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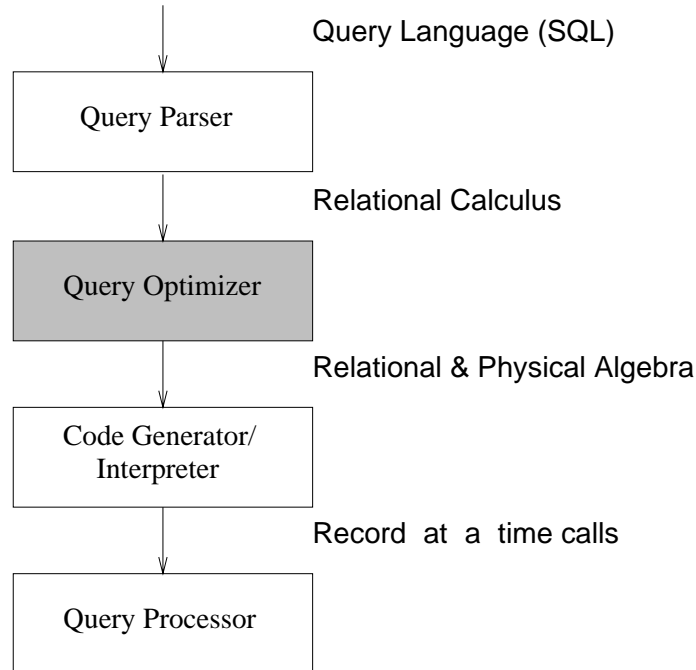


Figure 1: The database query processing pipeline.

The database query processing pipeline is a sequence of steps that transform a user query into a set of records. The process starts with the user providing a query in the Query Language (SQL). This query is then passed to the Query Parser, which converts it into a Relational Calculus expression. The Query Optimizer then takes this expression and generates a Relational & Physical Algebra expression. Finally, the Code Generator/Interpreter generates a set of records, which are then processed by the Query Processor. The Query Processor uses a record-at-a-time approach to process the records.

The database query processing pipeline is a sequence of steps that transform a user query into a set of records. The process starts with the user providing a query in the Query Language (SQL). This query is then passed to the Query Parser, which converts it into a Relational Calculus expression. The Query Optimizer then takes this expression and generates a Relational & Physical Algebra expression. Finally, the Code Generator/Interpreter generates a set of records, which are then processed by the Query Processor. The Query Processor uses a record-at-a-time approach to process the records.

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graph TD; Rewriter[Rewriter] --> Planner[Planner]; AlgebraicSpace[Algebraic Space] <--> Planner; MethodStructureSpace[Method Structure Space] <--> Planner; Planner <--> CostModel[Cost Model]; CostModel <--> SizeDistributionEstimator[Size Distribution Estimator];
```

The diagram illustrates the planning architecture, divided into two stages by a dashed line:

- Rewriting Stage (Declarative):** Contains the **Rewriter** component.
- Planning Stage (Procedural):** Contains the **Planner**, **Algebraic Space**, **Method Structure Space**, **Cost Model**, and **Size Distribution Estimator**.

The flow of information is as follows:

- The **Rewriter** provides input to the **Planner**.
- The **Planner** interacts bidirectionally with the **Algebraic Space** and the **Method Structure Space**.
- The **Planner** interacts bidirectionally with the **Cost Model**.
- The **Cost Model** interacts bidirectionally with the **Size Distribution Estimator**.

අනුකූලතාවය සහ සමානතාවය සහතික කිරීම සඳහා අවශ්‍ය වන සියලුම තොරතුරු සපුරා ඇත. එමෙන්ම, සියලුම තොරතුරු සහතික කිරීම සඳහා අවශ්‍ය වන සියලුම තොරතුරු සපුරා ඇත. එමෙන්ම, සියලුම තොරතුරු සහතික කිරීම සඳහා අවශ්‍ය වන සියලුම තොරතුරු සපුරා ඇත.

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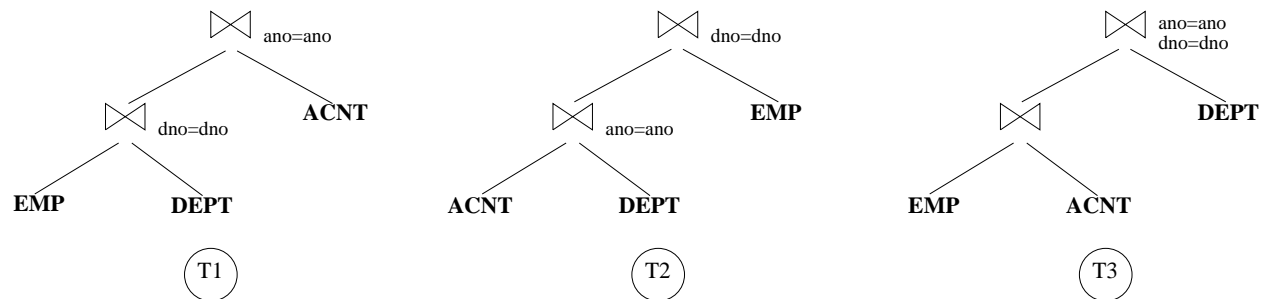




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$\frac{1}{m} \log \frac{1}{n}$ ,  $\frac{1}{m} \log \frac{1}{n}$ ,  $\frac{1}{m} \log \frac{1}{n}$

[illegible]

විද්‍යාලයේ සිටින අයට පමණක් සීමා කළ යුතු වෛෂමයක් ලෙස සලකා බැලිය යුතුය.

[illegible]







මම ඉතිරි කර ඇති මාගේ සියලුම ආදායම් මාගේ පවුල සඳහා භාවිත කරමිනි. මාගේ පවුලේ සියලුම සාමාජිකයන් මාගේ ආදායම මත රඳා පවතී. මාගේ ආදායම මාගේ පවුල සඳහා භාවිත කරමිනි. මාගේ පවුලේ සියලුම සාමාජිකයන් මාගේ ආදායම මත රඳා පවතී.

[illegible]















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Organization Type	Percentage
Non-profit	45%
Government	35%
For-profit	15%
Other	5%

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[illegible][illegible]







[illegible]

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