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| ELEC 402 |
| Project 1 Report |
| Finite State Machines |

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**General Description**

The Finite State Machine (FSM) is of a generic bank ATM for withdrawing and depositing money. The FSM is intended to be instantiated with parameter settings for CORRECT\_PIN, SAVINGS\_FUNDS\_AMOUNT, and CHEQUING\_FUNDS\_AMOUNT, which are self-explanatory. If left default, the pin will be 1234, savings will contain 1000, and chequing will contain 25. States consist of 4 major sections with a total of 13 states:

* Initial phase (Initial startup, pin validation, and selecting deposit/withdrawals)
* Deposit phase (Account selection, depositing cash vs check, open atm deposit slot)
* Withdrawal phase (Account selection, withdraw amount, checking for insufficient funds, open atm withdrawal slot)
* End phase (Withdrawal of card)

The states are controlled based on inputs to the module and outputs allow for ATM to signal ready, open atm out (deposit), or open atm in (withdrawal).

**Test bench + FSM Modules**

Input/outputs definitions, purpose/description of each state, and testbench comments are all commented within the code.

**FSM Block Diagram**

Here: (not here)

**Module + Testbench Block Diagram**

Here: (not here)

**FSM State Diagram**

Here:

**Copy of code**

In separate file (code.pdf

**Simulation waveform results**

To;do: