

With query cursors in Cloud Firestore, you can split data returned by a query into batches according to the parameters you define in your query.

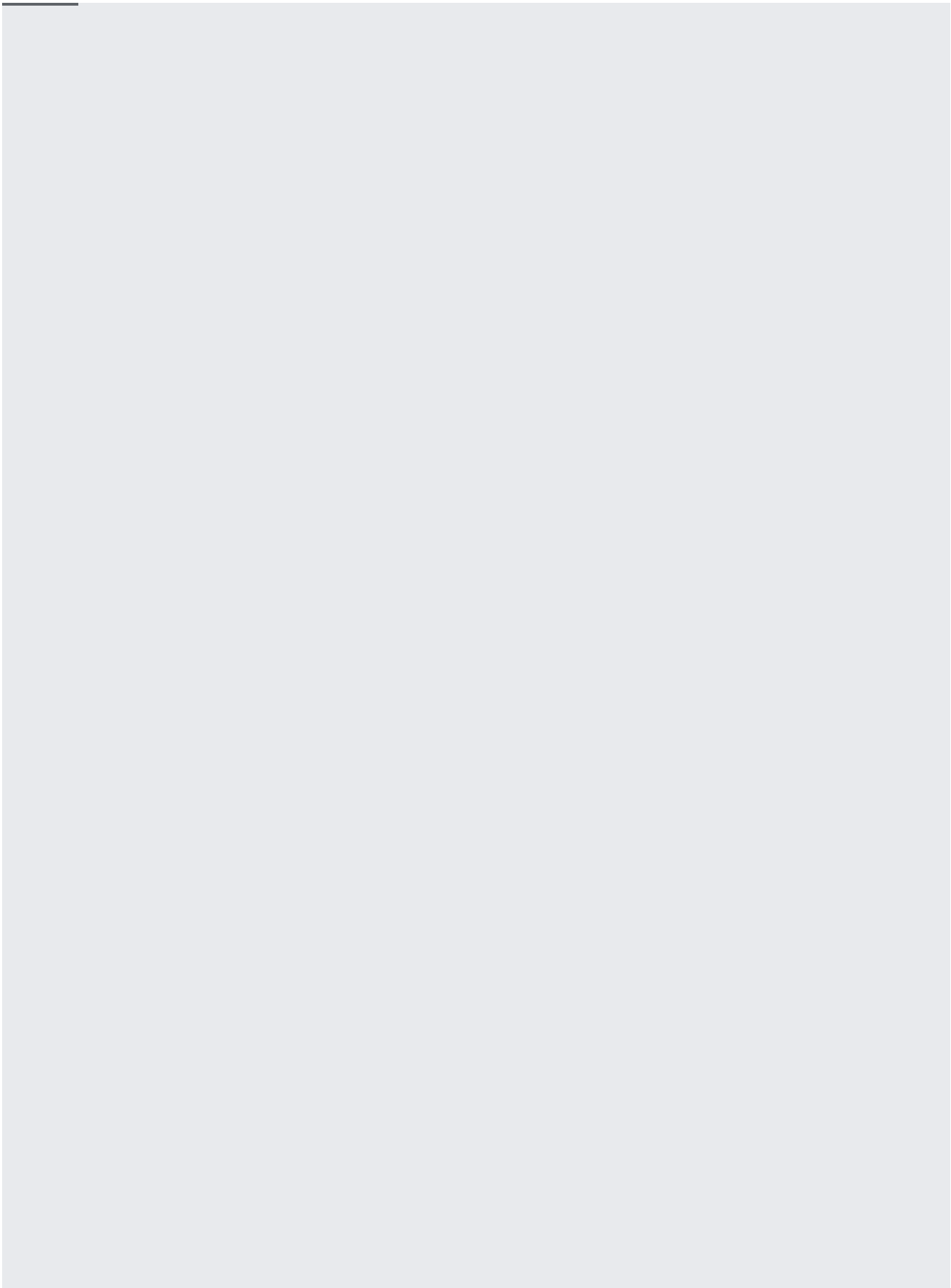
Query cursors define the start and end points for a query, allowing you to:

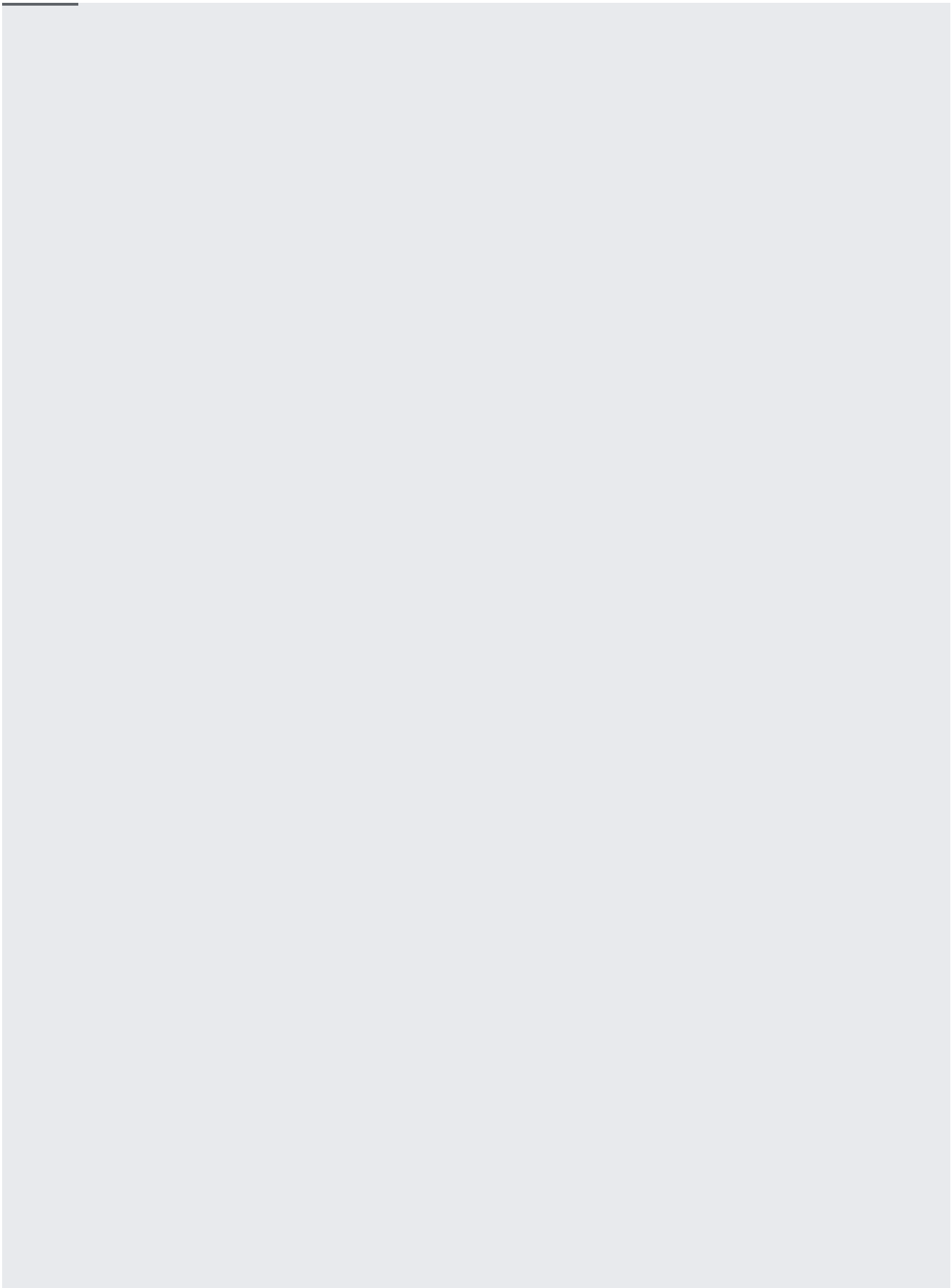
- Return a subset of the data.
- Paginate query results.

