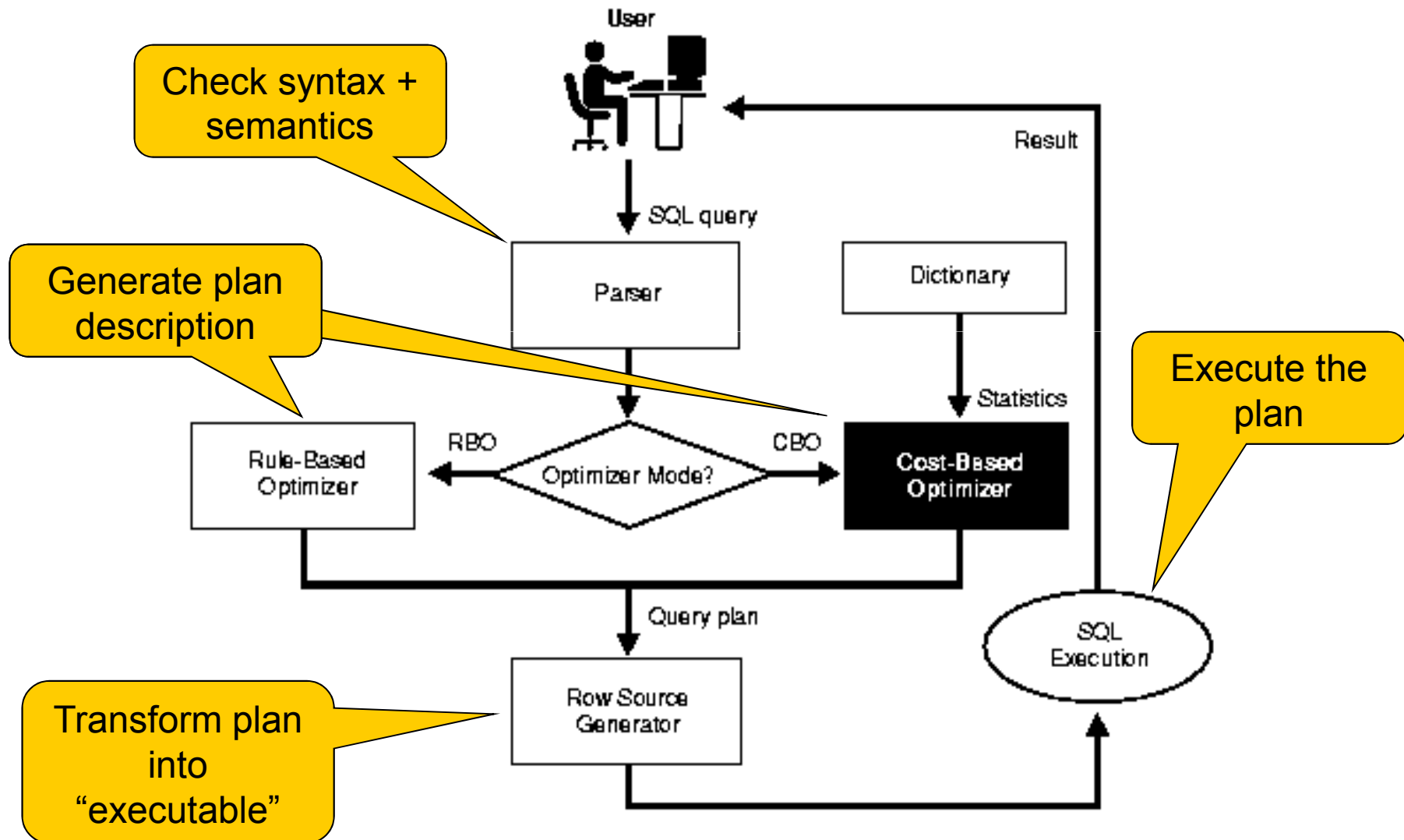


# Optimizer Overview



# Cost vs. Rule

- Rule
  - Hardcoded heuristic rules determine plan
    - “Access via index is better than full table scan”
    - “Fully matched index is better than partially matched index”
    - ...
- Cost (2 modes)
  - Statistics of data play role in plan determination
    - Best throughput mode: retrieve **all rows** asap
      - First compute, then return fast
    - Best response mode: retrieve **first row** asap
      - Start returning while computing (if possible)

# How to set which one?

- Instance level: Optimizer\_Mode parameter
  - Rule
  - Choose
    - if statistics then CBO (all\_rows), else RBO
  - First\_rows, First\_rows\_n (1, 10, 100, 1000)
  - All\_rows
- Session level:
  - Alter session set optimizer\_mode=<mode>;
- Statement level:
  - Hints inside SQL text specify mode to be used