### **SAS Project: Complaints Management**

**Introduction :**

Create a console application to manage customer complaints. This application allows you to manage complaints submitted by customers, process them, edit them if necessary, view complaint details, and generate statistics on resolved or pending complaints.

**Project context:**The application must include a main menu that allows you to:

### **User management:**

1. **Create user accounts:**
   * **Sign Up** : Allows new users to create an account by providing a username, password, and other relevant information.
   * **Adding password constraints:**
2. **Defining password constraints:**
   * Minimum length: 8 characters
   * Must contain at least:
     + A capital letter
     + A lowercase letter
     + A number
     + A special character (for example: !@#$%^&\*)
   * Must not contain username
   * **Sign In** : Allows registered users to log in to the application using their username and password.
   * **Lockout System** : Implement an account lockout system after multiple failed login attempts.
3. **Manage user roles:**
   * Define different roles such as **Administrator** , **Claims Agent** , and **Customer** .
     + **Administrator** : Has all access rights, including managing claims, users, generating statistics, and assigning roles.
     + **Complaints Agent** : Can manage complaints, handle customer complaints, but cannot manage users.
     + **Customer** : Can only submit and view their own claims, as well as track their status.

### **Complaints management:**

1. **Add a complaint:**
   * Customers can submit a complaint,   
       
     A complaint must contain the following information **:**
     + **ID** : A unique identifier, randomly generated by the program.
     + **Reason** : The reason for the complaint (eg: defective product, customer service, billing).
     + **Description** : A detailed description of the problem encountered.
     + **Category** : The category of the claim.
     + **Status** : The status of the claim (eg: in progress, resolved, rejected).
     + **Date** : The date of submission, auto-inserted as today's date.

The ID must be unique and automatically generated, while the date will be automatically inserted as today's date upon submission.

1. **Show list of complaints:**
   * Accessible to **administrators** and **claims agents** . Displays all submitted claims, with their details (customer, date, description, and status).
2. **Edit or delete a claim:**
   * Administrators and **Claims Agents can edit** or delete any claim.
   * Customers can only edit or **delete** their own complaints until they have been processed and less than 24 hours have passed since the complaint was submitted.
3. **Processing a complaint:**
   * Administrators and **claims agents can mark a claim as "in progress", "resolved", or "** closed". They can also add internal notes about processing steps.
4. **Search for a claim:**
   * Accessible to **administrators** and **claims agents** . Search by claim ID, customer name, or submission date to view associated details.
   * Add search by status (pending, in progress, resolved) or by claim category. Accessible to **administrators** and **claim agents** .
5. **Priority system:**
   * Automatically assign priority (low, medium, high) to complaints based on keywords in the description.
6. **Show claims ordered by priority:**
   * Accessible to **administrators** . View complaints sorted by priority (low, medium, high) to facilitate processing based on urgency.

### **Statistics and Reports:**

1. **Show total number of complaints:**
   * Only **administrators** can access this section.
2. **Show complaint resolution rate:**
   * Only **administrators** can see how many complaints have been resolved out of the total number submitted.
3. **Calculate the average time to process complaints:**
   * Administrators can analyze how long on average it takes to process a claim **.**
4. **Daily report:**
   * Generate a daily text report listing new and resolved complaints.