However, to define a specific range for a query, you should use the `where()` method described in [Simple Queries](/firestore/docs/query-data/queries#simple_queries) (/firestore/docs/query-data/queries#simple\_queries).

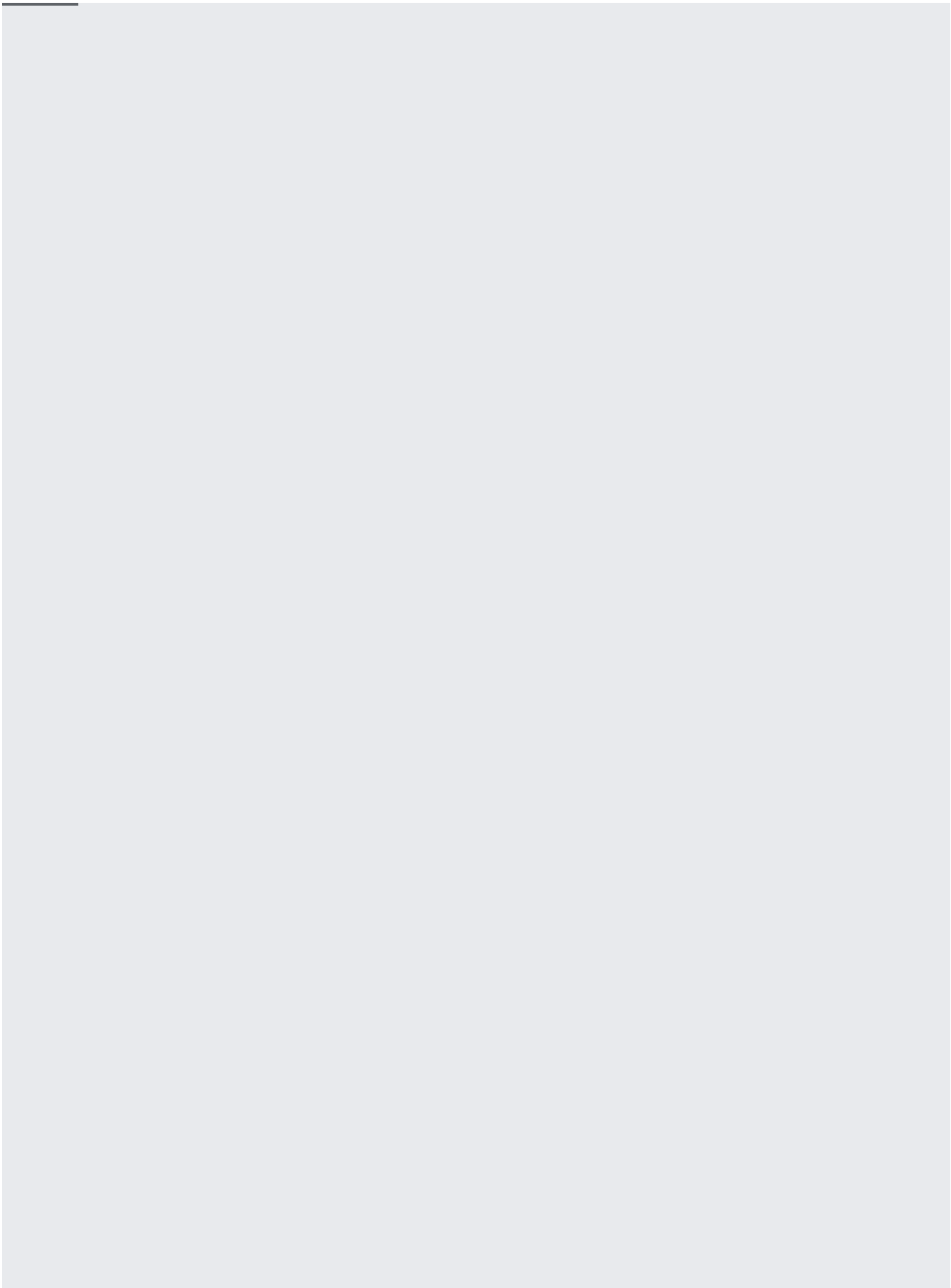
Use the `startAt()` or `startAfter()` methods to define the start point for a query. The `startAt()` method includes the start point, while the `startAfter()` method excludes it.

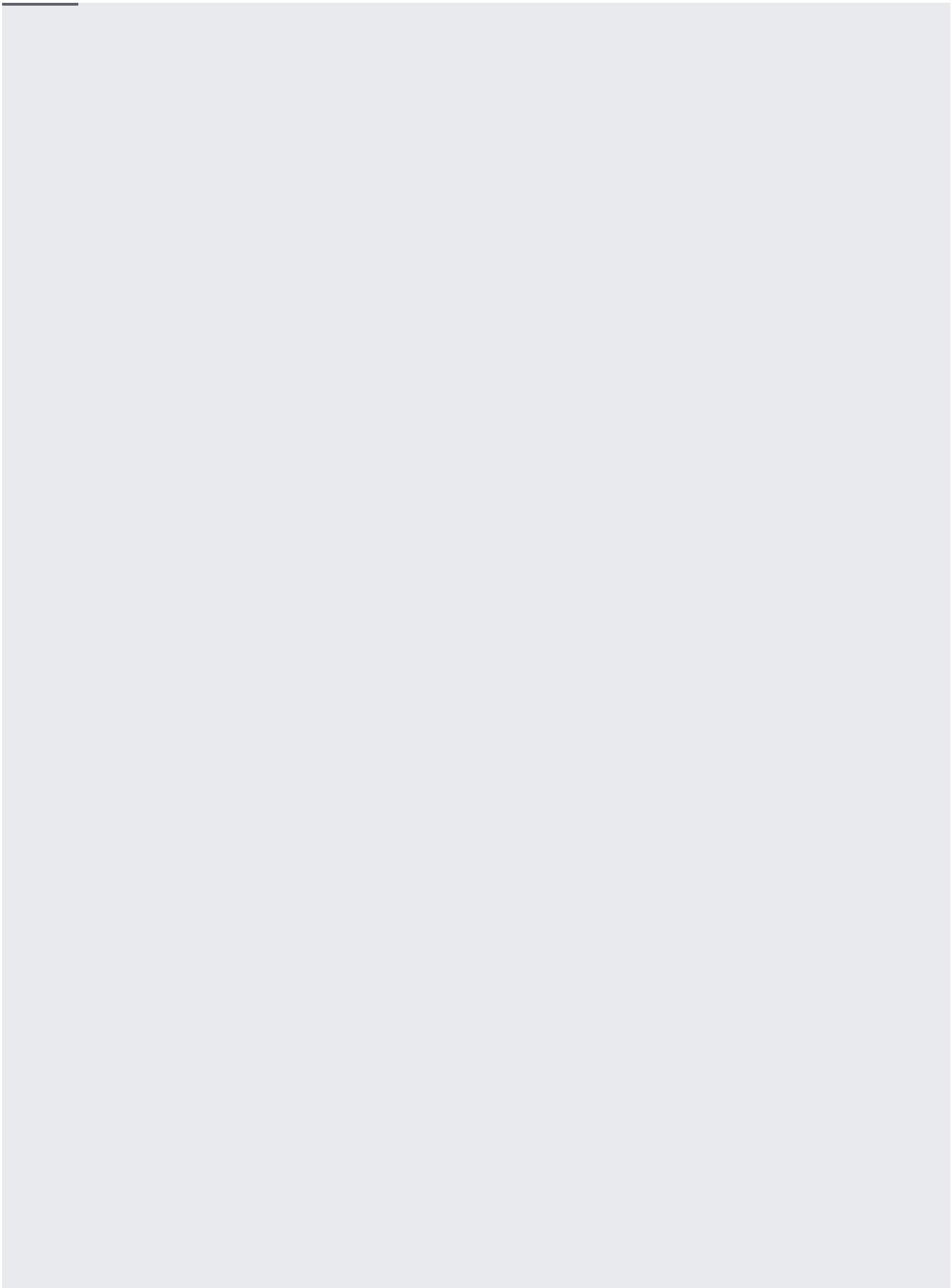
For example, if you use `startAt(A)` in a query, it returns the entire alphabet. If you use `startAfter(A)` instead, it returns B-Z.

