# **[CSE 007]** In-Class Activity: Intro to ATM, Computational Thinking Date Assigned: Mon., Jan. 31, 2022

Due Date: Saturday Feb. 5, 2022 11:59 pm

**Note**: Every student is expected to submit their own responses/work, although you will be given an opportunity during class time to collaborate. While you may discuss as a team each person should be coding on their own machines. You may take time after class to finish anything that you don’t complete.

**Submission:** *ATM1.pdf* (sugg. submit: 11:59 pm **tonight;** deadline: Saturday at 11:59 pm)

*Part 1:* Planning and Problem Definition

**Objective:** Even though our *eventual* goal is to simulate a menu-driven ATM system in Java, we have to start from by defining our problem, breaking the problem into components, identifying the functionality of the system, and if there are patterns within each functionality.

**TODO:** Download this document and respond to the following questions.

# What is an ATM? Explain the purpose of the application for someone who may have never used it.

# 

An ATM is an automatic teller machine, used to exchange and interact with your bank. Account holders can check their balance, account information, withdraw and deposit money into your account as well.

1. What does an ATM look like? **Create a visual representation of an ATM system(Hardware)**. Break the ATM system into various components. Explain each component’s purpose. **(Decompostion)**

Graphical user interface, application

Description automatically generated

ATMs have a few pieces of hardware. Screens show a visual for humans to be able to read it as an output device. Keypads allow you to input information such as your account number and PIN to be able to authenticate your identification with the bank. A cash dispenser is an output device used to get money from the bank. Deposit slots are an input device that allows you to put money into your account.

1. What are the main functionalities that are present within an ATM **(Decomposition)**? What types of information is available to the user? Are their patterns within each functionality. **(Pattern Recognition)**

Check account information, check balance, deposit money, withdraw money and cash checks. The information available for the user is strictly their account only. Patterns with the function involve checking your balance, checking if the money being withdrew is an acceptable amount, checking if the ATM has enough money to deposit, checking for authentication, checking to restock bills, updating account information.

1. What information is present and used in the system **(Abstraction)** ? Is this information considered **input** or **output** to the system?

Account number as input, balance as output, PIN as input, expiration date of card, name, address, ID, restrictions on your account, shared users, cash as input and output.