

```
chain_of(
  with_elements(load_postgres_table(("public", "patient"), ["id"], [Int32])),
  flatten())
```



The diagram illustrates a complex computational graph, likely representing a neural network architecture or a data processing pipeline. The graph is composed of several interconnected nodes and edges, with a large blue shaded region and a large orange shaded region.

Key Components and Operations:

- load_table("patient", ["id"]) SELECT id FROM patient:** This operation is shown in a green box within the blue shaded region. It is connected to a "head" node (yellow box) and a "1" node (yellow box).
- load_table("patient", ["mn"], ["id"]) SELECT mn FROM patient WHERE id = ?:** This operation is shown in a green box within the blue shaded region. It is connected to a "head" node (yellow box) and a "1" node (yellow box).
- cardinality(x1to1):** This operation is shown in a green box within the orange shaded region. It is connected to a "head" node (yellow box) and a "1" node (yellow box).
- output():** This operation is shown in a green box. It is connected to a "head" node (yellow box) and a "1" node (yellow box).
- column(1):** This operation is shown in a green box. It is connected to a "head" node (yellow box) and a "1" node (yellow box).
- BlockOf x1to1, BlockOf x1toN, EntityShape "patient", TupleOf, Int32, String:** These are the output types or shapes of the operations, shown in various colored boxes (blue, yellow, green, orange) and connected by dotted lines.

The graph shows a complex flow of data and operations, with a large blue shaded region and a large orange shaded region. The right side of the image shows a detailed view of the operations, with nodes like BlockOf, EntityShape, TupleOf, and Int32, connected by dotted lines.







The diagram illustrates the mapping of a query plan to a typed AST. The left side shows the query plan, and the right side shows the typed AST. Dotted arrows indicate the mapping between the two.

Query Plan (Left):

- flatten()** (green box) maps to **BlockOf x0toN** (teal oval).
- column(1)** (green box) maps to **BlockOf x0toN** (teal oval).
- output()** (green box) maps to **BlockOf x0toN** (teal oval).
- cardinality(x1to1)** (green box) maps to **BlockOf x1to1** (teal oval).
- load_table("patient", ["id"]) SELECT id FROM patient** (green box) maps to **BlockOf x0toN** (teal oval).
- load_table("patient", ["min", "id"]) SELECT min FROM patient WHERE id = ?** (green box) maps to **BlockOf x0toN** (teal oval).
- head** (yellow box) maps to **EntityShape "patient"** (teal oval).
- 1** (yellow box) maps to **TupleOf** (teal oval).

Typed AST (Right):

- BlockOf x1to1** (teal oval) maps to **EntityShape DATABASE** (teal oval).
- BlockOf x0toN** (teal oval) maps to **TupleOf** (teal oval).
- EntityShape "patient"** (teal oval) maps to **TupleOf** (teal oval).
- TupleOf** (teal oval) maps to **Int32** (grey oval).
- BlockOf x0toN** (teal oval) maps to **EntityShape "patient"** (teal oval).
- EntityShape "patient"** (teal oval) maps to **TupleOf** (teal oval).
- TupleOf** (teal oval) maps to **Int32** (grey oval).
- BlockOf x0toN** (teal oval) maps to **EntityShape "patient"** (teal oval).
- EntityShape "patient"** (teal oval) maps to **TupleOf** (teal oval).
- TupleOf** (teal oval) maps to **String** (grey oval).
- BlockOf x0toN** (teal oval) maps to **BlockOf x1to1** (teal oval).
- BlockOf x1to1** (teal oval) maps to **BlockOf x0toN** (teal oval).
- BlockOf x0toN** (teal oval) maps to **BlockOf x0toN** (teal oval).
- BlockOf x1to1** (teal oval) maps to **BlockOf x0toN** (teal oval).
- BlockOf x0toN** (teal oval) maps to **BlockOf x0toN** (teal oval).
- EntityShape "patient"** (teal oval) maps to **EntityShape "patient"** (teal oval).
- TupleOf** (teal oval) maps to **String** (grey oval).
- TupleOf** (teal oval) maps to **String** (grey oval).
- TupleOf** (teal oval) maps to **String** (grey oval).
- BlockOf x0toN** (teal oval) maps to **String** (grey oval).













