Executive Summary

At the time of writing, the GtR project provides two APIs: GtRAPI and GTR-2. Both produce outputs in XML and JSON formats. The GtRAPI is the same API that is used by the web portal and there is a direct correlation between the visible information on the web portal screens and the output from the API.
API Common Features

In this section we detail some of the common elements between the APIs, such as available parameters that can be used against some resources and how pagination within result sets.

Request Parameter Summary

Both APIs utilise some or all of the request parameters below as part of the URL. The following request summary provides details and examples:

<table>
<thead>
<tr>
<th>Request Parameter</th>
<th>Defaults</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>term</td>
<td>No default – mandatory parameter.</td>
<td>Only used with the Search Resource. The term or phrase to be searched for. Search terms must be URL encoded (UTF-8). For more about search terms and the search engine vocabulary see About Searching.</td>
<td>To search for the phrase: “Oxford University” encoded term=%22Oxford%20University%22</td>
</tr>
<tr>
<td>fetchSize</td>
<td>Default: 25 – not mandatory.</td>
<td>Only used on paged requests. Can have a value from 25 to 100. See How Pagination Works.</td>
<td>fetchSize=50</td>
</tr>
<tr>
<td>page</td>
<td>Default: 1 – not mandatory.</td>
<td>Only used on paged requests. Which page of the current paged result set to fetch. See How Pagination Works.</td>
<td>page=2</td>
</tr>
<tr>
<td>selectedSortOrder</td>
<td>Default: DESC – not mandatory. GTRAPI Only</td>
<td>Can have the value ASC or DESC. See How Pagination Works.</td>
<td>selectedSortOrder=ASC</td>
</tr>
<tr>
<td>selectedSortableField</td>
<td>No default – not mandatory. GTRAPI</td>
<td>Value depends on the Resource utilised. Initial request to the Resource will include a</td>
<td>selectedSortableField=&lt;x&gt;</td>
</tr>
</tbody>
</table>

Where <x> is a field provided in the...
<table>
<thead>
<tr>
<th>Request Parameter Defaults</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only</td>
<td>listing of sortable fields in the response. See How Pagination Works</td>
<td>gtr:sortableFields list from the initial response.</td>
</tr>
<tr>
<td>selectedFacets</td>
<td>Only used with the Search Resource. Comma separated list of facet IDs that are to be applied to the Search.</td>
<td>selectedFacets=cmVnaW9ufFNvdXRolEVhc3R8c3RyaW5n</td>
</tr>
<tr>
<td>fields</td>
<td>Only used with the Search Resource. Common delimited list of fields to be searched for the provided term</td>
<td>fields=&lt;x&gt; where &lt;x&gt; is a common delimited list of fields in the gtr:searchableFields list from the initial response</td>
</tr>
</tbody>
</table>

### How Pagination Works

Paginated resources will be limited to 25 items by default. You can specify further pages with the page parameter. You can also set a custom page size up to 100 with the fetchSize parameter. For example:

http://gtr.ukri.org/search/person?term=paul&page=1&fetchSize=25

The pagination details are contained within three HTTP response headers:


   For the search above the link header value is shown below:

   <http://gtr.ukri.org/search/person?term=paul&fields=pro.id,pro.t,pro.a,per.fn,per.on,per.sn,per.org.n,per.prot,per.pro.abs,pub.t,pub.a.org.n&page=1&fetchSize=25&selectedSortableField=score&selectedSortOrder=DESC>;rel=first,  
   <http://gtr.ukri.org/search/person?term=paul&fields=pro.id,pro.t,pro.a,per.fn,per.on,per.sn,per.org.n,per.prot,per.pro.abs,pub.t,pub.a.org.n&page=37&fetchSize=25&selectedSortableField=score&selectedSortOrder=DESC>;rel=last,  
   <http://gtr.ukri.org/search/person?term=paul&fields=pro.id,pro.t,pro.a,per.fn,per.on,per.sn,per.org.n,per.prot,per.pro.abs,pub.t,pub.a.org.n&page=2&fetchSize=25&selectedSortableField=score&selectedSortOrder=DESC>;rel=next

   rel=next

   The possible rel values are:
   
   a. **next**: Shows the URL of the next page of results.
   b. **last**: Shows the URL of the last page of results.
   c. **first**: Shows the URL of the first page of results.
   d. **previous**: Shows the URL of the previous page of results.

   If no 'next' or 'previous' relationship exists, then these will be omitted from the Link header. The 'first' and 'last' relationships will always be present for paged requests that return an HTTP 200.

