CS 160 Project (Entropy Analysis) Storytelling & Use Cases

Here is how this document is formatted:

* <User story goes in outermost bullet points>
  + <Use case step(s) for above user story goes in the inner points>
* As a user, I would like a graphical interface to easily obtain information about incoming packets
  + [1] User is able to open some sort of executable program on their computer to start the program
  + [2] Program open should display GUI with controls to run the program. This includes buttons for connection / disconnection from router and an area for displaying data in tabular (or graphical) format
* As a user, I would like to see the obtained data from the incoming packets in a structured format (table or graph)
  + [1] User connects to the router to initialize data collection by pressing connect button on GUI
  + [2] Program starts reading packet data and performing entropy analysis
  + [3] Entropy analysis results are relayed back to GUI for displaying (in tabular or graphical format)
* As a user, I would like to be able to set how many packets should be collected per entropy analysis performed (ex: perform entropy on every two / three / four incoming packets instead of only on every single incoming packet)
  + [1] User can access a slider on the GUI to tune how many packets to collect before performing entropy analysis before connecting to the router (slider has numbers to indicate packets collected per analysis performed)
  + [2] Program will be notified of the user’s setting to correctly perform entropy analysis once connection starts
  + [3] Results on GUI should also note the number of packets collected to reaffirm that the user’s setting has changed the behavior of the program appropriately
* As a user, I would like to be able to manually “connect” to the router (start retrieving packet data)
  + [1] User can press on connect button on GUI to establish router connection (when not already connected)
  + [2] Any data already on GUI (from previous connection) will be cleared to display new data
  + [3] Data collection and analysis will start
  + [4] Results of data analysis will display on GUI as statistics are created
* As a user, I would like to be able to manually “disconnect” from the router (stop retrieving packet data)
  + [1] User can press on disconnect button on GUI to cut router connection (when not already disconnected)
  + [2] Data collection and analysis will stop
  + [3] Results of data analysis will stop changing on the GUI (since no more data is being collected), but it will remain until router connection is started again
* As a user, I want to be able to save collected packet data in a file
  + [1] User collects some data
  + [2] User stops collecting data once they have collected what they desired
  + [3] Through a save button or save option from a menu drop down, user can press this option to start saving process
  + [4] User can pick name of saved file / location of saved file in a file explorer style of window pop-up
  + [5] In save pop-up, user hits accept button to finalize the data saving
  + [6] Collected data will be written to where the user specified
* As a user, I want to be able to open previously saved packet data from a file to review the statistics
  + [1] User stops collecting data (if not already stopped)
  + [2] Through a load button or load option from a menu drop down, user can press this option to start loading process
  + [3] If user had data collected that had not been saved yet in the GUI of the program, user will be prompted if they would like to save their data (since loading will overwrite this data). If user picks yes, saving process will go before continuing to load
  + [4] User can navigate to where file to load is located at ina a file explorer type of window pop-up
  + [5] In load pop-up, user hits accept button to finalize data loading
  + [6] Selected file data will be loaded onto the GUI