Team 3 – Courier/Post Office Database:
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**Team Project - Checkpoint #1**

Courier/Post office database: Gather data concerning the packages going in and out of the post office, where they are going, and who is sending them. Additionally, the team would have to build a database of customers in relation to what packages they are shipping out. The database should have the functionality to provide 'tracking' history for packages both for customers and employees.

- Acquire domain knowledge for your project topic
- Create the requirements document
    - Details of the mini-world
    - Entities and their properties, relationships, and constraints
    - Generate a conceptual schema
- Submission due on Monday, February 21

**Domain Knowledge (what we know about our topic):**

- Data going in/out of post office
    - Size/dimensions of packages
    - The price of the packages being sent (which is dependent on size/location of destination)
- Where they are going
    - The address of the recipient of the package
- Who is sending the packages
    - Credentials of the sender
- Database of customers in relation to what packages they are shipping out
    - The addresses of the sender and the recipient
    - Packages need tracking numbers
        - To detail time of delivery
        - Location of delivery
        - Delivery status of package (delivered or still traveling)
- Provide **tracking history** for packages both for customers and employees
    - Employees
        - Approval of packages being sent

**Details of the Mini-World:**

- Mini-World Entities:
    - Employees
        - <u>Employee ID</u> (Constraint: 7 digits, unique)

        - Name Composite Attribute: First, middle, and last name(24 total character limit, no numbers)
        - Handles (relationship to Mail, M:N)
        - Works For (relationship to Locations, 1 : N) double line bc absolutely needed
        - Supervises (relationship to Employee, 1 supervisor : M supervisee)
    - Sender
        - Phone number (Constraint: Valid phone number, unique)
        - E-mail address (Constraint: Valid e-mail address, unique)
        - Name (Composite Attribute: First, middle, and last name(24 total character limit, no numbers)
        - "From" address (Constraint: must be a valid address with city state and zip code)
        - Send & Track (relationship, 1:N)
    - Recipient – Weak Entity of Sender (Recipient only exists if Sender exists)
        - "To" address (Constraint: must be a valid address with city state and zip code)
        - Name Composite Attribute: First, middle, and last name(24 total character limit, no numbers)
        - Recipient of (Identifying relationship to Sender, 1:1)
        - Receive & Track (relationship to Mail, 1:N)
    - Mail
        - Tracking numbers (Constraint: amount of characters used in id# (max 40), unique)
        - Type of Mail (Constraint: "Parcel", "Letter")
        - Size and Dimension (Constraint: max/min size of packages)
        - "To" address (Constraint: must be a valid address with city state and zip code)
        - "From" address (Constraint: must be a valid address with city state and zip code)
        - Classes of Shipping (Constraint: Priority mail express, priority mail, First Class)
        - Cost of Shipping (Derived attribute: dependent on class of shipping and size and dimension)
        - Status (Constraint: "Not Found", "In Transit", "Out for Delivery", "Delivered", "Failed Attempt", "Exception", "Expired")
    - Locations
        - Address(of location) (Constraint: must be a valid address with city state and zip code)
        - Number of employees – derived attribute
        - Type of Establishment (Constraint: "Warehouse", "Post Office")
        - Stores (relationship to Mail, 1 "Warehouse" : M, only if Location is "Warehouse")
        - Employs (relationship to Employee, M : N)