Object Query Language (OQL)
- Declarative (like SQL)
- No updates
- Computationally incomplete (like SQL)
- Query result: Any object or value
- Ad-hoc or embedded (like SQL)
- Can invoke methods easily
- All queries “start with” named, top-level database objects
- OQL is a freely composable, functional language

Object identity and equalities
- Can compare referenced objects in 3 ways
- Two referenced objects are identical if both references are the same OID
- Two referenced objects are shallow equal if the referenced objects contain the same values in all value (e.g. scalar) fields and identical references in object fields
- Two referenced objects are deep equal if they contain the same values in all value fields and the objects they reference are also deep equal
- ID → shallow equal → deep equal

OQL: Summary
- SQL-like; declarative and functional
- Freely composable: clean semantics
- No need for having or order by
- forall and exists both available
- Query processing/optimization techniques:
  - Algebras can be defined:
    - Extended relational algebras
    - New algebras
  - Indexes used (O2, for example)
  - QP/Opt. research results slowly making their way into products

State of the Art (Object DB Queries)
- Improving indexing techniques
- Benchmarking
- Support for advanced data types (lists, trees, graphs, images, audio, video, documents,...)
- Algebras and calculi for query processing
- Object storage managers (vs. full DBMS)
- Query languages (SQL3, OQL, others)
- Optimization techniques (cost models, etc.)