Technical Appendix

Boss Tires

5.1) MS Access' relationships are shown below. Access does not have the functionality to show the DDLs for tables, but it can show them for queries. The 7 queries are listed below:

Query 1: Employee Full Name

```
SELECT [Employee]![Employee First Name] & ' ' &
[Employee]![Employee Last Name] AS [Employee Full Name]
FROM Employee;
```

Query 2: Client Full Name

```
SELECT [Clients]![Client First Name] & ' ' & [Clients]![Client
Last Name] AS [Client Full Name]
FROM Clients;
```

Query 3: Inventory Intake

```
SELECT [Inventory Sale].*, [Quantity Used]*[Unit Price]
AS [Extended Price], Services.[Service Cost],
[Service Cost]+[Extended Price]
AS Total
FROM Services INNER JOIN (Jobs INNER JOIN [Inventory Sale]
ON Jobs.JobNumber = [Inventory Sale].[Job Number])
ON Services.ServiceID = Jobs.ServiceID;
```

Query 4: Inventory On Hand

```
SELECT InventoryIntake.[Product Name], Nz([QuantityReceived],0)
AS StockIn, Nz([QuantityUsed],0) AS StockOut, [StockIn]-
[StockOut] AS QuantityOnHand
FROM InventoryIntake LEFT JOIN InventoryOut ON
InventoryIntake.[Product Name] = InventoryOut.[Product Name];
```

Query 5: Inventory Out

```
SELECT Jobs.IsPaid, [Inventory Sale].[Product Name],
Sum([Inventory Sale].[Quantity Used]) AS QuantityUsed
FROM Jobs INNER JOIN [Inventory Sale]
ON Jobs.JobNumber = [Inventory Sale].[Job Number]
GROUP BY Jobs.IsPaid, [Inventory Sale].[Product Name]
HAVING (((Jobs.IsPaid)=Yes) AND (([Inventory Sale].[Product
Name]) Is Not Null));
```

Query 6: Cost of Goods Sold

```
SELECT [Sale Detail Query].[Job Number], [Sale Detail
Query].[Quantity Used], [Inventory Intake].[Unit Cost], [Sale
Detail Query].[Extended Price], ([Unit Cost]*[Quantity Used])
AS [Ext Cost], [Extended Price]-([Unit Cost]*[Quantity Used])
AS [Profit/Loss]
FROM [Sale Detail Query] INNER JOIN [Inventory Intake] ON [Sale
Detail Query].[Product Name] = [Inventory Intake].[Product Name]
```

```
GROUP BY [Sale Detail Query].[Job Number], [Sale Detail
Query].[Quantity Used], [Inventory Intake].[Unit Cost], [Sale
Detail Query].[Extended Price], ([Unit Cost]*[Quantity Used]),
[Extended Price]-([Unit Cost]*[Quantity Used]);
```

Query 7: Sale Detail Query

```
SELECT [Inventory Sale].*, [Quantity Used]*[Unit Price] AS
[Extended Price], Services.[Service Cost], [Service
Cost]+[Extended Price]
AS Total
FROM Services INNER JOIN (Jobs INNER JOIN [Inventory Sale] ON
Jobs.JobNumber = [Inventory Sale].[Job Number])
ON Services.ServiceID = Jobs.ServiceID;
```

