

# Element Operators

Element operators are used to query the existence of fields or determine the data type of fields in documents. These operators help in schema validation, checking for missing fields, or working with specific data types.

Operator	Meaning	Example Usage
\$exists	Matches documents that <b>have</b> (or <b>do not have</b> ) a specified field	{ reviews: { \$exists: true } }
\$type	Matches documents where the field is of a specified <b>BSON type</b>	{ price: { \$type: "double" } }

## 1. \$exists – Check if a field exists

- Selects documents that either have or do not have a specific field.
- Can be used with true (field exists) or false (field does not exist).

### Example 1:

**Find products that have a reviews field.**

```
db.products.find({
  reviews: { $exists: true }
});
```

### Result:

```
[
  { _id: 3, name: "Yoga Mat", reviews: [...], ... },
  { _id: 5, name: "Bluetooth Speaker", reviews: [...], ... }
]
```

### Example 2:

**Find products that do NOT have a discount field.**

```
db.products.find({
  discount: { $exists: false }
});
```

### Result:

```
[
  { _id: 1, name: "Wireless Mouse", ... },
  { _id: 2, name: "Dumbbells", ... }
]
```

## 2. \$type – Match by BSON data type

- Selects documents where a field is of a certain data type.
- Useful when your schema has fields that might store data in different formats.

### Common BSON types:

Type Name	Type Alias	Description
"double"	1	64-bit floating point number
"string"	2	String data
"object"	3	Embedded document
"array"	4	Array
"bool"	8	Boolean
"int"	16	32-bit integer

### Example 1:

**Find products where the stock field is of type int.**

```
db.products.find({
  stock: { $type: "int" }
});
```

### Result:

```
[
  { _id: 1, name: "Wireless Mouse", stock: 200, ... },
  { _id: 6, name: "Smart Light", stock: 40, ... }
]
```

### Example 2:

**Find products where price is stored as a double.**

```
db.products.find({
  price: { $type: "double" }
});
```

### Result:

```
[
  { _id: 3, name: "Yoga Mat", price: 45.0, ... },
  { _id: 7, name: "Wireless Charger", price: 80.5, ... }
]
```