

1. Map Strong Entities

Company Director and Founder

Company_Director_and_Founder (Employee_ID, Employee_Name, Employee_Role, Employee_Dept, Phone_No, Email)

PRIMARY KEY: Employee_ID

Employee_ID is a valid Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Employee_Name is a valid Employee Name.

Type: character

Display format: XXXXXXXXX

Length: 30

Employee_Role is a valid Employee Role.

Type: character

Display format: XXXXXXXXX

Length: 35

Employee_Department is a valid Employee Department.

Type: character

Display format: XXXXXXXXX

Length: 35

Phone_No is a valid Phone Number.

Type: integer

Range: low value = 10000000, high value = 99999999

Display format: 99999999

Length: 8

Email is a valid Email Address.

Type: character

Display format: XXXXXXXXX

Length: 45

Chief Biomedical Engineer

Chief_Biomedical_Engineer (Employee_ID, Employee_Name, Employee_Role, Manager_Emp_ID, Empl_Dept, Phone_No, Email)

PRIMARY KEY: Employee_ID

Employee_ID is a valid Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Employee_Name is a valid Employee Name.

Type: character

Display format: XXXXXXXXX

Length: 30

Employee_Role is a valid Role.

Type: character

Display format: XXXXXXXXX

Length: 35

Manager_Emp_ID is a valid Manager's Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Emp_Department is a valid Department.

Type: character

Display format: XXXXXXXXX

Length: 35

Phone_No is a valid Phone Number.

Type: integer

Range: low value = 10000000, high value = 99999999

Display format: 99999999

Length: 8

Email is a valid Email.

Type: character

Display format: XXXXXXXXX

Length: 45

Medical Equipment

Medical_Equipment (Asset_No, Serial_No, Model, Brand, Equipment_Location, Comission_Date, Equipment_Category, Equipment_Status)

PRIMARY KEY: Asset_No, Serial_No

Asset_No is a valid Asset Number.

Type: character

Range: low value = XX100000, high value = XX999999

Display format: XX999999

Length: 8

Serial_No is a valid Manufacturer's Serial Number.

Type: character

Display format: XXXXXXXXX

Length: 20

Model is a valid Equipment Model.

Type: character

Display format: XXXXXXXXX

Length: 30

Brand is a valid Equipment Brand.

Type: character

Display format: XXXXXXXXX

Length: 15

Equipment_Location is a valid Equipment Location.

Type: character

Display format: XXXXXXXXX

Length: 20

Commission_Date is a valid Commission Date.

Type: date

Display format: DD-MMM-YY

Equipment_Category is a valid Equipment Category.

Type: character

Display format: XXXXXXXXX

Length: 40

Equipment_Status is a valid Equipment Status.

Type: variable character

Display format: XXXXXXXXX

Valid entries: Active, Inactive, Lost

Length: 10

Part

Part (Item_No, Description, Sell_Price, Purchase_Price, Manufacturer)

PRIMARY KEY: Item_No

Item_Number is a valid AS Item Number.

Type: integer

Range: low value = 100000, high value = 99999

Display format: 99999

Length: 5

Description is a valid Description of Part.

Type: numeric

Display format: XXXXXXXXX

Length: 40

Sell_Price is a valid Sell Price.

Type: numeric

Range: low value = 0.00, high value = 99999.99

Display format: 99999.99

Length: 7

Purchase_Price is a valid Purchase Price from the Manufacturer.

Type: numeric

Range: low value = 0.00, high value = 99999.99

Display format: 99999.99

Length: 7

Manufacturer is a valid Manufacturer's Name.

Type: character

Display format: XXXXXXXXX

Length: 20

2. Map Weak Entities

Technical Service Manager

Technical Service Manager (Employee_ID, Employee_Name, Employee_Role, Manager_Emp_ID, Employee_Dept, Phone_No, Email)

PRIMARY KEY: Employee_ID

FOREIGN KEY: Manager_Emp_ID REFERENCES Company_Director_and_Founder

Employee_ID is a valid Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Employee_Name is a valid Employee Name.

Type: character

Display format: XXXXXXXXX

Length: 30

Employee_Role is a valid Employee Role.

Type: character

Display format: XXXXXXXXX

Length: 35

Manager_Emp_ID is a valid Manager's Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Emp_Department is a valid Employee Department.

Type: character

Display format: XXXXXXXXX

Length: 35

Phone_No is a valid Phone Number.

Type: integer

Range: low value = 10000000, high value = 99999999

Display format: 99999999

Length: 8

Email is a valid Email Address.

Type: character

Display format: XXXXXXXXX

Length: 45

Technician

Technician (Employee_ID, Employee_Name, Employee_Role, Manager_Emp_ID, Empl_Dept, Phone_No, Email)

PRIMARY KEY: Employee_ID

FOREIGN KEY: Manager_Emp_ID REFERENCES Technical_Service_Manager

Employee_ID is a valid Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Employee_Name is a valid Employee Name.

Type: character

Display format: XXXXXXXXX

Length: 30

Employee_Role is a valid Employee Role.

