

These questions complement continuing class discussion of the paper describing *AQuery*<sup>1</sup> and Graefe's survey.<sup>2</sup> The focus of this exercise is studying the query plans generated by the PostgreSQL optimizer with and without various indexes for the simple microbenchmark database instance discussed earlier, and on other methods for evaluating these queries.

1. List the members of your group below. Underline your name.
  
2. Provide a SQL expression of the *packet-grouping* query query. Based on your experimentation in PostgreSQL, depict the generated query plan in the absence of any indexes. Explain the physical operators chosen and comment on the reasons for their selection. Note the estimated and actual run times based on your study.

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<sup>1</sup>Alberto Lerner and Dennis Shasha, "AQuery: Query Language for Ordered Data, Optimization Techniques, and Experiments," in *Proceedings of the 29th International Conference on Very Large Data Bases (VLDB)* (Berlin, Germany, 2003).

<sup>2</sup>Goetz Graefe, "Query evaluation techniques for large databases," *ACM Computing Surveys* 25/2 (1993).

3. Repeat Question 2 in the presence of the most profitable indexes you were able to determine.