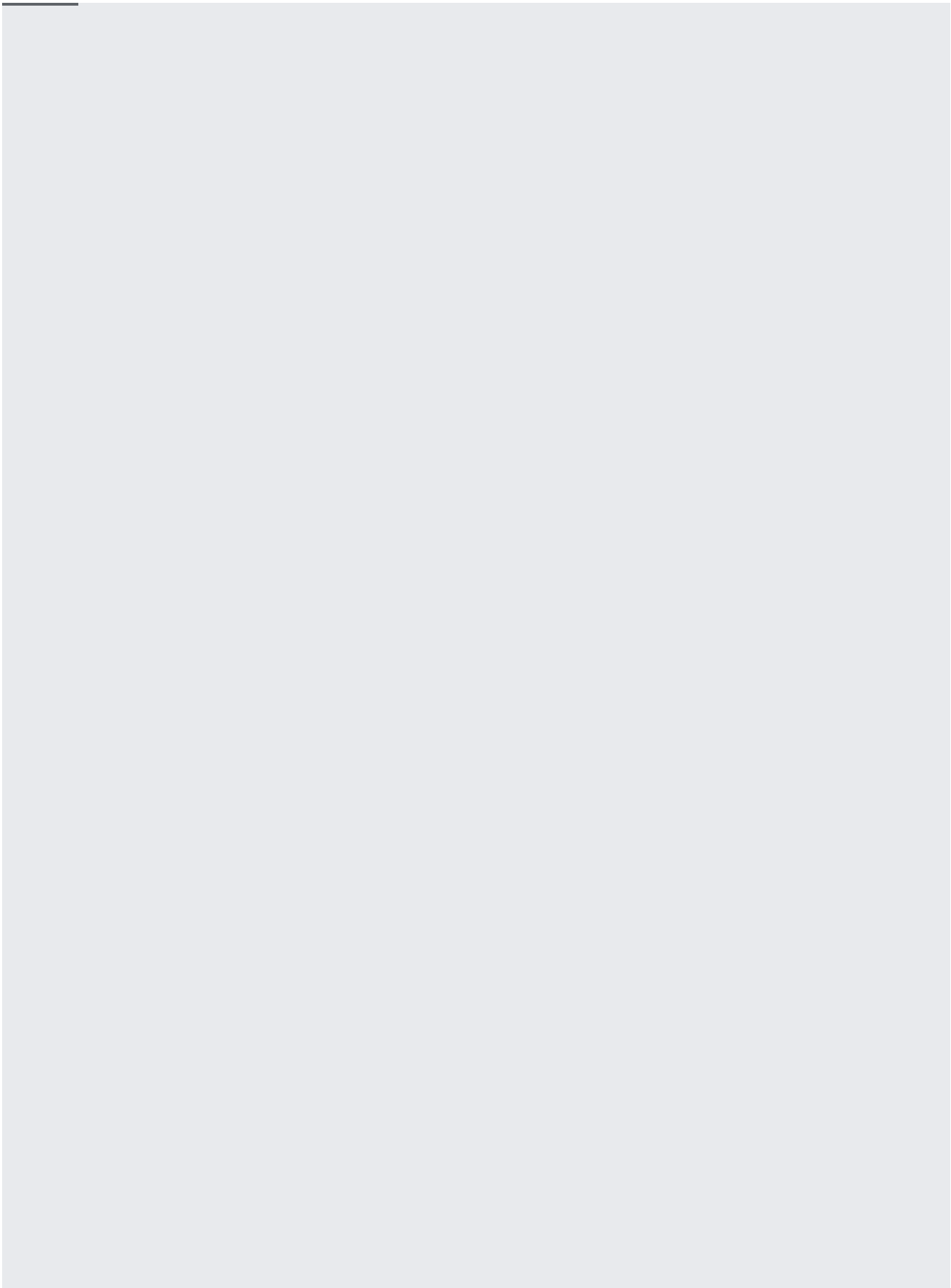




Similarly, use the `endAt()` or `endBefore()` methods to define an end point for your query results.



