



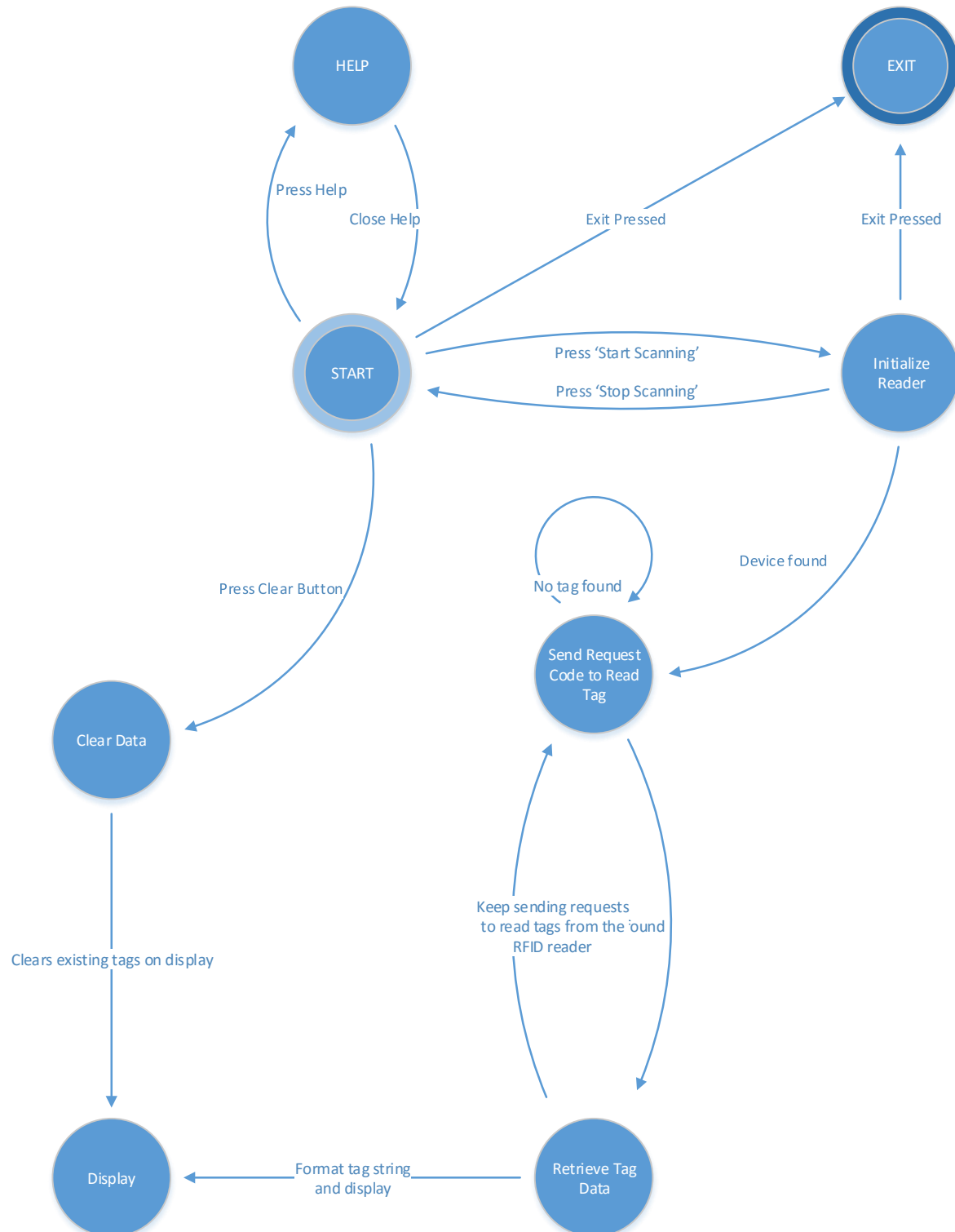
DESIGN & IMPLEMENTATION

RFID READER APPLICATION

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1 State Diagram



2 State Implementation

State	Details
Start	<p><i>Purpose:</i> Starting point for the user into the program. The user can perform several functions here, including:</p> <ul style="list-style-type: none">• Start scanning (Initialize Reader)• Stop scanning• Clearing the screen (Clear Data)• Help• Exit
Initialize Reader	<p><i>Purpose:</i> When the user clicks “Start”, the program will search for any connected readers. If a reader is found, the program will enter a loop to search for any tags in proximity (Send Request Code to Read Tag). If a reader is not found or if there is an error connecting to the reader, an error message is displayed and the session is terminated. Any readers are freed from the program.</p> <p>Status messages will be displayed to the status bar as helpful hints to the user.</p> <p>Note: The code to search for and read from the RFID device should be implemented inside its own thread, to prevent the program from locking up when the RFID device is searching for tags. (Asynchronous I/O)</p> <p>API Used: SkyeTek_DiscoverDevices SkyeTek_DiscoverReaders SkyeTek_FreeDevices SkyeTek_FreeReaders</p>
Send Request Code to Read Tag	<p><i>Purpose:</i> When a reader is found, we will enter a loop that continuously searches for tags. When a tag is found, it is passed to a callback function, where we can extract information from the tag, and then return the control back to the loop to continue searching for more tags.</p> <p>API Used: SkyeTek_SelectTags</p>
Retrieve Tag Data	<p><i>Purpose:</i> Inside the callback function, we retrieve tag information, including friendly (which we treat as the tag ID) and type. Tag information is then formatted and inserted into the listview window.</p> <p>API Used: SkyeTek_GetTagNameFromType</p>
Display	<p><i>Purpose:</i> Tag information is displayed inside a listview window. 3 columns of the listview display the Tag Count, Tag ID, and Tag Type. When the number</p>

	of tags exceeds the height of the program window, a scrollbar appears to allow users to view all the tags.
Clear Data	<i>Purpose:</i> Clears the display of any existing tags.
Help	<i>Purpose:</i> A simple dialog with instructions on how to use the application. Implemented as a pop-up dialog box.
Exit	<i>Purpose:</i> Allow the user to quit the application.

3 Pseudocode

Connect

```

try to get device
if we discovered a device:
    try to get reader from the devices
    go to Select Tag
else
    error message, cancel Connect

```

Select Tag

```

loops until a tag is found or reader timed out
    if tag found:
        go to Retrieve read tag
    else:
        keep looping
end loop

```

Retrieve read tag

```

get the tag type and name
insert the tag data into the listview to display to user
free the tag
return to Select Tag to keep looping for more tags

```