

# Relationship Bundling



## Relationship Bundling



So far we've been writing queries from the perspective of an air travel enthusiast.

In this section we're going to evolve the model based on the needs of a frequent traveller who wants to find flights on a specific date.



# What are we going to do?



- Write a query to book a flight on a specific day
- Profile our flight booking query
- Optimise our model to deal with this query



## Find a flight to book

**As a** frequent traveller  
**I want** to find flights from <origin> to  
<destination> on <date>  
**So that** I can book my business flight

# Start playing the next guide....



...if you aren't playing it already

▶ Flight booking

:play [http://guides.neo4j.com/modeling\\_airports/03\\_flight\\_booking.html](http://guides.neo4j.com/modeling_airports/03_flight_booking.html)



# Bundling flight relationships



## Bundling flight relationships by airport day



Searching for flights by day is a bit problematic. We have to scan every relationship between origin and destination airports and analyse properties on each flight to work out which ones we're interested in.

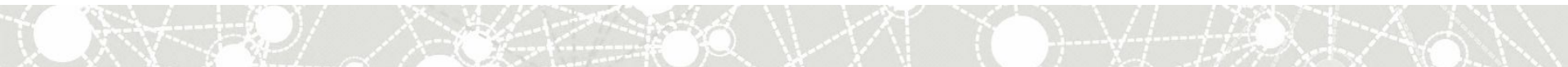


## Bundling flight relationships by airport day



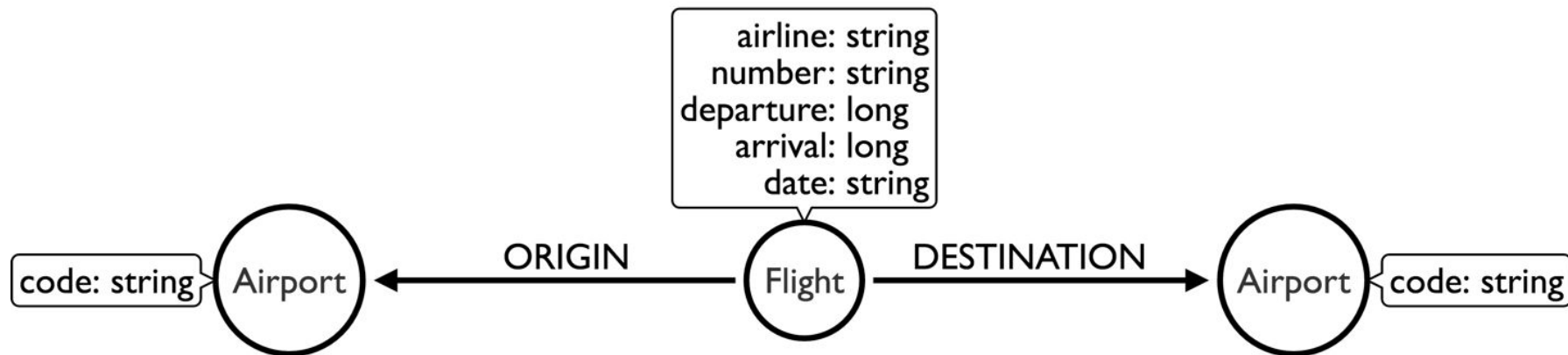
Searching for flights by day is a bit problematic. We have to scan every relationship between origin and destination airports and analyse properties on each flight to work out which ones we're interested in.