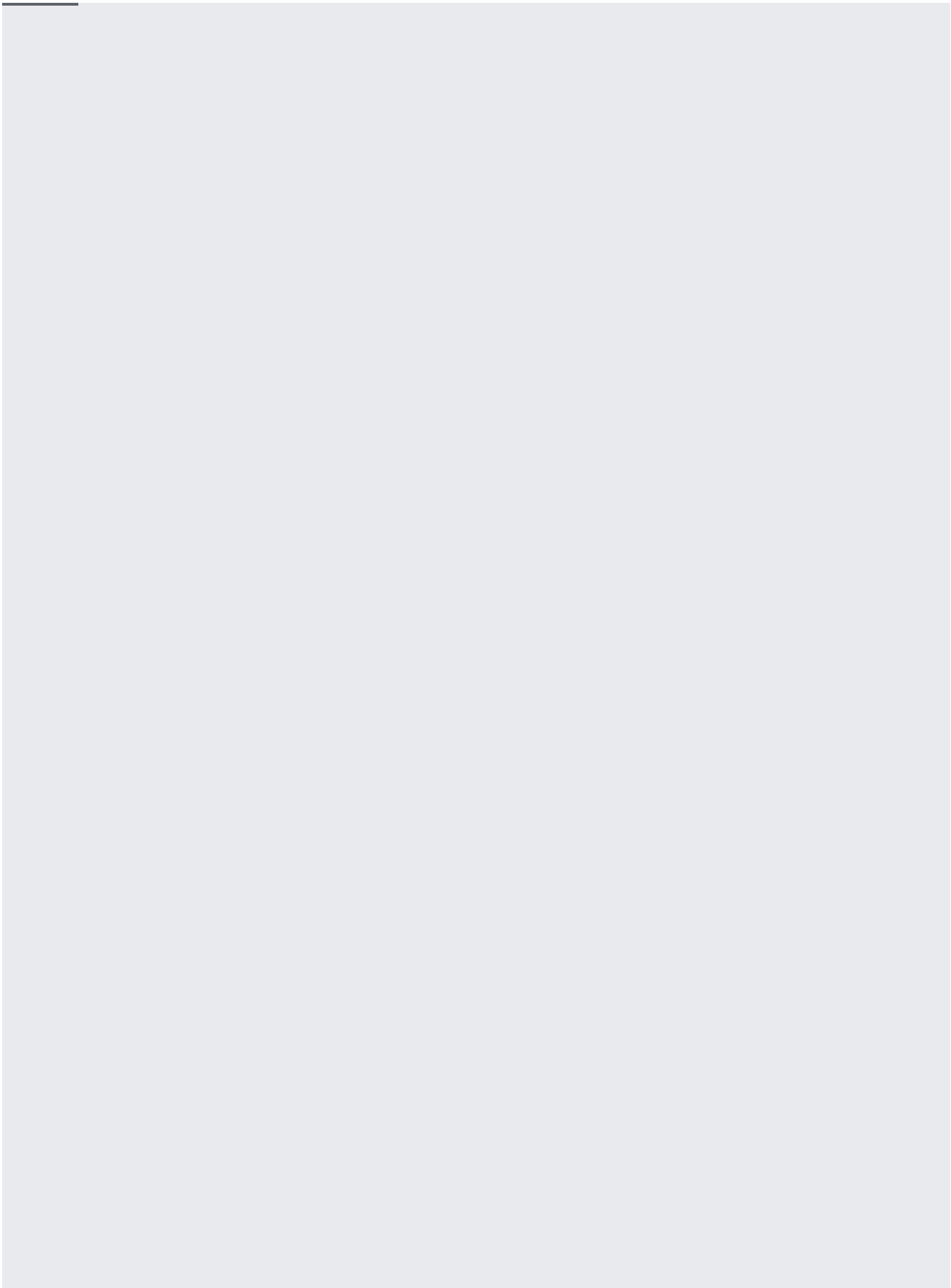


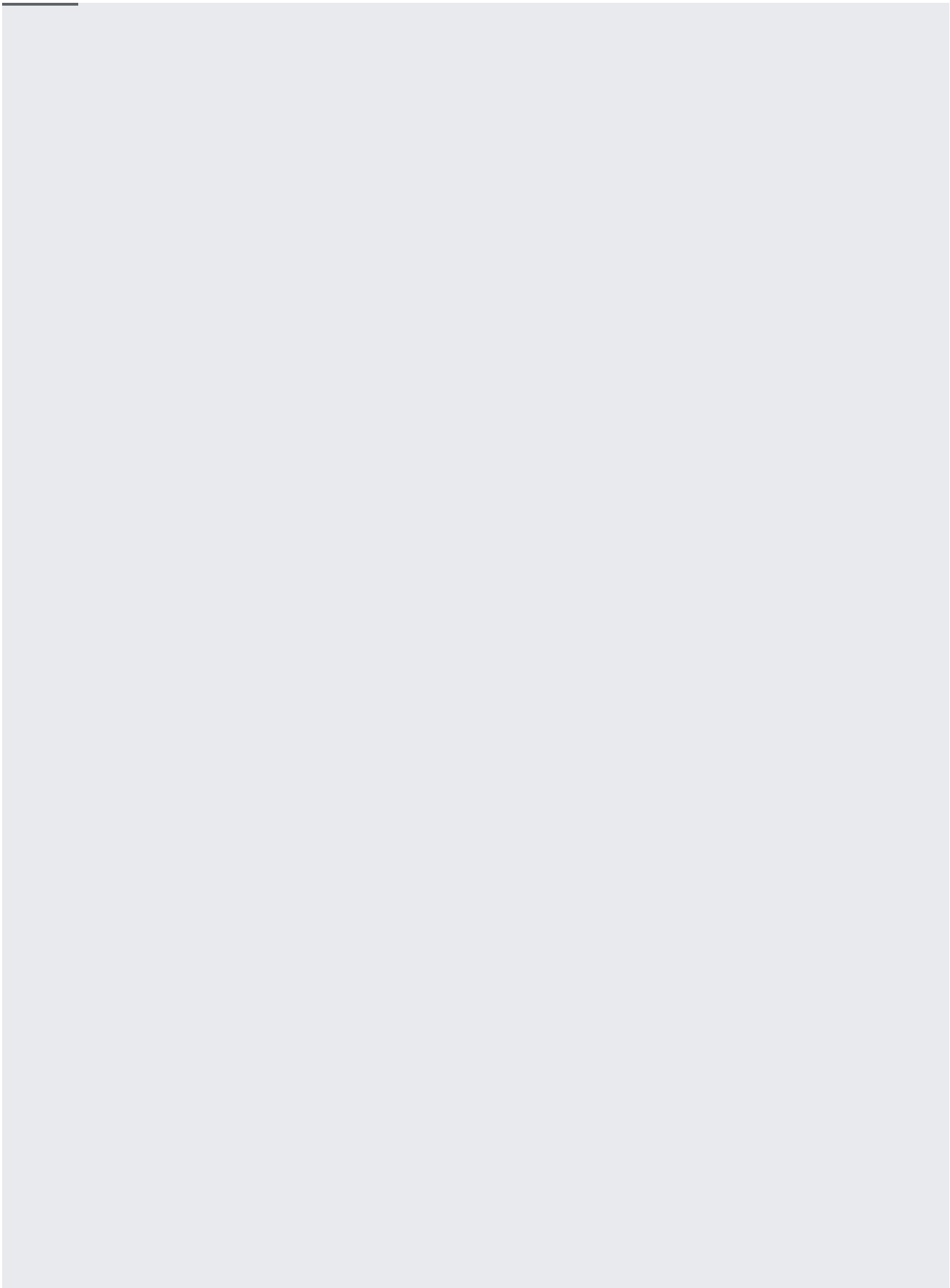


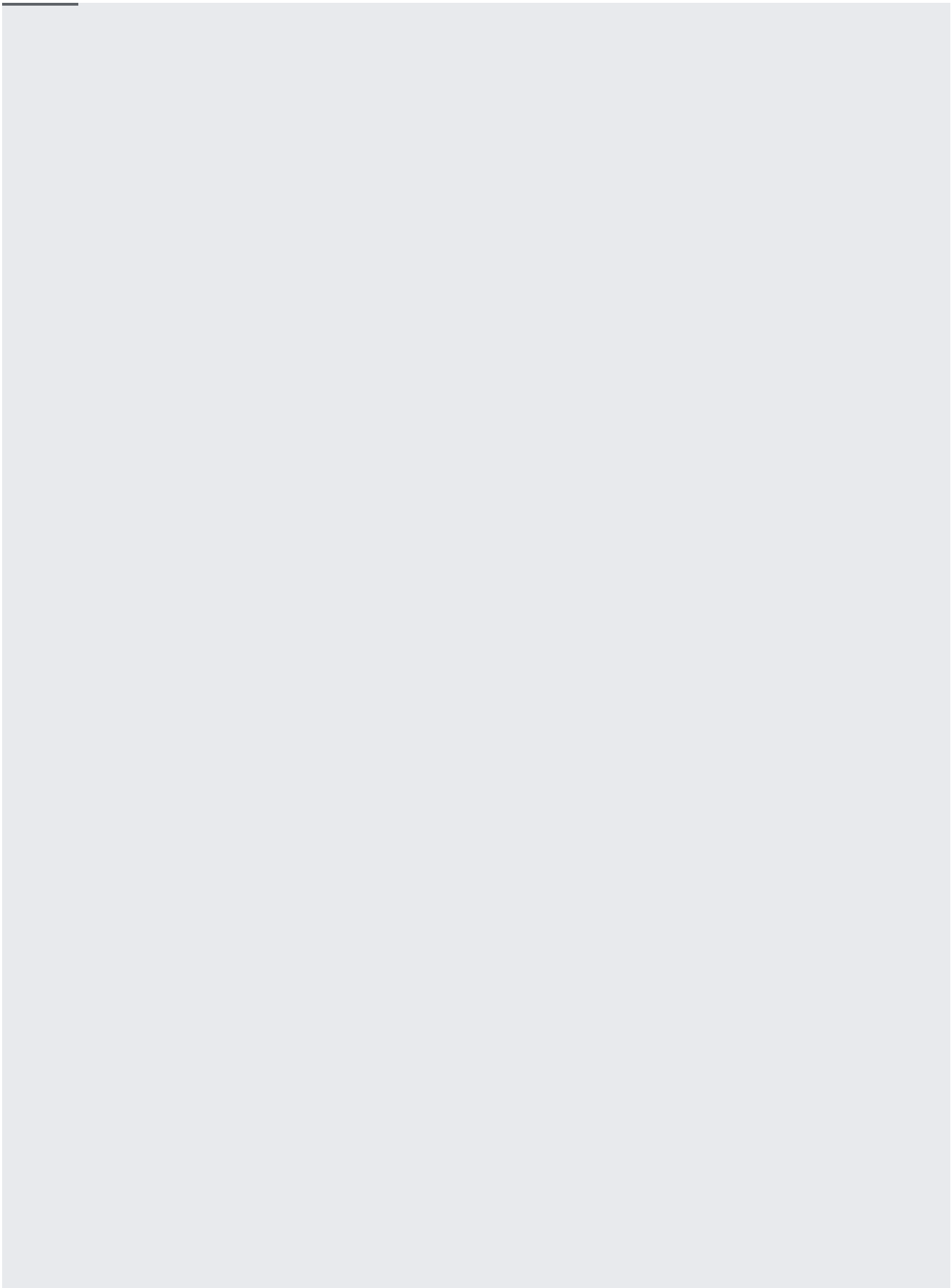
You can also pass a document snapshot to the cursor clause as the start or end point of the query cursor. The values in the document snapshot serve as the values in the query cursor.

