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Group 1
Data Management and Database Design.
P2. Database Design , Initial ERD

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Team Members:

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BUSINESS PROBLEMS ADDRESSED

Manually tracking waste from generation to recycling can be a time-consuming and challenging task. It can be difficult to maintain accurate records and ensure that all waste is properly accounted for throughout the process. Waste management system can automate many of the tasks involved such as tracking and reporting, making it easier to maintain accurate records and identify areas for improvement. This can help track waste from generation to disposal or recycling and provide insights into waste management performance.

Fields where problems are addressed:

Cost: Managing waste can be expensive, including the costs of collection, transportation, disposal, and processing.

Funding: Waste management systems typically require significant investments in equipment, infrastructure, and personnel. Funding sources may be limited, and there may be competition for available resources.

Capacity constraints: There may be limitations on the capacity of waste management facilities, such as landfills and incinerators, leading to the need for new or expanded facilities.

Resource constraints: There may be constraints on the availability of resources, such as fuel, water, and raw materials, affecting the operation and management of waste management systems.

Market fluctuations: Market conditions for recycled materials can be volatile, affecting the financial viability of recycling programs. Companies must stay informed of and respond to changes in market conditions.

Data management: Effective data management is critical for the success of a waste management system, including tracking and reporting on waste volumes, composition, and disposal methods. Companies must invest in effective data management systems and processes.

LIST OF ALL ENTITIES

1	Customer	The purpose of this master entity is to take the complaints and collect garbage from particular Customer.
2	Garbage Bin	The track the location of all the bins present in the area
3	Garbage Vehicles	The transportation facility provided to collect the garbage from different areas.
4	Waste Type	To differentiate the type of waste we collect and process it
5	Disposal Company	Manages and owns the garbage disposal sites
6	Garbage Disposal Site	The number of locations in a city to dispose the garbage by vehicle
7	Recycling Centers	The type of garbage identified and then sent to recycling centers to process it into something useful.
8	Employee	To store the employee information and work orders.
9	Work Order	To maintain the record of work done by employee in the disposal company.
10	Payment	To record the payment information of system.

ENTITIES RELATIONSHIP:
- Customer uses Garbage bins to dispose the waste.
- Garbage bins consists of different waste types.
- Garbage Vehicles collects waste from Garbage bins.
- Garbage Vehicle transports the waste to the garbage disposal Sites or Recycling centers depending on the waste type.

- Disposal Company owns garbage disposal Sites.
- Employee works for the Disposal Company.
- Employee is assigned to work order.
- Work order is associated to payment.

KEY DESIGN DECISIONS:

1)Garbage vehicle: The garbage collected from different locations using the company's transportation service.

2)Waste Type: Understanding the type of waste is important in determining the appropriate disposal method, recycling opportunities, and material recovery potential.

3)Disposal site: Disposing centers for the garbage collected from the different locations.

4)Recycling Centers: Centers for recycling and recovery of garbage type need to be identified, including collection and processing methods, materials to be targeted for recycling, and end markets for recovered materials.

5)Work Order: The status of work done is maintained. The start time and end time of work done and tracking of payments.