**FRAUD DETECTION IN LOCAL CLASSROOM ASSIGNMENT**

CB.EN.U4CSE22507

CB.EN.U4CSE22511

CB.EN.U4CSE22538

CB.EN.U4CSE22545

CB.EN.U4CSE22556

**ROLES**

(1) Product Owner : 22556

(2) SCRUM Master : 22538

(3) Developers : 22511 & 22545

(4) Tester : 22507

**EPICS & USER STORIES**

(1) User Authentication and Authorization

[1.1]

[1.2]

[1.3]

[1.4]

[1.5]

(2) Fraud Detection System

[2.1]

[2.2]

[2.3]

[2.4]

[2.5]

(3) Reporting and Notifications

[3.1]

[3.2]

[3.3]

[3.4]

[3.5]

(4) Gamification for Awareness

[4.1]

[4.2]

[4.3]

[4.4]

[4.5]

(5) **Data Visualisation**

[5.1] As a **teacher**, I want to view an interactive heatmap showing trends of suspected fraud across assignments and students, so that I can identify patters and take corrective actions.

**Tasks**:

(1) Retrieve fraud detection data and aggregate it by assignments and students.

(2) Design and implement an interactive heatmap using appropriate charting tools.

(3) Enable filtering based on assignment type, date, or student group.

(4) Add hover-over tooltips to display detailed information about fraud scores.

(5) Test the heatmap functionality for usability and accuracy.

[5.2] As a **school administrator**, I want to see a comparitive line chart of student performance versus detected fraud instances.

**Tasks**:

(1) Collect and preprocess data for student grades and fraud scores.

(2) Plot grades on one axis and fraud scores on the other using a dual-axis chart.

(3) Allow the user to toggle between individual students or class- wide views.

(4) Implement a date range filter for customizing the analysis period.

(5) Validate data accuracy and ensure chart responsiveness across devices.

[5.3] As a **teacher**, I want to predict the likelihood of fraud based on the assignment type, so that I can adjust the difficulty or structure of assignments to minimize potential cheating.

**Tasks**:

(1) Use historical fraud detection data to create a predictive model that estimates the likelihood of fraud for different types of assignments (e.g., multiple choice, essays, group work).

(2) Display the predicted fraud risk for upcoming assignments based on their type.

(3) Allow teachers to adjust assignment structures based on fraud risk predictions (e.g., changing question formats, adding unique identifiers).

(4) Provide feedback to teachers about how their past assignments correlated with fraud detection results.

(5) Test the predictive model for accuracy and effectiveness in identifying high-risk assignments.

[5.4] As a **student**, I want to view my personal fraud detection score across assignments, so that I can understand if there have been any instances of suspicious behavior or potential cheating on my part.

**Tasks**:

(1) Retrieve the fraud detection scores for each assignment.

(2) Display the scores in a clear, easy-to-understand format (e.g., a bar chart or scorecard).

(3) Allow the student to filter the view by assignment or date.

(4) Provide a brief explanation or tooltip on how the fraud detection system works and how scores are calculated.

(5) Ensure that the score is updated after each assignment and accurately reflects the student's actions.

[5.5] As a **student**, I want to submit an appeal for a flagged fraud detection result, so that I can challenge any false or mistaken fraud alerts that may have been applied to my assignments.

**Tasks**:

(1) Identify assignments that have been flagged by the fraud detection system.

(2) Provide a "Submit Appeal" button next to flagged assignments for students to submit an appeal.

(3) Allow students to add comments or explanations to support their appeal.

(4) Send a notification to the teacher or administrator when an appeal is submitted.

(5) Provide feedback to the student on the outcome of the appeal.