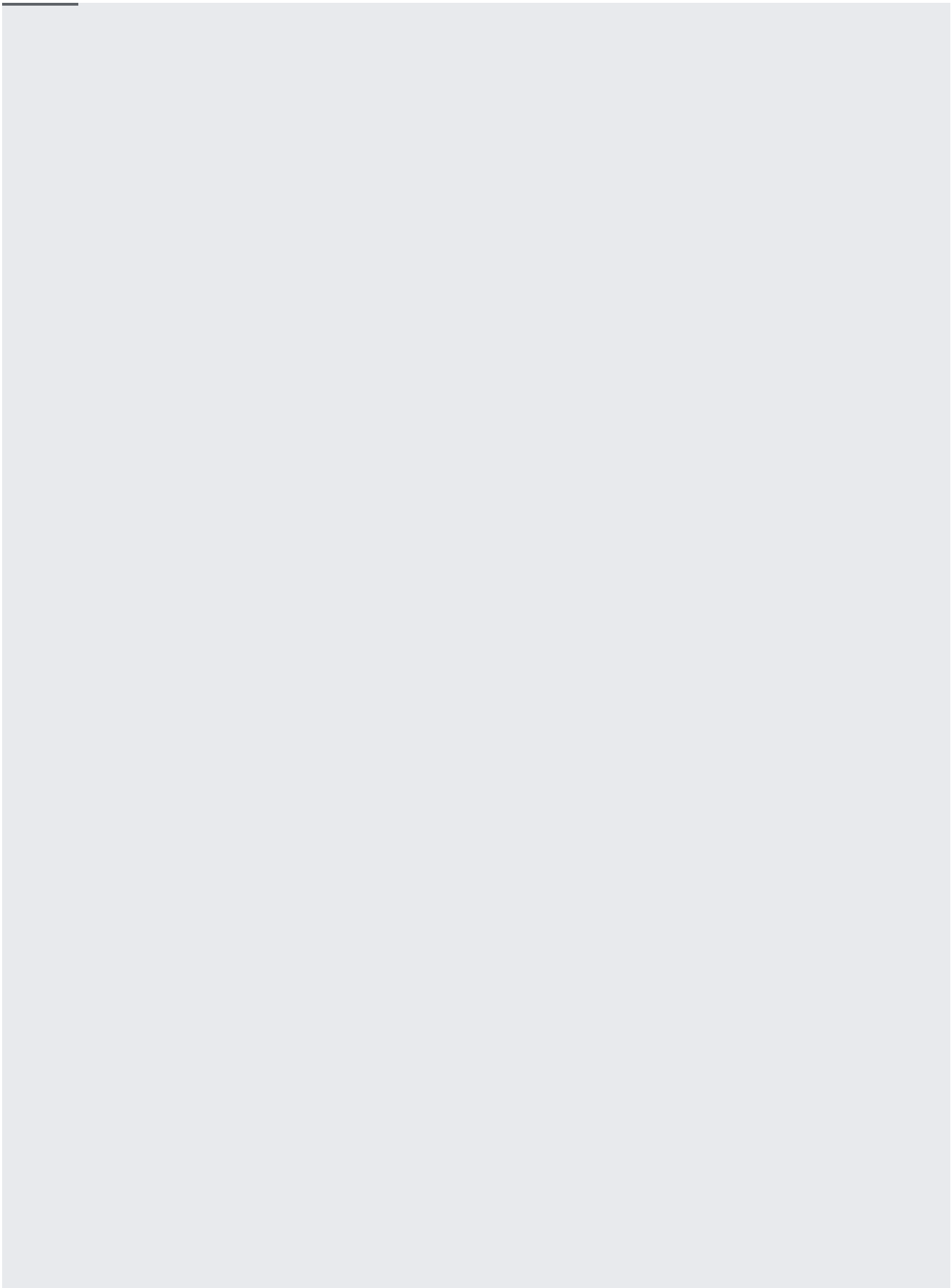
For example, take a snapshot of a "San Francisco" document in your data set of cities and populations. Then, use that document snapshot as the start point for your population query cursor. Your query will return all the cities with a population larger than or equal to San Francisco's, as defined in the document snapshot.



