

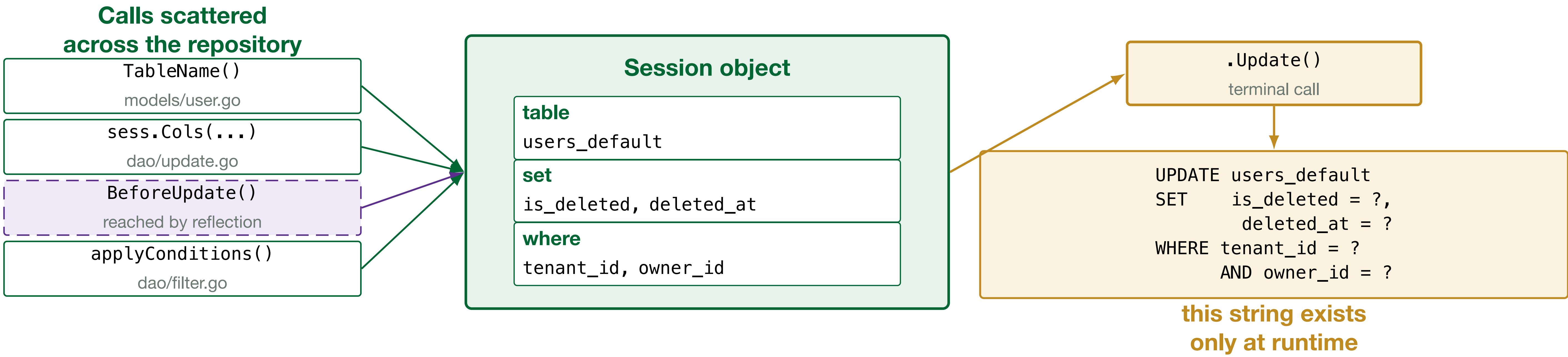
AutoSQL: Extracting SQL Templates from Imperative ORM Code in Large-Scale Repositories

An LLM code agent that retrieves context structurally and by pattern search, and reconstructs the SQL that only exists at runtime

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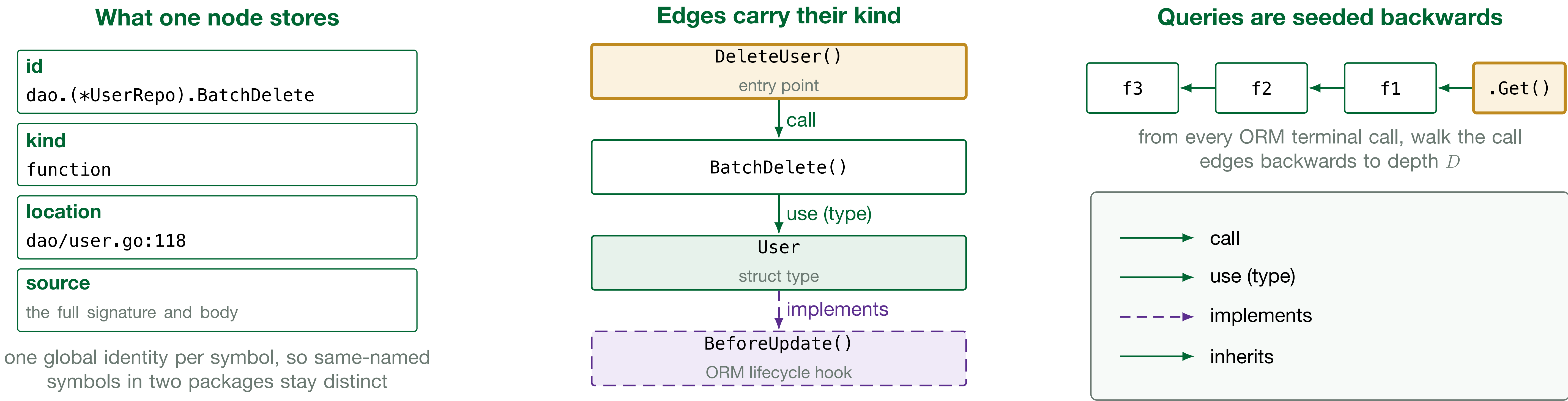