Type: character

Display format: XXXXXXXXX

Length: 35

Manager_Emp_ID is a valid Manager's Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Empl_Department is a valid Employee Department.

Type: character

Display format: XXXXXXXXX

Length: 35

Phone_No is a valid Phone Number.

Type: integer

Range: low value = 10000000, high value = 99999999

Display format: 99999999

Length: 8

Email is a valid Email Address.

Type: character

Display format: XXXXXXXXX

Length: 45

AS Job (Activtec Solutions Job)

AS_Job (AS_Job_No, AS_Job_Creation_Date, Healthcare_Facility, Technician_Empl_ID, Equipment_Location, Equipment_Asset_No, Equipment_Serial_No, Equipment_Model, Equipment_Brand, As_Job_Category, AS_Job_Request)

PRIMARY KEY: AS_Job_No

FOREIGN KEYS: Technician_Empl_ID	<u>REFERENCES</u>	Technician
Equipment_Asset_No	<u>REFERENCES</u>	Medical_Equipment
Equipment_Serial_No	<u>REFERENCES</u>	Medical Equipment

AS_Job_No is a valid AS Job Number.

Type: integer

Range: low value = 1000000, high value = 9999999

Display format: 9999999

Length: 7

AS_Job_Creation_Date is a valid AS Job Creation Date.

Type: date

Display format: DD-MMM-YY

Healthcare_Facility is a valid Healthcare Facility of Service.

Type: character

Display format: XXXXXXXXX

Length: 30

Technician_Employee_ID is a valid Assigned Technician's Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Equipment_Location is a valid Equipment Location.

Type: character

Display format: XXXXXXXXX

Length: 20

Equipment_Asset_No is a valid Equipment Asset Number.

Type: character

Range: low value = XX100000, high value = XX999999

Display format: XX999999

Length: 8

Equipment_Serial_No is a valid Equipment Serial Number.

Type: character

Display format: XXXXXXXXX

Length: 20

Equipment_Model is a valid Equipment Model.

Type: character

Display format: XXXXXXXXX

Length: 25

Equipment_Brand is a valid Equipment Brand.

Type: character

Display format: XXXXXXXXX

Length: 15

AS_Job_Category is a valid AS Job Category.

Type: character

Display format: XXXXXXXXX

Valid entries: Maintenance, Repair

Length: 15

AS_Job_Request is a valid AS Job Request.

Type: variable character

Display format: XXXXXXXXX

Length: 15

FSR (Field Service Report)

FSR (FSR_No, AS_Job_No, FSR_Creation_Date, Healthcare_Facility, Technician_Emp_ID, Equipment_Location, Equipment_Asset_No, Equipment_Serial_No, Equipment_Model, Equipment_Brand, Job_Category, AS_Job_Request, Service_Hours_Taken, Job_Performed)

PRIMARY KEY: FSR_No

FOREIGN KEYS: AS_Job_No	<u>REFERENCES</u>	AS_Job
Technician_Emp_ID	<u>REFERENCES</u>	Technician
Equipment_Asset_No	<u>REFERENCES</u>	Medical_Equipment
Equipment_Serial_No	<u>REFERENCES</u>	Medical_Equipment

FSR_No is a valid Field Service Report Number.

Type: integer

Range: low value = 1000000, high value = 9999999

Display format: 9999999

Length: 7

AS_Job_No is a valid AS Job Number.

Type: integer

Range: low value = 10000, high value = 99999

Display format: 99999

Length: 5

FSR_Creation_Date is a valid FSR Creation Date.

Type: date

Display format: DD-MMM-YY

Healthcare_Facility is a valid Healthcare Facility.

Type: character

Display format: XXXXXXXXX

Length: 30

Technician_Employee_ID is a valid AS Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Equipment_Location is a valid Equipment Location.

Type: character

Display format: XXXXXXXXX

Length: 20

Equipment_Asset_No is a valid Asset Number.

Type: character

Display format: XX999999

Range: low value = XX100000, high value = XX999999

Length: 8

Equipment_Serial_No is a valid Equipment Serial Number.

Type: character

Display format: XXXXXXXXX

Length: 20

Equipment_Model is a valid Equipment Model.

Type: character

Display format: XXXXXXXXX

Length: 25

Equipment_Brand is a valid Equipment Brand.

Type: character

Display format: XXXXXXXXX

Length: 15

AS_Job_Category is a valid AS Job Category.

Type: character

Display format: XXXXXXXXX

Valid entries: Maintenance, Repair

Length: 15

AS_Job_Request is a valid AS_Job_Request.

Type: variable character

Display format: XXXXXXXXX

Length: 15

Service_Hours_Taken is the Service Hours Taken to Complete Job.

Type: integer

Range: low value = 0, high value = 99

Display format: 99

Length: 5

Job_Performed is a valid Description of Job Performed.

