**Web Application Description**

To run the application, simply run the project as a web application with Tomcat. The location of the data and credential file need to be changed.

1. Login
2. Admin
3. Report

Login & Sign up

Description: Login and sign up page for users

Login (login.jsp)

* You can either login as
* An admin with the admin password
* A user with the user’s device serial and the user’s password
* The credentials of the admin/users are in creds.txt in the project folder

Signup (login.jsp)

* A new user can create a login, provided they have a serial for a printer
* They require an email, password and the serial number of printer to create an account
* You can’t create more than one account with a serial number
* No one is allowed to sign up with the username “admin”

Future Enhancements

* Better error printing system, eg. Dialog
* Using a database like SQL instead of file system
* Setting up a password recovery system

Admin & User

Description: Navigation pages for admin and users respectively

Admin Home Page (userSerial.jsp)

* Find user data – gets all the data for a user given the user’s printer serial
* Get user stats – gets the statistics on data printed and the printer state during prints
* Log out – goes back to the login page

User Home Page (userHome.jsp)

* Find user data – gets all the data for a user given the user’s printer serial
* Get user stats – gets the statistics on data printed and the printer state during prints
* Log out – goes back to the login page
* A user can access only his/her print information

Future Enhancements

* Get the data and the statistics information on the same page for both
* An admin page to assign access on columns/information to the external user/internal user

Report

Description: Display pages of print data and print statistics

Data (displayData.jsp)

* It displays all the data for a given user
* A filter input that takes a substring from user and searches the table and displays only the corresponding rows

Report (displayStat.jsp)

* Gives statistics like – number of print by user, prints with cross link enabled, prints with cross link disabled
* Also reports min, max and average values of attributes like dead percent in data printed, live percent, cross link intensity, etc.

Future Enhancements

* A better filter that can filter rows based on columns
* Additional filters based on use case, for example prints with cross link intensity greater than a given value
* A report for the overall data that the admin/internal users or employees can access
* A display of all the data with appropriate filters for the admin/internal users
* More statistics like histograms, relationships between some attributes (through correlation or graphs)
* Access of overall statistics (irrespective of user) to all user for comparison