The statement is assembled at runtime, from scattered calls

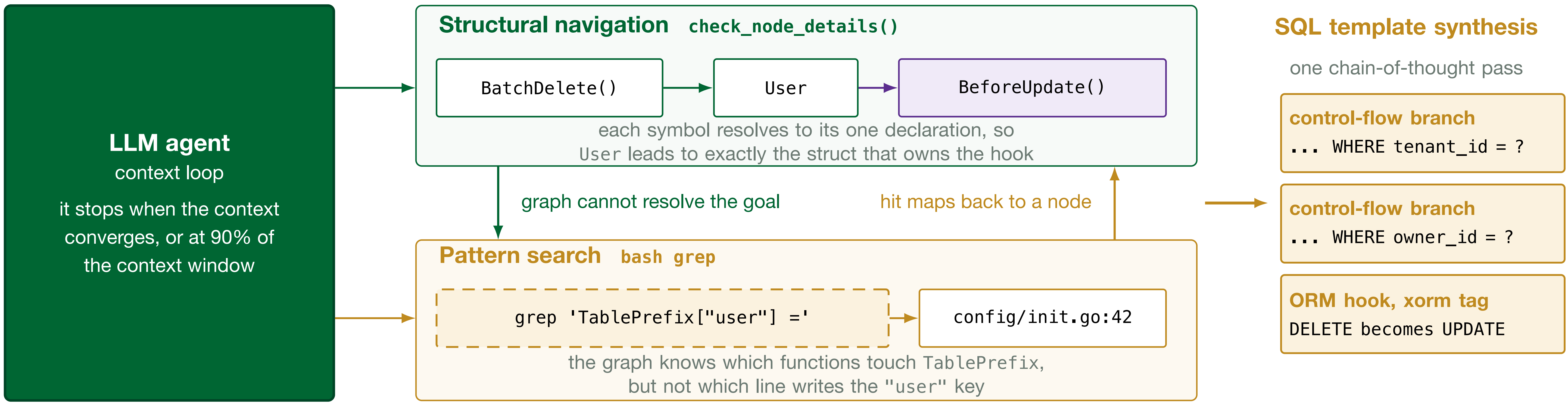


Every call mutates the session from a different file, and the statement materialises only at the terminal call. The lifecycle hook is reached only by reflection, so no call edge records it.

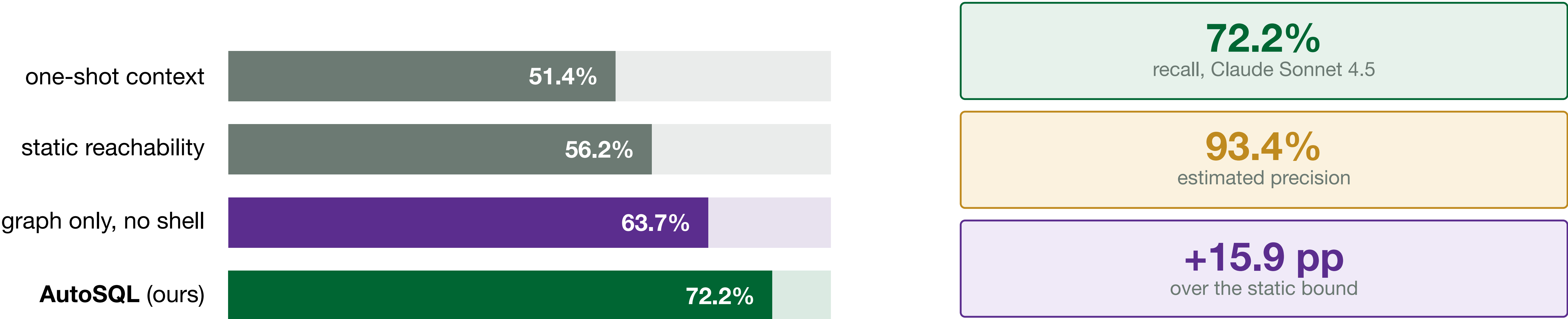
The code index: typed symbols, typed edges



Hybrid context retrieval: the agent's loop



Recall on 1,186 runtime-traced SQL statements



5 Go repositories (Answer, Gitea, Go-Admin, Grafana, Harbor) • 1.43M LOC • 579 entry points • 1,186 runtime-traced statements