Type: variable character

Display format: XXXXXXXXX

Length: 25

Service Invoice

Service_Invoice (Invoice_No, FSR_No, Invoice_Creation_Date, Technician_Emp_ID, BME_Dept, Service_Charge, Equipment_Asset_No, Equipment_Serial_No, Equipment_Model, Equipment_Brand, Job_Category, Service_Hours_Taken)

PRIMARY KEY: Invoice_No

FOREING KEYS: FSR_No	<u>REFERENCES</u>	FSR
Technician_Emp_ID	<u>REFERENCES</u>	Technician
Equipment_Asset_No	<u>REFERENCES</u>	Medical_Equipment
Equipment_Serial_No	<u>REFERENCES</u>	Medical_Equipment

Invoice_No is a valid Service Invoice Number.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

FSR_No is a valid Field Service Report Number.

Type: integer

Range: low value = 1000000, high value = 9999999

Display format: 9999999

Length: 7

Technician_Employee_ID is a valid AS Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Invoice_Creation_Date is a valid Invoice Creation Date.

Type: date

Display format: DD-MMM-YY

BME_Dept is a valid Biomedical Engineering Department to Charge.

Type: character

Display format: XXXXXXXXX

Length: 40

Service_Charge is a valid Service Amount to Charge.

Type: numeric

Range: low value = 0.00, high value = 99999.99

Display format: 99999.99

Length: 7

Equipment_Asset_No is a valid Equipment Asset Number.

Type: character

Display format: XX999999

Range: low value = XX100000, high value = XX999999

Length: 8

Equipment_Serial_No is a valid Equipment Serial Number.

Type: character

Display format: XXXXXXXXX

Length: 20

Equipment_Model is a valid Equipment Model.

Type: character

Display format: XXXXXXXXX

Length: 25

Equipment_Brand is a valid Equipment Brand.

Type: character

Display format: XXXXXXXXX

Length: 15

AS_Job_Category is a valid AS Job Category.

Type: character

Display format: XXXXXXXXX

Valid entries: Maintenance, Repair

Length: 15

Service_Hours_Taken is the Service Hours Taken to Complete Job.

Type: integer

Range: low value = 0, high value = 99

Display format: 99

Length: 5

Part Assignment

Service_Invoice (Invoice_No, Item_No, Description, Part_Quantity)

PRIMARY KEY: Invoice_No, Item_No

FOREING KEYS: Invoice_No REFERENCES Service_Invoice
 Item_No REFERENCES Part

Invoice_No is a valid Service Invoice Number.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Item_Number is a valid Item Number.

Type: integer

Range: low value = 10000, high value = 99999

Display format: 99999

Length: 5

Part_Quantity is a valid Part Quantity Used to Complete Job.

Type: integer

Range: low value = 0, high value = 999

Display format: 999

Length: 3

BME (Biomedical Engineer)

BME (Employee_ID, Employee_Name, Employee_Role, Manager_Emp_ID, Empl_Dept, Phone_No, Email)

PRIMARY KEY: Employee_ID

FOREING KEY: Manager_Emp_ID REFERENCES Chief_Biomedical_Engineer

Employee_ID is a valid Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Employee_Name is a valid Employee Name.

Type: character

Display format: XXXXXXXXX

Length: 30

Employee_Role is a valid Role.

Type: character

Display format: XXXXXXXXX

Length: 28

Manager_Emp_ID is a valid Manager's Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Emp_Department is a valid Department.

Type: character

Display format: XXXXXXXXX

Length: 35

Phone_No is a valid Phone Number.

Type: integer

Range: low value = 10000000, high value = 99999999

Display format: 99999999

Length: 8

Email is a valid Email.

Type: character

Display format: XXXXXXXXX

Length: 45

BME Job (Biomedical Engineering Job)

BME_Job (BME_Job_No, BME_Job_Creation_Date, Equipment_Asset_No, BME_Emp_ID, Equipment_Location, BME_Job_Description, BME_Job_Category, BME_Job_Status)

PRIMARY KEY: BME_Job_No

FOREING KEYS: Equipment_Asset_No [REFERENCES](#) Medical_Equipment
BME_Emp_ID [REFERENCES](#) BME

BME_Job_No is a valid Biomedical Engineering Job Number.

Type: integer

Range: low value = 1000000, high value = 9999999

Display format: 9999999

Length: 7

BME_Job_Creation_Date is a valid AS Job Creation Date.

Type: date

Display format: DD-MMM-YY

Equipment_Asset_No is a valid Equipment Asset Number.

Type: character

Range: low value = XX100000, high value = XX999999

Display format: XX999999

Length: 8

BME_Emp_ID is a valid Assigned Biomedical Engineer's Employee ID.

Type: integer

Range: low value = 100000, high value = 999999

Display format: 999999

Length: 6

Equipment_Location is a valid Equipment Location.

Type: character

Display format: XXXXXXXXX

Length: 20

BME_Job_Description is a valid Biomedical Engineering Job Description.

Type: character

Display format: XXXXXXXXX

Length: 25

BME_Job_Category is a valid Biomedical Engineering Job Category.

Type: character

Display format: XXXXXXXXX

Valid entries: Maintenance, Repair

Length: 15

BME_Job_Status is a valid Biomedical Engineering Job Status.

Type: variable character

Display format: XXXXXXXXX

Valid entries: In Progress, Completed, Outstanding

Length: 15

