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## API Collection

# Additional query macros

Supplementary macros that enable you to narrow query results and tell SwiftData how to sort and order those results.

## Topics

### Basic queries

`macro Query(animation: Animation)`

Fetches all instances of the attached model type, using the specified animation to animate any subsequent changes.

`macro Query(transaction: Transaction)`

Fetches all instances of the attached model type, using the specified transaction to animate any subsequent changes.

### Predicate-based queries

`macro Query<Element>(filter: Predicate<Element>?, sort: [SortDescriptor<Element>], animation: Animation)`

Fetches a sorted subset of the attached model type that satisfy the specified predicate.

`macro Query<Value, Element>(filter: Predicate<Element>?, sort: KeyPath<Element, Value>, order: SortOrder, animation: Animation)`

Fetches a subset of the attached model type, in a specific order, by sorting on a nonoptional attribute.

`macro Query<Value, Element>(filter: Predicate<Element>?, sort: KeyPath<Element, Value?>, order: SortOrder, animation: Animation)`

Fetches a subset of the attached model type, in a specific order, by sorting on an optional attribute.

```
macro Query<Element>(filter: Predicate<Element>?, sort: [SortDescriptor<Element>], transaction: Transaction?)
```

Fetches and sorts the subset of the attached model type that satisfy the specified predicate.

```
macro Query<Value, Element>(filter: Predicate<Element>?, sort: KeyPath<Element, Value>, order: SortOrder, transaction: Transaction?)
```

Fetches a subset of the attached model type, in a specific order, by sorting on a nonoptional attribute.

```
macro Query<Value, Element>(filter: Predicate<Element>?, sort: KeyPath<Element, Value?>, order: SortOrder, transaction: Transaction?)
```

Fetches a subset of the attached model type, in a specific order, by sorting on an optional attribute.

## Descriptor-based queries

```
macro Query<Element>(FetchDescriptor<Element>, animation: Animation)
```

Fetches only the subset of the attached model type that satisfy the provided fetch descriptor's criteria.

```
macro Query<Element>(FetchDescriptor<Element>, transaction: Transaction?)
```

Fetches only the subset of the attached model type that satisfy the provided fetch descriptor's criteria.

## See Also

### Model fetch

{ } Filtering and sorting persistent data

Manage data store presentation using predicates and dynamic queries.

```
macro Query()
```

Fetches all instances of the attached model type.

```
struct Query
```

A type that fetches models using the specified criteria, and manages those models so they remain in sync with the underlying data.

```
struct FetchDescriptor
```

A type that describes the criteria, sort order, and any additional configuration to use when performing a fetch.