Project Title: MIT ID Card Reader

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Description:

We plan to build an MIT ID card reader that can read a tapped ID and display the embedded information on a screen. This project will include building the physical magnetic card reader and writing modules to decode the phase-shift keyed data, descramble the Indala FlexSecure protection, and display the embedded information on a VGA screen. The reader itself will be a promixity "tap-style" reader based on a 125Khz carrier square wave excitation circuit. After extracting the actual data from the raw card signal, we will combine it with a limited ID-card-to-person database to display additional information on the screen for recognized persons, and display whether or not they are recognized and authorized. Possible extensions include using this data to control physical locks (e.g. student room doors to obviate room keys), adding audiovisual data to our database, or adding a second factor to complement the ID card. These will likely require interfacing with external systems (laptops, Arduinos, etc.) to take advantage of additional hardware control and memory space.