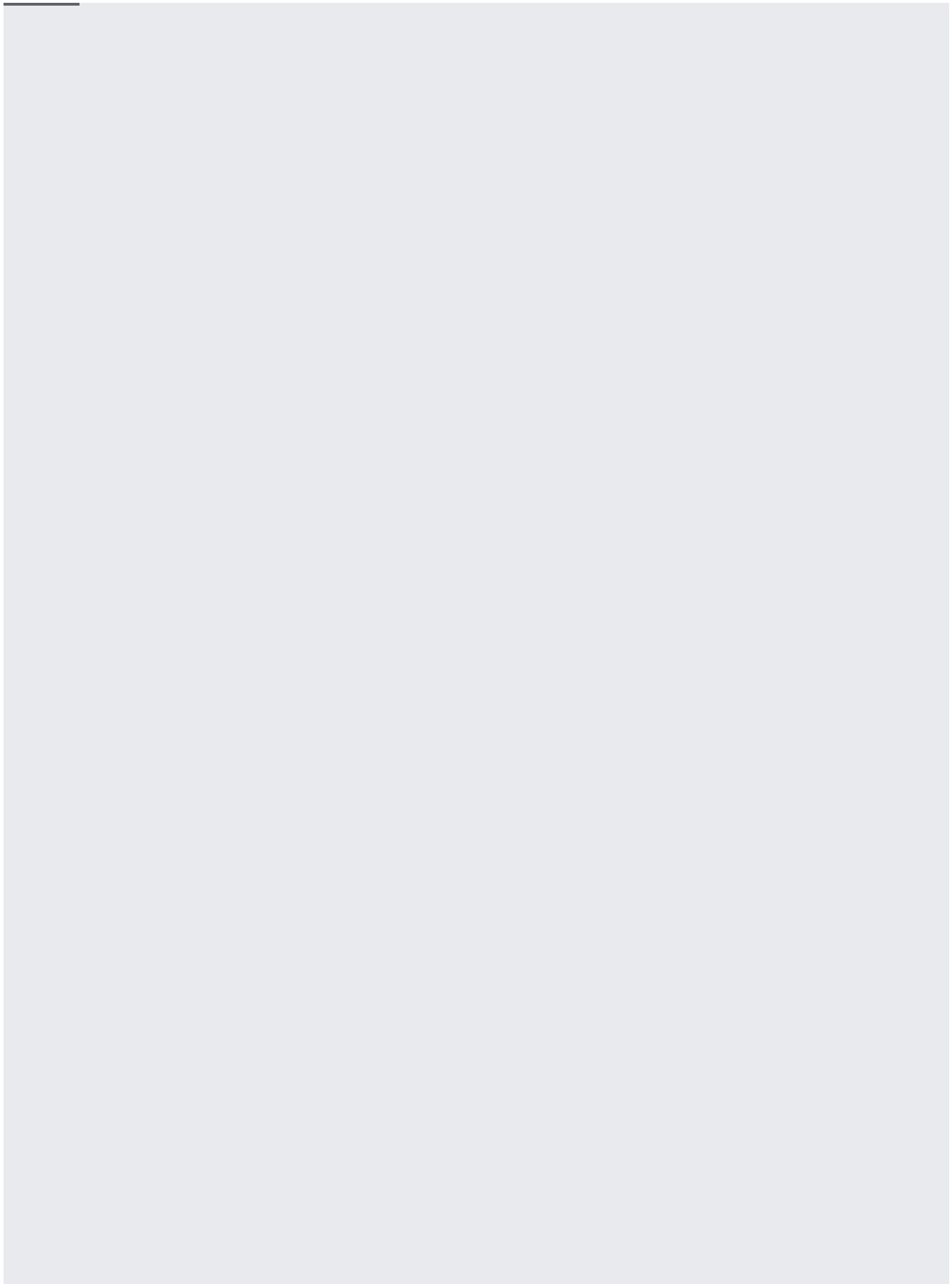


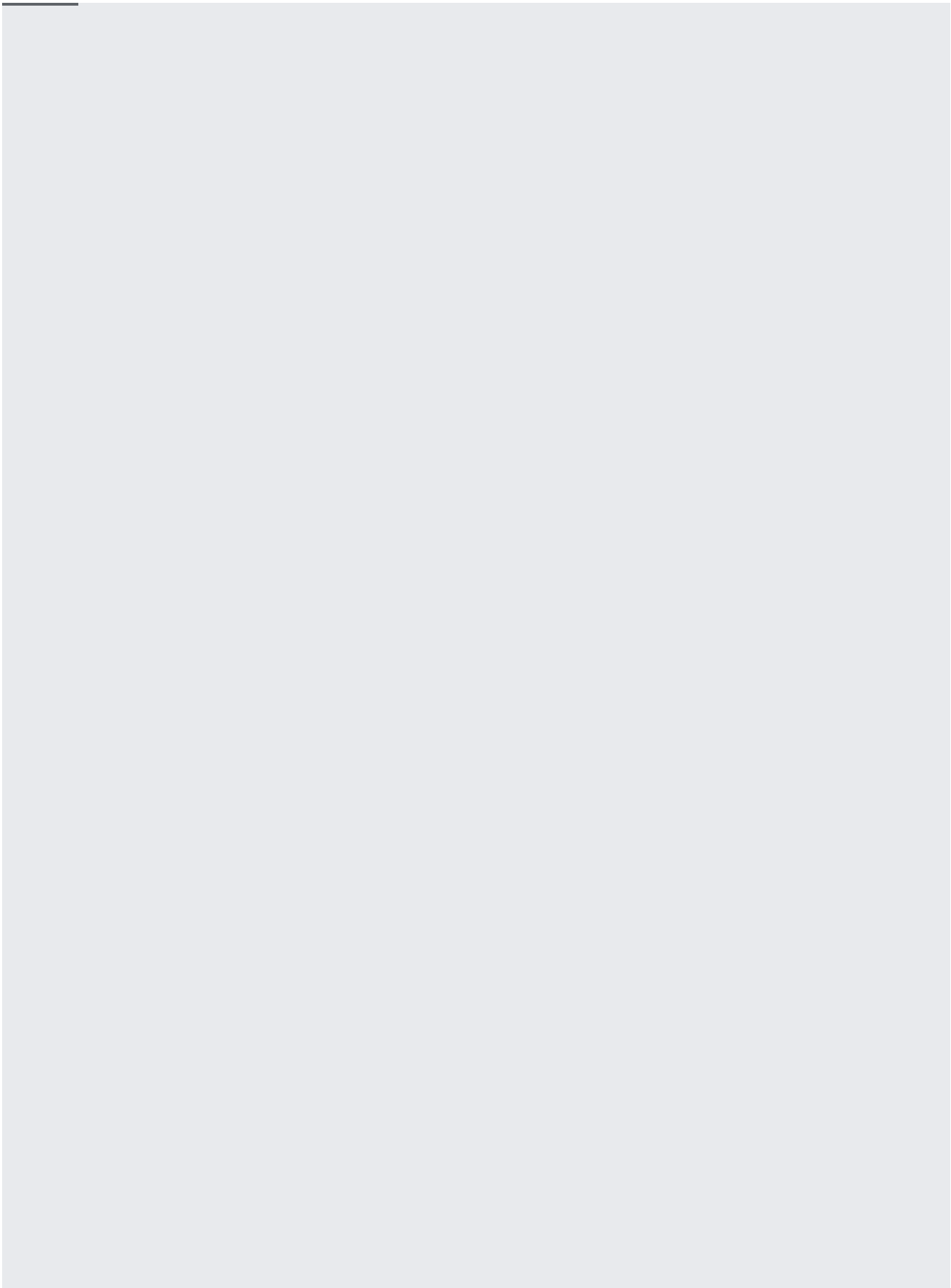


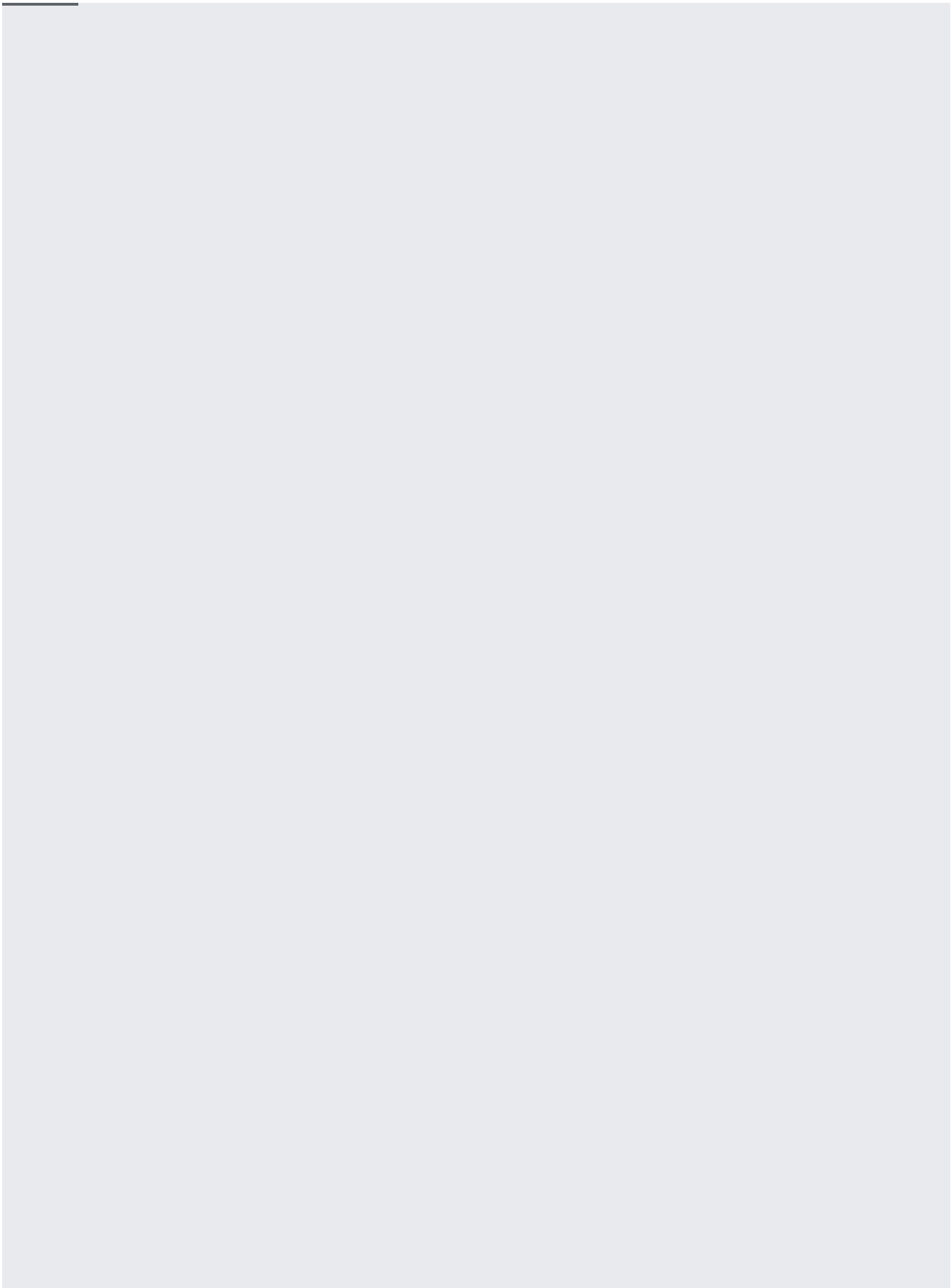




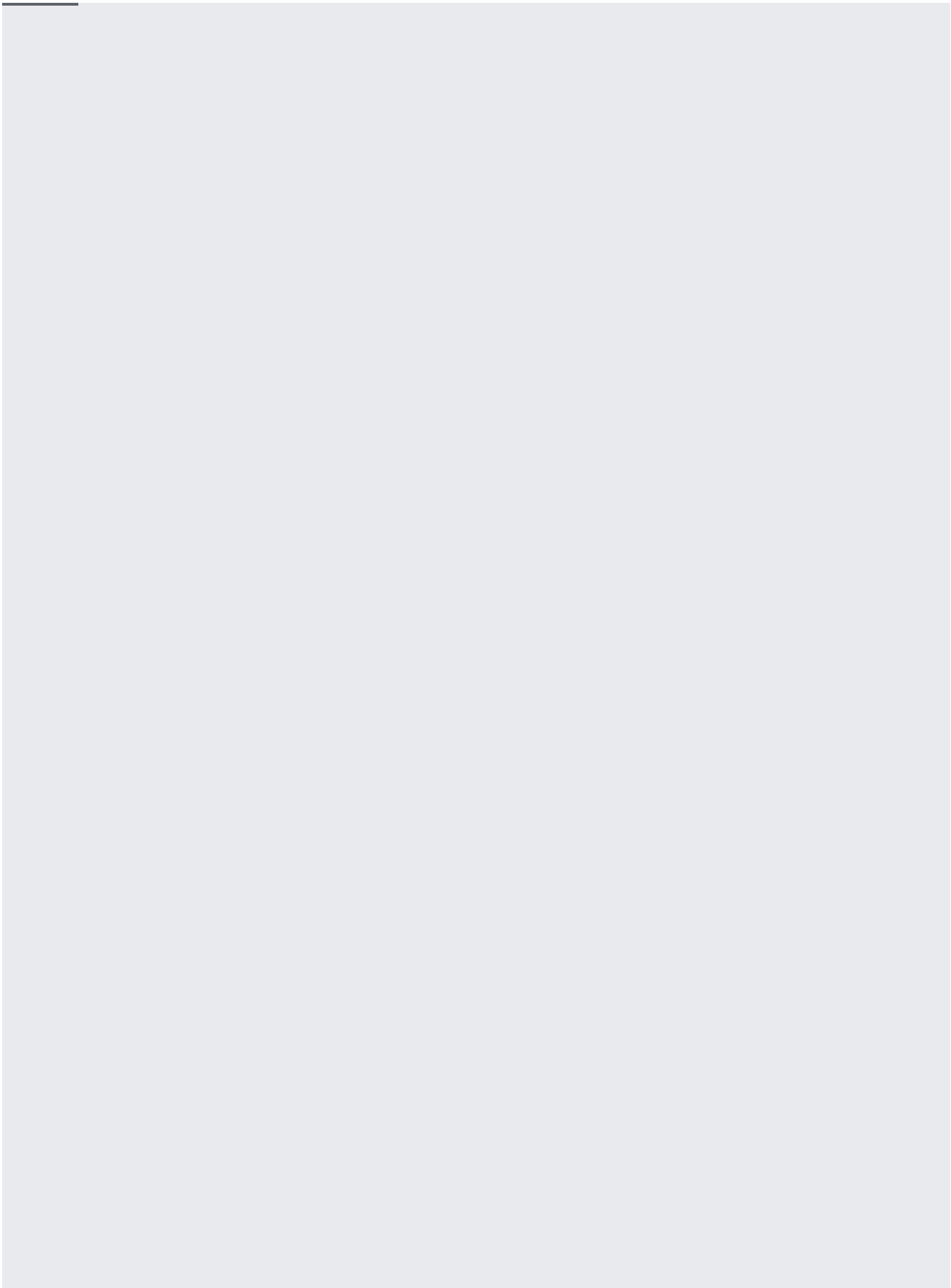
Paginate queries by combining query cursors with the `limit()` method. For example, use the last document in a batch as the start of a cursor for the next batch.

