**PROJECT X - AUTOMATED ATTENDANCE APP**

**Conceptual Model**

Group Name:

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**TRIPLE THREAT (+1)**

Submitted by:

**John Kenneth Gade**

**Cyril Lloyd Balanay**

**Ivan Vasay**

**Keynt Harly Adol**

Submitted to:

**Terry Watts**

**CONCEPTUAL MODEL/DIAGRAM**

**A screenshot of a computer

AI-generated content may be incorrect.Key Entities and Their Roles**

1. **User**
   1. Represents all users in the system, including students and lecturers.
   2. Attributes: **user\_id**, **name**, **email**, **password**, **role**.
   3. Relationships:
      1. A User can be either a **Lecturer** or a **Student**.
      2. A Lecturer manages Classes.
      3. A Student is enrolled in one or more Classes.
2. **Lecturer**
   1. A specialized type of User responsible for managing Classes and tracking Attendance.
   2. Attributes: **lecturer\_id**, **user\_id** (linked to User).
   3. Relationships:
      1. A Lecturer can create and manage multiple Classes.
3. **Student**
   1. Another type of User who attends Classes and participates in QR code-based attendance.
   2. Attributes: **student\_id**, **user\_id**, **attendance\_status**.
   3. Relationships:
      1. A Student enrolls in Classes and records Attendance.
4. **Class**
   1. Represents an academic class/session assigned to a Lecturer.
   2. Attributes: **class\_id**, **class\_name**, **lecturer\_id**.
   3. Relationships:
      1. A Lecturer teaches multiple Classes.
      2. Students enroll in Classes.
5. **Enrollment**
   1. Tracks the relationship between Students and Classes.
   2. Attributes**: enrollment\_id**, **student\_id**, **class\_id**.
   3. Relationships:
      1. Links Students to the Classes they are enrolled in.
6. **Attendance**
   1. Records student participation in Classes through QR code and GPS validation.
   2. Attributes: **attendance\_id**, **student\_id**, **class\_id**, **timestamp**, **status**, **gps\_location**, **qr\_code\_scanned**.
   3. Relationships:
      1. A Student has multiple Attendance records for different Classes.
7. **QR Code**
   1. Stores QR codes generated for each Class session.
   2. Attributes: **qr\_code\_id**, **class\_id**, **generated\_time**, **expiration\_time**.
   3. Relationships:
      1. A QR Code is linked to a Class.
      2. Used by Students to mark their Attendance.