

Database Systems Project part 1

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Part 1: Develop a conceptual data model reflecting the following requirements:

- a. Identify the main entity types.
 - Client, Employee, Service Requirements, Equipment

Parts b, and c are represented in the following table:

Entity 1	Relationship	Entity 2	Participation	Cardinality	Multiplicity	Type of relationship
Client	Has	Service Requirements	1	*	1..*	1:*
Service Requirements	Relates to	Client	1	1	1..1	
Staff	Assigned to	Client	0	*	0..*	*:*
Client	Hosts	Staff	1	*	1..*	
Service Requirements	Uses	Equipment	1	*	1..*	*:*
Equipment	Needed for	Service Requirements	1	*	1..*	
Staff	Utilizes	Equipment	1	*	1..*	*:*
Equipment	Used by	Staff	1	*	1..*	
Client	Requires	Equipment	1	*	1..*	*:*
Equipment	Needed for	Client	1	*	1..*	

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d. Identify attributes and associate them with entity or relationship types.

- Client:
 - Client Number
 - First Name
 - Last Name
 - Address
 - Telephone Number

- Employee:
 - Staff Number
 - First Name
 - Last Name
 - Address
 - Salary
 - Telephone Number

- Service Requirements:
 - Requirement ID
 - Start Date
 - Start Time
 - Duration
 - Comments
 - Client Number (FK)

- Equipment:
 - Equipment ID
 - Description
 - Usage
 - Cost

- Assignment (Relationship):
 - Staff Number (FK)
 - Requirement ID (FK)

- Requirement Equipment (Relationship):
 - Equipment ID (FK)
 - Requirement ID (FK)
 - Usage Frequency (maybe)

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e. Determine candidate and primary key attributes for each (strong) entity type.

- Equipment: EquipmentID (Primary Key and Candidate Key)
- Staff: StaffNo (Primary Key and Candidate Key)
- Client: ClientNo (Primary Key and Candidate Key)
- ServiceRequirements: ServiceID (Primary Key and Candidate Key)

f. Generate the E-R diagram for the conceptual level (no FKs as attributes)

