

Solr's default behaviour is somewhat arcane, and you may find that the results for a given search aren't presenting the objects you'd wish to prioritize. Below are some strategies for tweaking Solr results more to your liking.

All of these tweaks take place on the Solr Settings admin page (Islandora -> Solr index -> Solr settings).

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## Example query

Each of the strategies explored below will present different results for the same query. We will use the following query to illustrate each of them.

Search term: **monkeys**

Our repository has three objects with the term "monkeys" in their metadata:

- "Angry Students - March 1, 1982"
  - An issue of a student newspaper
  - Date: 1982-03-01
  - The term "monkeys" appears in the OCR, in an opinion piece critiquing the college administration.
- "Everything you need to know about monkeys"
  - A Book object
  - Date: 2009-02-01
  - The term "monkeys" appears in each of the Title, OCR, Description, and Subject fields.
- "Visual discrimination of facial expression among primates"
  - A Citation object - peer-reviewed journal article
  - Date: 2017-07-02
  - The term "monkeys" appears twice in the Subject and Description (abstract) fields.

## Modifying the Query - Query Defaults tab

The **Query Defaults** section allows you to tweak every Solr search that is carried out in your site. These include filters, sort options, limiting the search to certain fields, and even weighting those fields to prioritize them.

### Sorting results (Sort field for default query)

#### Sort field for default query

score desc

Indicates which field should define the sort order for the default query.

For example: **fgs\_createdDate\_dt desc**.

**Note:** only single-valued fields are sortable. For more information, see "sort" as discussed in the "Common query parameters" section of the [Solr documentation](#).

The Sort fields modify the order in which your search results appear. If nothing is entered here, the results will default to the objects' Solr score in descending value ("score desc"), which is how well Solr decides the objects match your keywords. But you can set it to work in other ways, or add additional fields to the Score.

With our search for Monkeys ordered by Score (score desc), the results might look like this:

1. Everything you need to know about monkeys
2. Visual discrimination of facial expression among primates
3. Angry Students - March 1, 1982

If you reversed the results (score asc), you would get the reverse order (Angry Students first, the book about monkeys last).

If you choose a field **other** than the score, your results will be sorted according to that field, regardless of Solr's assessment of the keyword matches.

For example, if you sort by Title (e.g. **mods\_titleInfo\_title\_ss asc**), your results would be:

1. Angry Students - March 1, 1982
2. Everything you need to know about monkeys
3. Visual discrimination of facial expression among primates

Even though the other two results would provide better information about monkeys.

If you want to incorporate the score and also sort results according to title or date, you can put multiple fields in the Sort section. Separate them with a comma.

#### Sort field for default query

score desc, mods\_originInfo\_dateIssued\_ss desc

Indicates which field should define the sort or

For example: **fgs\_createdDate\_dt desc**.

**Note:** only single-valued fields are sortable. For more information, see "sort" as discussed in the "Common query parameters" section of the [Solr documentation](#).

With the above query, results will first be sorted by their score. Objects with the same score will then be sorted by date, with the newest objects first. Assuming the Book and Citation object have the same score, the results would be:

1. Visual discrimination of facial expression among primates (2017)
2. Everything you need to know about monkeys (2009)
3. Angry Students - March 1, 1982 (1982)

## Filtering results (Solr base filter)

You may wish to apply a filter to your results, so that objects matching certain criteria are excluded, or so that the search only includes such objects.

To apply a filter that excludes your specified criteria, use a “-” character.

To apply a filter that requires your specified criteria, just enter the criteria directly.

### Solr base filter

```
-RELS_EXT_hasModel_uri_ms:"info:fedora/islandora:newspaperIssueCModel"
```

Lists base filters that are appended to all user queries. This may be used to filter results .  
Enter one filter per line.  
These filters will be applied to all queries in addition to any user-selected facet filters

For example, if you decide to exclude Newspaper Issue objects altogether from your search results, you would add the following to the Filter list:

```
-RELS_EXT_hasModel_uri_ms:"info:fedora/islandora:newspaperIssueCModel"
```

With that filter, a search for “monkeys” would return only:

1. Everything you need to know about monkeys
2. Visual discrimination of facial expression among primates

If you omit the “-” character:

```
RELS_EXT_hasModel_uri_ms:"info:fedora/islandora:newspaperIssueCModel"
```

then **only** newspaper objects would be included. A search for “monkeys” would have just one result:

1. Angry Students - March 1, 1982

To build a query filter:

1. Use “-” if you are excluding results with this filter
2. The Solr field you want to filter on
3. A colon “:”
4. The value of the Solr field, in quotes. Can contain multiple values using OR or AND.

### Example query filters:

- -RELS\_EXT\_hasModel\_uri\_ms:"info:fedora/islandora:newspaperIssueCModel"
  - Excludes all results with the Newspaper Issue content model

- RELS\_EXT\_isMemberOfCollection\_uri\_ms:("info:fedora/my:collection" or "info:fedora/my:other\_collection" or "info:fedora/my:last\_collection")
  - Includes ONLY results from within the three specified collections

## Specify and Weight Query Fields (Query Fields)

By default, Solr looks for keywords in all fields. The way that the default search scores these fields is rather mysterious. If you find that Solr is hiding the results you want to show off and pushing to the top results that you consider less valuable, you can use defined query fields to control them.

### Query fields

```
dc.title^5 dc.subject^6 dc.description^2 dc.creator^3 dc.contributor^3 dc.type OCR_t^0.4
```

Query fields to use for DisMax (simple) searches. See the [QueryFields](#) section in the [Solr docs](#)

### ☒ Prefer defined query fields?

Use the above "Query fields" by default; otherwise, they will only be used as a fallback in the selected request handler.

If you select "Prefer defined query fields", then Solr will look **only** at the fields you specify in the "Query fields" textarea, and ignore all others. Additionally, it will score the results according to which fields the keywords appear in, based on the "boost" value (^x) applied to that field.

With the query fields defined in the above screenshot, objects with "monkeys" in the Subject will be given the highest score, because dc.subject has the highest boost (6). Objects with "monkeys" in the Title will also be scored well, with a boost of 5. Objects with "monkeys" appearing only in the OCR will score lowest, with a boost of less than 1.

The results would be presented in the following order:

1. Everything you need to know about monkeys
  - Keyword in Title, Subject, Description, and OCR
2. Visual discrimination of facial expression among primates
  - Keyword in Subject, Description, and OCR
3. Angry Students - March 1, 1982
  - Keyword in OCR only