We can reduce this problem by bundling flights together by  
**AirportDay**

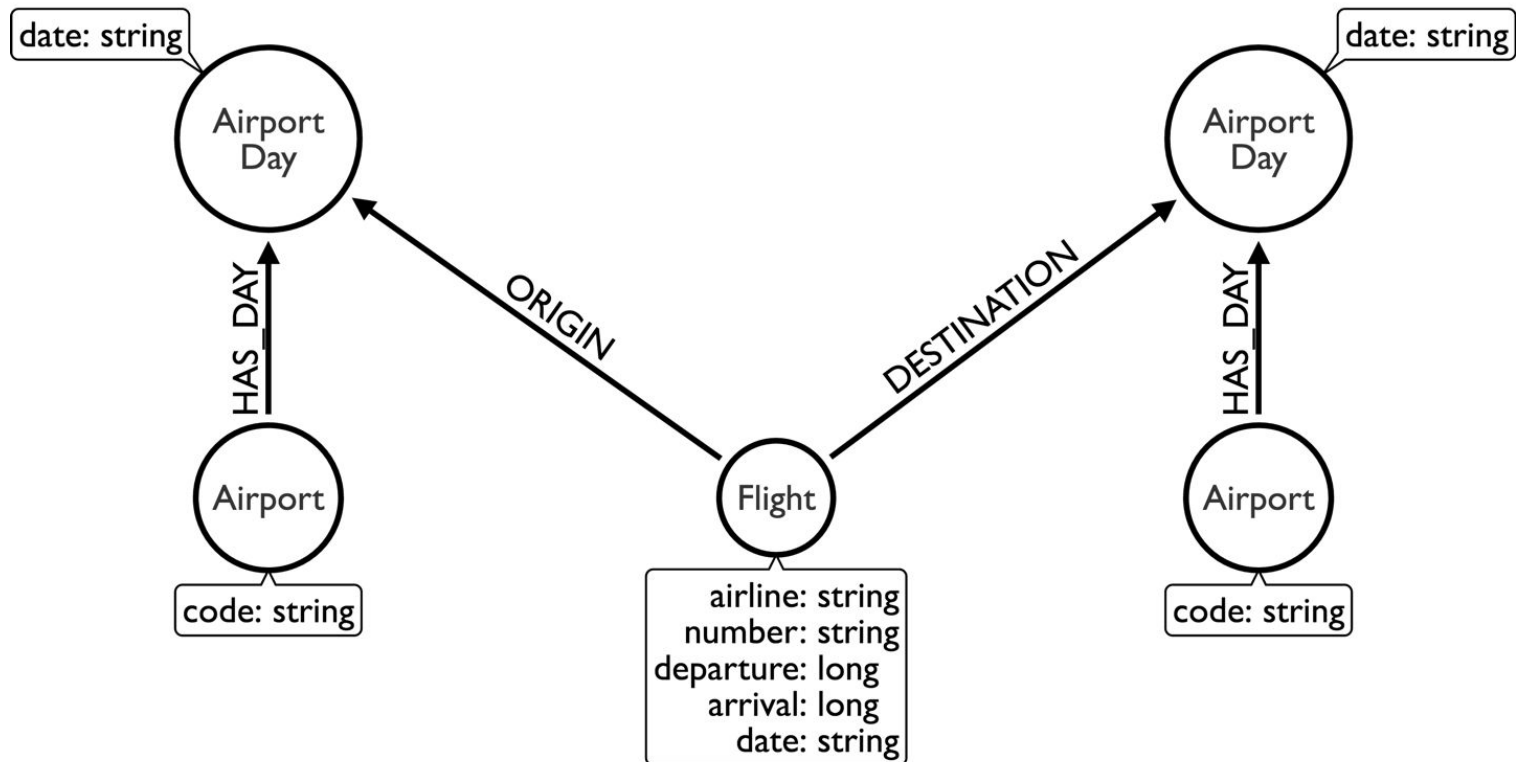




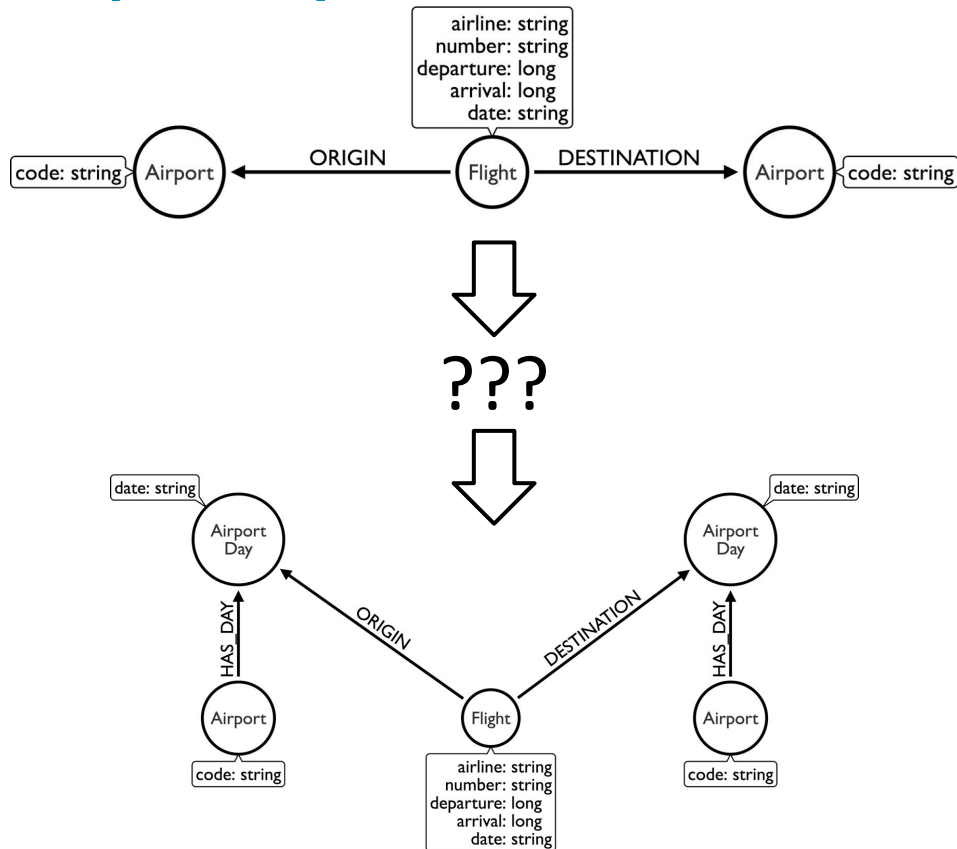
## Our current model



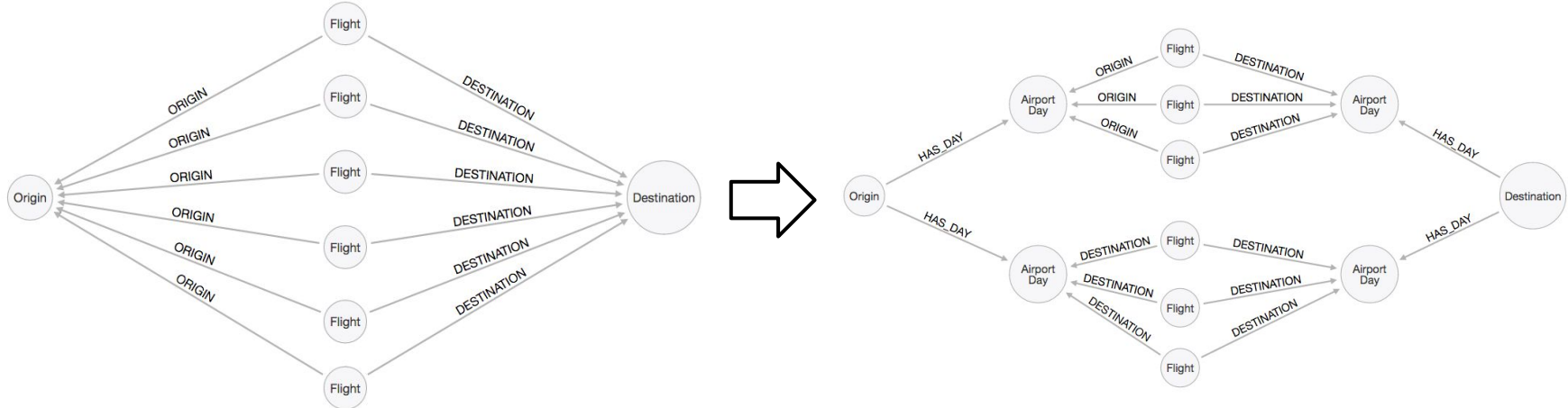
# Introducing AirportDay



# Refactoring to Airport Day



# Bundling flight relationships by airport day



## Refactoring: Derive node from property



This refactoring creates a new node using the property of an existing node.  
We currently have this pattern:

```
(origin)<-[:ORIGIN]-(flight)-[:DESTINATION]->(destination)
```

And we'll create a new node using the date property of the flight node:

```
(origin)-[:HAS_DAY]->(originAirportDay)<-[:ORIGIN]-(flight),  
(destination)-[:HAS_DAY]->(destAirportDay)<-[:DESTINATION]-(flight)
```

# Let's get on with the refactoring



Over to you!



# End of Module Bundling Relationships

Questions?

