**LOGIN APP ALGORITHM**

* + Initialization: Start the Tomcat server to host the web application.
  + User Access: The user accesses the web application through a web browser.
  + User Requests Login Page: The user requests the login page (login.html).
  + Login Page Display: The login page (login.html) is displayed, prompting the user to enter their username and password.
  + User Submits Login Form: The user submits the login form by entering their credentials and clicking the "Login" button.
  + LoginServlet Handling: The **LoginServlet** processes the user's request.
  + It retrieves the entered username and password from the submitted form data.
  + Login Validation: The servlet validates the entered username and password against hard-coded values (VALID\_USERNAME and VALID\_PASSWORD).
  + If the credentials match, a new session is created, and the user is considered logged in.
  + Successful Login: If the login is successful, the user is redirected to the **DashboardServlet**.
  + DashboardServlet Handling: The **DashboardServlet** processes the user's request.
  + It checks if the user is logged in by verifying the presence of the "username" attribute in the user's session.
  + User is Logged In:
  1. If the user is logged in, the dashboard page is displayed, including a welcome message and a "Logout" link.
  2. If the user clicks the "Logout" link, the **LogoutServlet** is triggered.
  3. The **LogoutServlet** invalidates the user's session, effectively logging the user out.
  4. After logging out, the user is redirected back to the login page (login.html).
  5. If the login validation fails (i.e., incorrect username or password), the **LoginServlet** forwards the user to an error JSP page (error.jsp).
  6. The error JSP page displays an error message indicating that the login was invalid and provides a link to go back to the login page.
  7. The user can continue to interact with the application by either logging in, logging out, or returning to the login page as needed.
  8. When the user is done, the Tomcat server can be shut down.

1. User Logs Out:
2. LogoutServlet Handling:
3. User is Redirected:
4. Invalid Login:
5. Display Error Message:
6. Termination:
7. Server Shutdown: