

# Implementing Paging, Filtering, and Searching

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# Coming Up

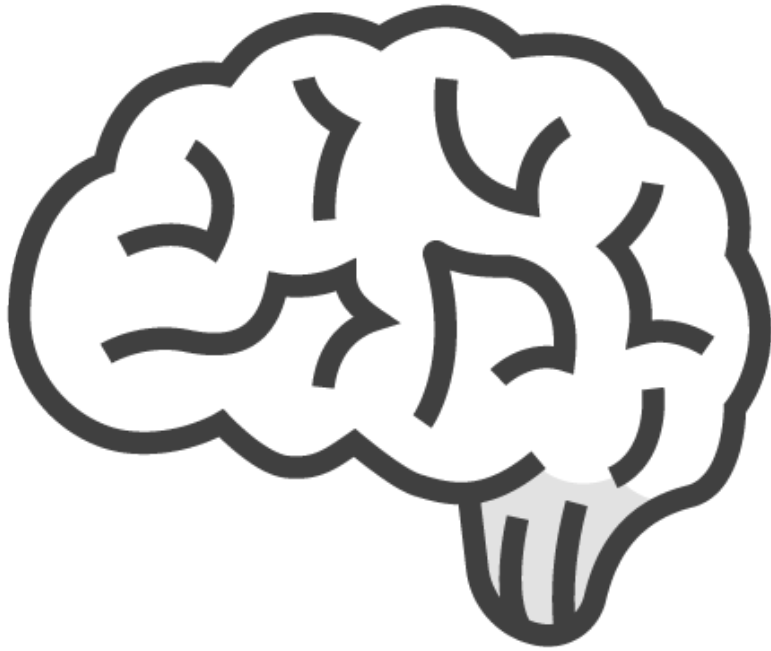


**Paging through collection resources**

**Filtering and searching through  
collection resources**



# Paging Through Collection Resources



Paging helps avoid performance issues

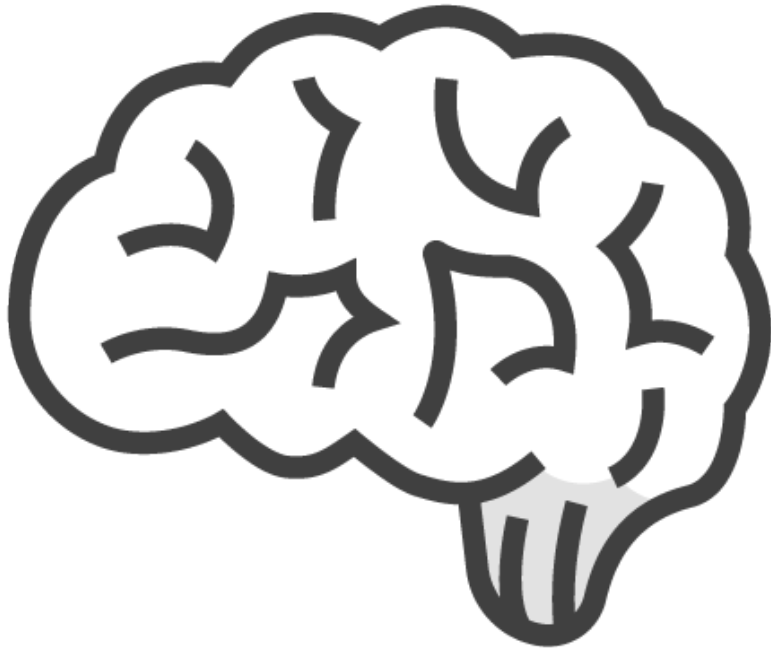
Parameters are passed through via the query string

- <http://host/api/authors?pageNumber=1&pageSize=5>

Page size should be limited

Page by default

# The Principle of Deferred Execution



**A query variable stores query commands**

**Execution is deferred until the query is iterated over**

**IQueryable<T>: creates an expression tree**

**Iteration:**

- foreach loop
- ToList(), ToArray(), ToDictionary()
- Singleton queries

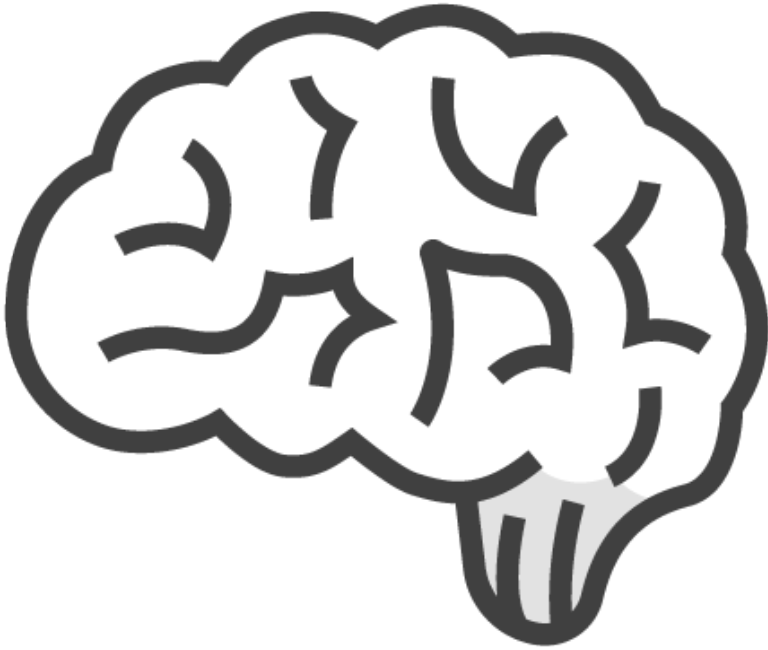
# Demo



## Paging Through Collection Resources (Part 1)



# Returning Pagination Metadata



Should at least include links to the previous and next pages

Can include additional information: total count, amount of pages, ...



```
{  
  "results": [ {author}, {author}, ...],  
  "metadata": { "previousPage" : "/api/...", ...}  
}
```

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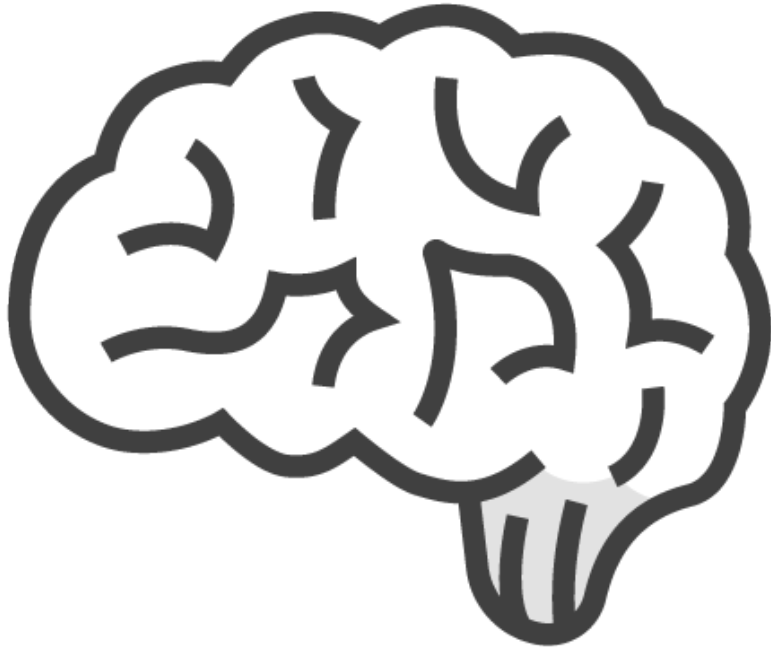
## Pagination Metadata

**Response body no longer matches the Accept header: this isn't application/json, it's a new media type**

**Breaks the self-descriptive message constraint: the consumer does not know how to interpret the response with content-type application/json**



# Returning Pagination Metadata



**When requesting application/json, paging metadata isn't part of the resource representation**

**Use a custom header, like X-Pagination**





# Demo



## Paging Through Collection Resources (Part 2)



# Filtering and Searching

## Filtering

Limits the collection resource, taking into account a predicate

<http://host/api/authors?genre=Fantasy>

Filter on fields of the resource, not on fields of lower-level layer objects

## Searching

Limits the collection resource by passing a search predicate

<http://host/api/authors?searchQuery=King>



# Demo



## Filtering Collection Resources



# Demo



## Searching Through Collection Resources



# Summary



## Paging

- pageSize and pageNumber
- Limit pageSize
- Page by default
- Metadata belongs in a custom header

## Filtering

- Pass field name & predicate



# Summary



## Searching

- Pass string to search for, API is responsible for the implementation

