**Class Exercise – 11.3**

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**Submission**: Save this Word document with your answers as a PDF file and upload the PDF file to Canvas.

**Query Optimization**

**Based on this ERD**

Diagram

Description automatically generated

**And using the following query:**

**SELECT P\_CODE, SUM(LINE\_UNITS)**

**FROM LINE**

**GROUP BY P\_CODE**

**HAVING SUM(LINE\_UNITS) > (SELECT MAX(LINE\_UNITS) FROM LINE);**

1. **What is the likely data sparsity of the LINE\_UNITS column?**

High.

1. **Should you create an index? If so, what would the index column(s) be and why.**

Yes, you should make an index on LINE\_UNITS. LINE\_UNITS as an index would be helpful for the inner query.

1. **Should you create an index on P\_CODE and Why?   
   If so, write the SQL command to create that index. If not, explain your reasoning.**

Yes, it will help in query execution because a GROUP BY is being performed in the query.

CREATE INDEX LINE\_NDX1 on LINE(P\_CODE)