# The DQL - The Dataloop Query Language

It's the ability to navigate, query and sort your data within the dataloop platform.

DQL query has the following components:

**Resource** : The target resource for the query. (items or annotations)
**Filter**: The filter includes attributes and logical operators to filter items,basically it's your query .
The **output** will be a page with the items in it,which you can also sort based on fieldes like createdAt,name..

Data types:
- **string**: surround string constants with double quotes, e.g., "hello world"
- **number**: floating point and integer
- **boolean**: boolean variables are true or false
- **array**: collection of elements, e.g., [ "item1", "item2" ]
- **null**: no value

Operators :
- AND: "$and"
- OR: "$or"
- Exists: "$exists": true or false
- Equal: "$eq": "value"
- Equal not case sensitive (for strings): "$ieq": "value"
- Not equal: "$ne": "value"
- Greater than: "$gt": "value"
- Greater than or equal: "$gte": "value"
- Less than: "$lt": "value"
- Less than or equal: "$lte": "value"
- Field List Matching: "$in": ["option-1", "option-2"]
- Wildcard characters: * (representing zero or more characters) and ? (representing 1 character)

# DQL Examples:

Basic ones here :
https://dataloop.ai/docs/dql-operators


More Advanced:

- Get all annotated items with the model name "yolo":
  We know it will take 2 resources: item level-Annotated and annotation level-model name.

```
{
    "filter": {
        "$and":[{
            "hidden":false
        }, {
            "annotated":true
        }, {
            "type":"file"
        }]},"join": {
        "filter": {
            "$and":[{
                "$or":[{
                    "metadata": {
                        "user.model.name":"yolo"
                    }}]}]},"on": {
            "resource":"annotations","local":"itemId","forigen":"id"
        }}}
```

- All items with .jpg extension with user metadata device type iOS.

```
{
    "filter": {
        "$and":[{
            "hidden":false
        }, {
            "$or":[{
                "metadata": {
                    "user.deviceDetails.deviceOsType":"iOS"
                }}]}, {
            "$or":[{
                "filename":"*.jpg"
            }]}, {
            "type":"file"
        }]},"join": {}}
```

- Get all items that are with customer_name `Dataloop or customer2.`

```
{
    "filter": {
        "$and":[{
            "hidden":false
        }, {
            "$or":[{
                "metadata": {
                    "user.customer_name":"Dataloop"
                }}, {
                "metadata": {
                    "user.customer_name":"customer2"
                }}]}, {
            "type":"file"
        }]},"join": {}}
```

- Get all items with file_number greater than 12000

```
{
    "filter": {
        "$and":[{
            "hidden":false
        }, {
            "$or":[{
                "metadata": {
                    "user.file_number": {
                        "$gt":12000
                    }}}]}, {
            "type":"file"
        }]},"join": {}}
```

# Useful links:

More about DQL and Operators [here](here).
Filter using the sdk [here](here).