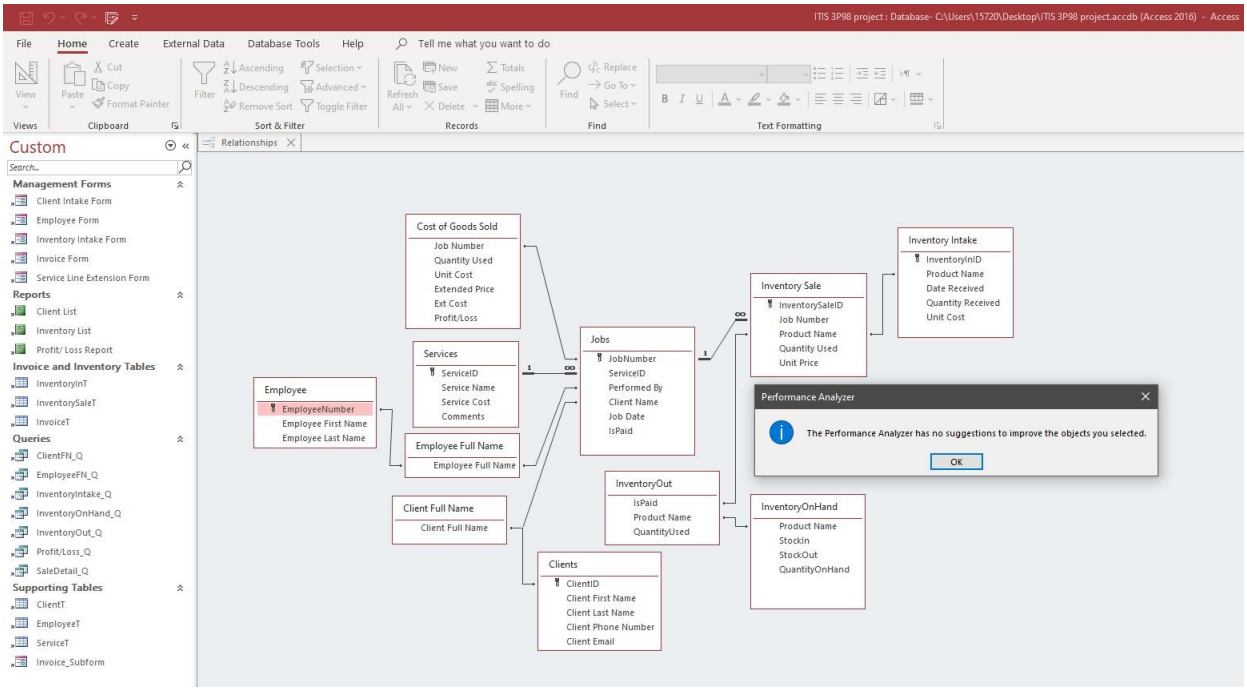

Figure 1: Relationship Pane for DB

The relationship pane shown above exhibits successful execution of the query DDLs. The tables are executed through the functional *Table Design* panel, and the entire database is confirmed to be fully optimized using the performance analyzer feature.

5.2) The ERD diagram and the relational schema is in this section. Both diagrams were created using the ERDPlus software.

