# Introduction

This document details a touchscreen ATM interface created by Zichen Jiang and Kelvin Lin for Sfwr Eng 4HC3.

# Overview of the System

## Functionality

The ATM can validate a user through three different input methods: inserting their bank card, swiping their bank card, or entering an account number. Afterwards, the ATM will ask the user to enter a pin associated with their account. As a security feature, users will be given three attempts to enter this pin. If they enter it incorrectly three times the account will be locked out of the system, and a message will be displayed to the user telling them to go to the bank to unlock their account.

Once the user validates their account, they will be directed to a menu where they can select their desired tasks: withdraw, deposit, transfer, check balance, change pin, and sign out. The withdraw feature lets users withdraw money from the ATM, provided they already have money in their account. Users can also deposit money using the deposit feature, which will add money to their account. Users can transfer money to other users, provided that they have their bank number. Users can check their current balance, as well as their transaction history, using the check balance feature. Users can change the pin associated with their account using the change pin feature. Finally, users can sign out of the system using the sign out feature.

## Context

While the functionality of the system is universally accepted, the design of systems is constrained by cultural and societal beliefs and values. Different societies develop different conceptual models and have different expectations of how a system should work. In order to design a good interface – one that can be used by 95% of the population – a target population of users must first be described.

This ATM machine will be used by youth and adults living in Scarborough, Ontario. Specifically, the age range of the population will be 15 to 80 years of age. 35 to 64 year olds make up the majority of the population. Visible minorities make up 70.3% of the population, with South Asians and Chinese members making up 43.4% of the population. 59% of the population was born outside of Canada. 51% of the population has a post-secondary certificate, diploma, or degree. About 60% of the population are in the labour force, and the majority of workers have jobs in retail, transportation and the trades, or business. The majority of households make an annual income of $20000 to $49999.

## Demographic Considerations

The demographics in Scarborough…

# The Application Layout

The application is divided into two components: the ATM system, and simulated physical controls. The main ATM system is located at the top of the screen, and it is enclosed in a black border. The black border is not intended to be part of the system: it is there to separate the ATM system from the simulated physical controls.

There are 5 buttons below the application. The five buttons act as physical controls to the system. The simulate actions that the user can perform on the ATM without accessing the touchscreen interface. Such actions are inserting their card, removing their card, swiping their card, taking money from the machine, and inserting money into the machine.

The console is also used to denote simulated physical interactions that the user can have with the ATM. Such actions include the card reader being blocked, no money is dispensed from the machine, or the deposit box is closed.

# The ATM User Interface

## The Start Interface

### Overview

The start interface is the first screen the user encounters when using the ATM. The text tells the user to insert their card, swipe their card, or tap for more options. If the user inserts or swipes their card, they are directed to an interface for them to enter their pin.

A single image of a hand tapping the screen is shown at the center. If the user taps anywhere on the screen, except for the language buttons, then they will be directed to the selection interface.

There are five buttons below the image that allow the user to change languages. When the user taps on any of the buttons, the language of the text changes to the language the user pressed.

The interface is depicted below.

**[Insert Image Here]**

### Application of the Norman Principles

The image and the text on the screen serve as signifiers to let users know what actions they can take. Although users can take three different actions on this screen, the image only directs the user to one action: tapping. This was deliberately done because images direct a user’s attention to them. Having too many images on the screen may distract the user through information overload.

## The Selection Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Insert Card Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Account Number Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Enter Pin Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Invalid Credentials Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Locked Out Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Main Menu Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Withdraw Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Withdraw Success Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Withdraw Failure Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Deposit Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Deposit Success Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Invalid Account Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Transfer Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Select Account Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Transfer Success Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Check Balance Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The History Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here

## The Signed Out Interface

### Overview

Enter text here

### Application of the Norman Principles

Enter text here