used, the user will be presented with yet another similar interface like the PIN entry page, where users are supposed to enter their 12-digit account number and again, a label is used instead of a textbox. The mechanics in this page are nearly if not exactly identical to the other transaction page. Upon entering the 12-digit account number and confirming it, the page redirects to show the name of the person owning the account as well as the account number entered. The page will also ask whether the account entered is correct or not. Should "No" be selected, the main menu is redisplayed. If "Yes" is selected, the page redirects to another where the amount of money deposited is entered. A text label is placed underneath the deposit summary. However, since there is no input device to retrieve money for the purpose of this assignment, the page is not responsive with the exception of the buttons available – 'Cancel', 'Insert Cash' and 'Finish'. If 'Insert Cash' is selected, the label underneath the deposit summary will switch from the default "Insert cash" instruction to "Counting cash..". The label will soon display the instruction "Retrieve unrecognizable notes" – this will be ignored if a cash deposit input is present and there are no unrecognizable notes. The label will then revert back to the original instruction either way after that. As soon as 'Finish' is selected, the page displays a message saying that the Deposit process was successful and the page will be auto-redirecting to the menu page.

At the PIN change page, the user will be asked to enter their current PIN before entering the new PIN and later the same new PIN again for confirmation. All of these pages resemble a similarity to the earlier PIN entry page, the only difference between the latter and the three pages mentioned before that is the three pages have a menu option instead of an abort

transaction button. Once the new PIN has been confirmed, the page displays a message saying that the PIN change operation was successful.

As soon as one ends up at the screen where it requests for a card entry, the page does not respond to anything due to the absence of a card reader. This is only so for this assignment, and possibly just a limitation of the GUI at the moment – in typical ATMs, as soon as a card is read, either the language selection or the PIN entry page is shown. It is also important to take note that in the GUI created for this assignment, JavaScript was extensively used for a lot of button functions, which revolve around text input, output and redirecting to other pages.

## **CONCLUSION**

The current GUI created for this assignment has a few limitations, which include the absence of required input or output devices for card entry, cash dispensing and receipt/mini-statement printer. Also, it is also worth taking note that the GUI is set to use only English at present moment, which is not so for most ATMs as they often ask for a preferred language before proceeding with the transaction.

However, the GUI created displays how an ATM GUI should more or less resemble – being user-friendly and having an intuitive and vibrant design. It is very important that the GUI fulfils these requirements because if not so, even if all the functions work flawlessly and satisfies basic user and functional requirements, the users will not be intrigued to use it often, let alone like it by preference.