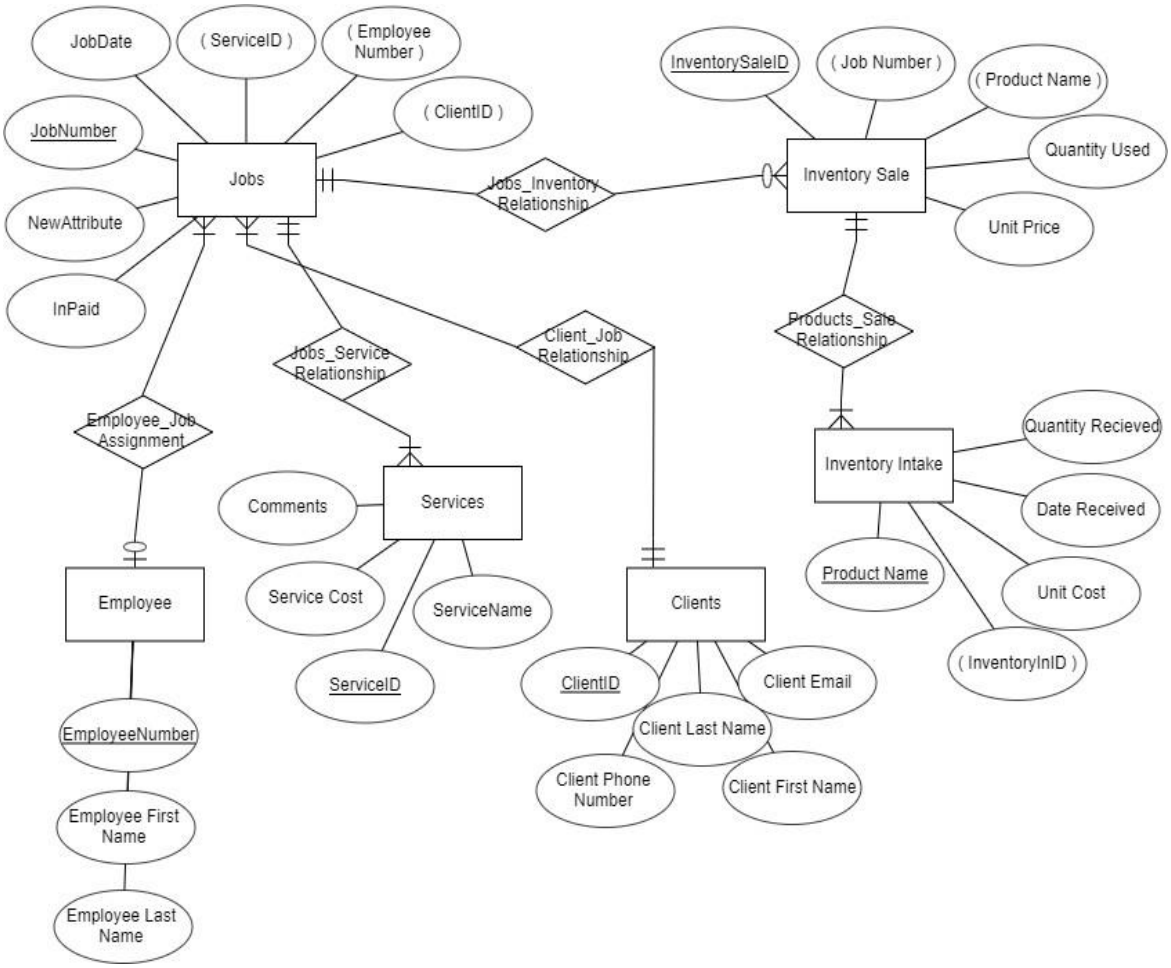

Figure 2: ERD Database Schema

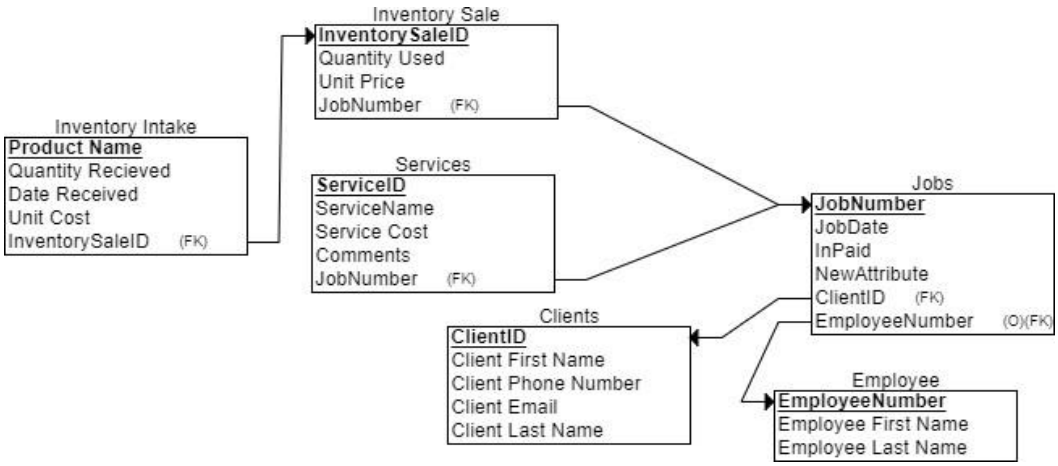

Figure 3: Back-end Relationship Schema