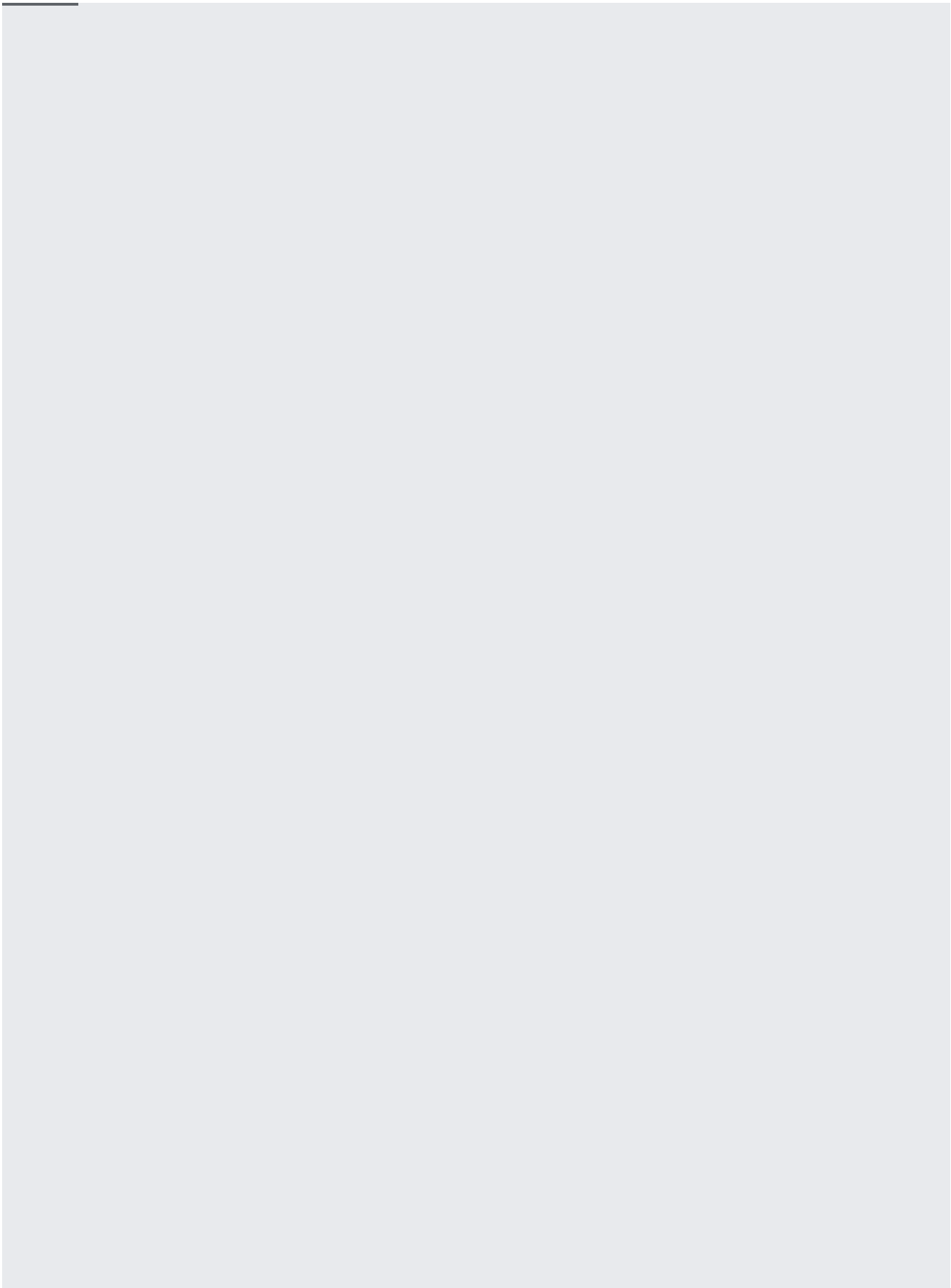


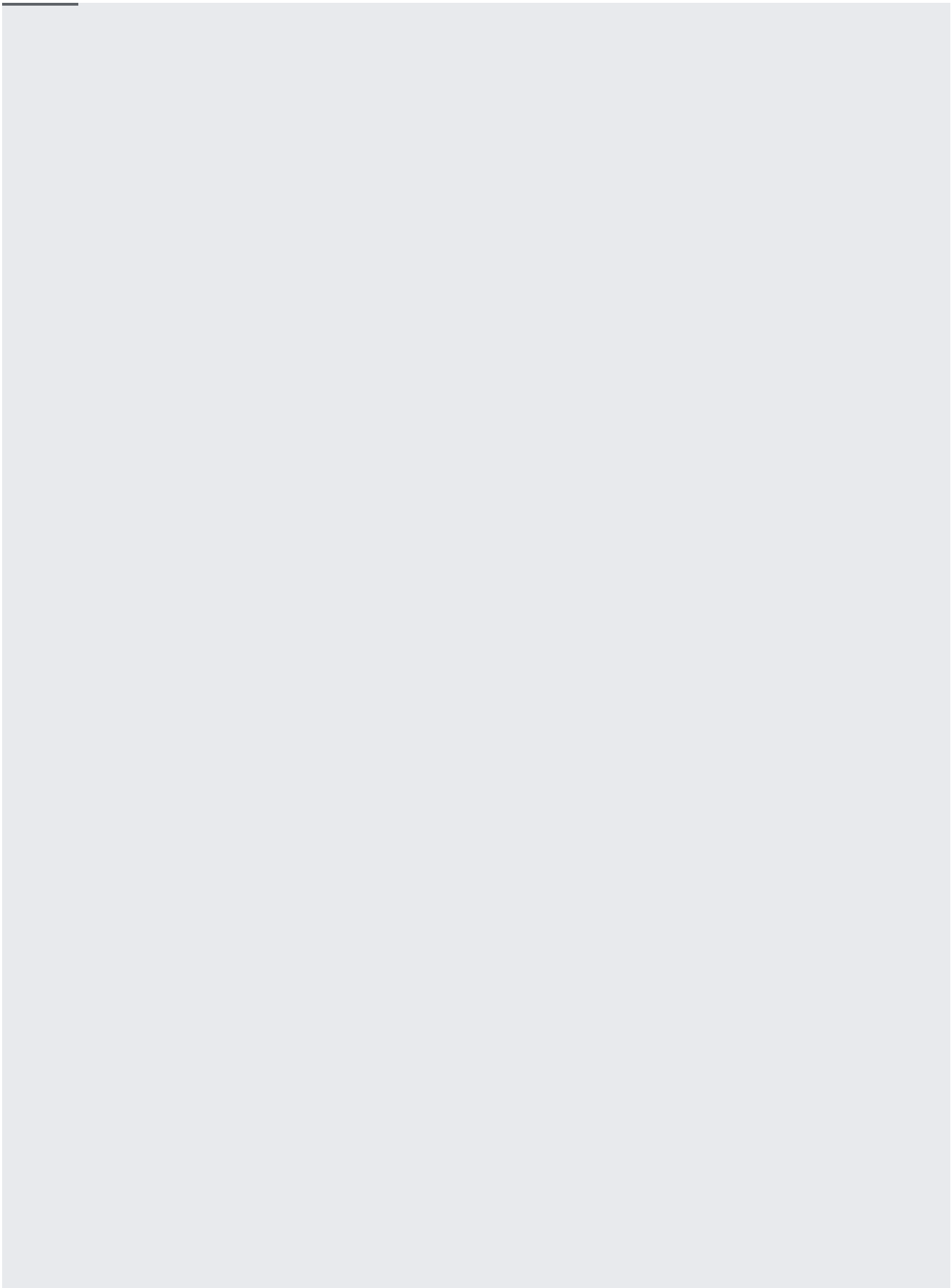


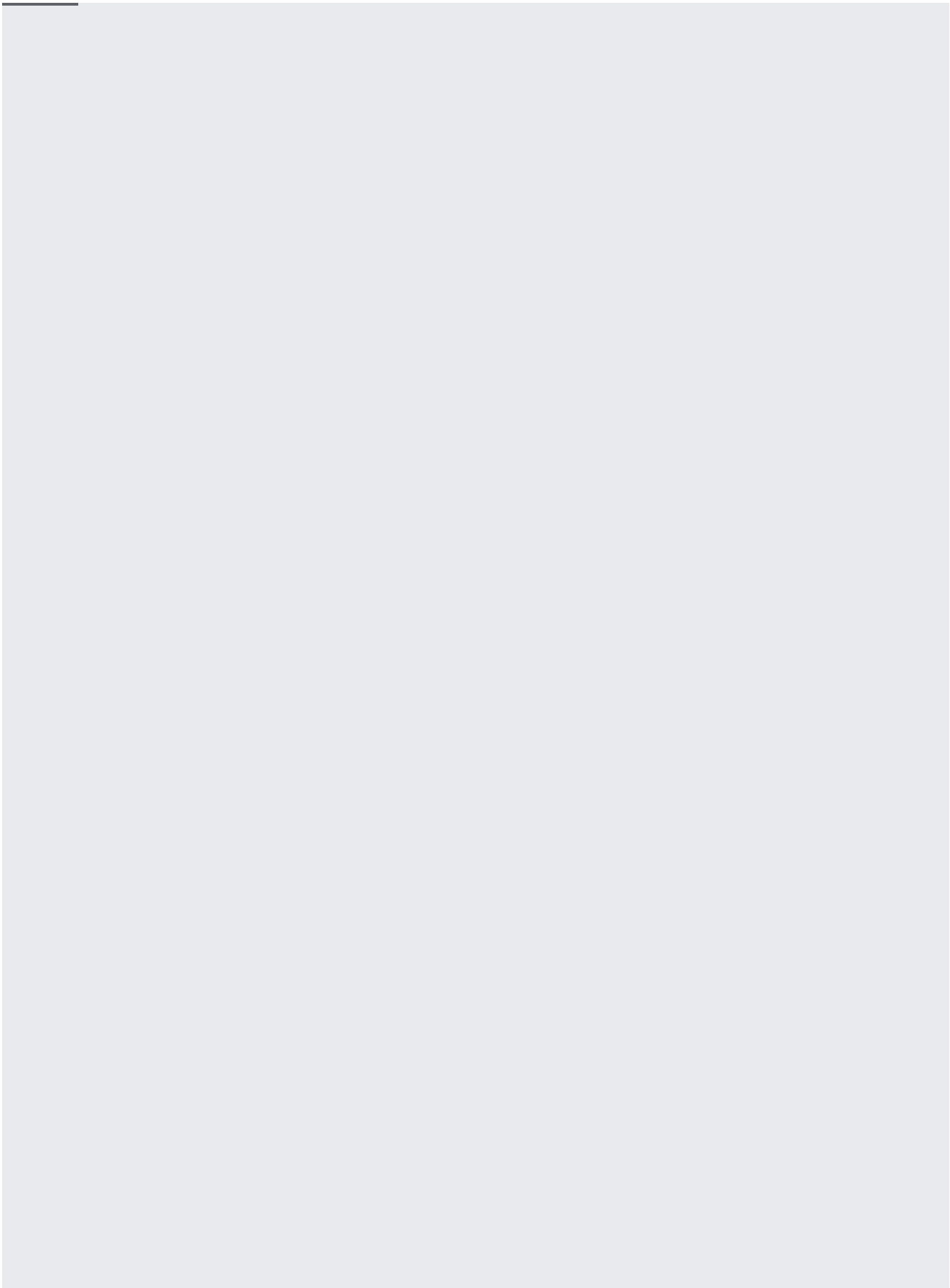












When using a cursor based on a field value (not a DocumentSnapshot), you can make the cursor position more precise by adding additional fields. This is particularly useful if your data set includes multiple documents that all have the same value for your cursor field, making the cursor's position ambiguous. You can add additional field values to your cursor to further specify the start or end point and reduce ambiguity.

For example, in a data set containing all the cities named "Springfield" in the United States, there would be multiple start points for a query set to start at "Springfield":

#### Cities

Name	State
Springfield	Massachusetts
Springfield	Missouri
Springfield	Wisconsin

To start at a specific Springfield, you could add the state as a secondary condition in your cursor clause.