2. **Link-Pages**. An integer defining the total number of pages: Link-Pages. At the time of writing the above search returns the integer: 37

3. **Link-Records**. An integer defining the total number of records: Link-Records : At the time of writing the above search returns the integer: 911
GTRAPI

GTRAPI Overview

Refer to the GtRAPI XML Schema for details on Response Entities detailed below. The XML schema for this interface can be found at: http://gtr.ukri.org/api

The GtRAPI exposes the following Resources:

<table>
<thead>
<tr>
<th>GtR Resource</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>search</td>
<td>Search projects, publications, people or organisations with a specific search term.</td>
<td>GtR Search Resource</td>
</tr>
<tr>
<td>organisation</td>
<td>Retrieve all organisations or a specific organisation by its identifier.</td>
<td>Organisation Resource</td>
</tr>
<tr>
<td>person</td>
<td>Retrieve all people or a specific person by their identifier.</td>
<td>Person Resource</td>
</tr>
<tr>
<td>project</td>
<td>Retrieve all projects or a specific project by its identifier.</td>
<td>Project Resource</td>
</tr>
<tr>
<td>publication</td>
<td>Retrieve all publications or a specific publication by its identifier.</td>
<td>Publication Resource</td>
</tr>
</tbody>
</table>
GTR Search Resource

The Search Resource can search through the four GTR Resource Entities. These are Project, Person, Publication and Organisation.

The base URL for the search interfaces follows the following standard:

http://host:port/search/{resource entity}

where the resource entity is one of the following:

- project
- person
- publication
- organisation

PLEASE NOTE: the service is case sensitive so all resources must be in lowercase.
## Search Projects

<table>
<thead>
<tr>
<th>Description</th>
<th>Search all projects for a specific term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paged?</td>
<td>YES</td>
</tr>
<tr>
<td>URL can be viewed in Web Portal?</td>
<td>YES</td>
</tr>
<tr>
<td>Base URL</td>
<td><a href="http://host:port/search/project">http://host:port/search/project</a></td>
</tr>
<tr>
<td>HTTP Method</td>
<td>GET</td>
</tr>
</tbody>
</table>

**Request Parameters**

- term [mandatory]
- fetchSize
- page
- selectedSortOrder
- selectedSortableField
- selectedFacets
- fields

See Request Parameters Summary.

**Example**

http://gtr.rcuk.c.uk/search/project?term=mouse&fetchSize=25&selectedSortableField=_score&selectedSortOrder=DESC&selectedFacets=YW1vdW50fC05MjIzMzcyMDM2ODU0Nzc1ODA4XzEwMDAwMHxyYW5nZQ==&fields=project.abs

### Important:

- The gtr:project response elements contained within gtr:projectOverview will only have the following elements/attributes populated:
  - url
  - gtr:id
  - gtr:title
  - gtr:fund

- The gtr:personRoles response elements within the gtr:projectOverview will only contain data for the PRINCIPAL_INVESTIGATOR role.
**Search Person**

<table>
<thead>
<tr>
<th>Description</th>
<th>Search all people for a specific term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paged?</td>
<td>YES</td>
</tr>
<tr>
<td>URL can be viewed in Web?</td>
<td>YES</td>
</tr>
<tr>
<td>Base URL</td>
<td><a href="http://host:port/search/person">http://host:port/search/person</a></td>
</tr>
<tr>
<td>HTTP Method</td>
<td>GET</td>
</tr>
</tbody>
</table>

**Request Parameters**

- `term` [mandatory]
- `fetchSize`
- `page`
- `selectedSortOrder`
- `selectedSortableField`
- `selectedFacets`
- `fields`

See Request Parameters Summary.

**Example**

http://gtr.ukri.org/search/person?term=mouse&selectedFacets=c3VybmdmFiZnxcbl2uufHN0eHluc3ZpY3Jvcw==&page=1&fetchSize=25&selectedSortableField=per.sn&selectedSortOrder=DESC&fields=per.org,per.fn,per.sn,per.org.n,per.pro.abs,per.pro.t

---

**Response Entity**

[Diagram of response entity structure]

Root response element providing results related to a Search query.

Container element for the potential return results from a Search request.
# Search Publications

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th>Search all publications for a specific term</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paged?</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>URL can be viewed in Web Portal?</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>Base URL</strong></td>
<td><a href="http://host:port/search/publication">http://host:port/search/publication</a></td>
</tr>
<tr>
<td><strong>HTTP Method</strong></td>
<td>GET</td>
</tr>
</tbody>
</table>

**Request Parameters**
- term [mandatory]
- fetchsize [page]
- selectedSortOrder
- selectedSortableField
- fields

See Request Parameters Summary.

**Example**
http://gtr.ukri.org/search/publication?term=mouse&page=1&fetchSize=25&selectedSortableField=&selectedSortOrder=&fields=per.pro.abs

---

**Response Entity**

- searchResult
  - Type: gtr:searchResult
    - searchResult:
      - Type: gtr:searchResult
        - resultList:
          - Type: gtr:results
            - results:
              - Type: gtr:results
                - projectOverview:
                  - Type: gtr:projectOverview
                - personOverview:
                  - Type: gtr:personOverview
                - organisationOverview:
                  - Type: gtr:organisationOverview
                - publicationOverview:
                  - Type: gtr:publicationOverview
Important:

- The gtr:project response elements contained within gtr:publicationOverview will only have the following elements/attributes populated:
  - url
  - gtr:id
  - gtr:title
  - gtr:grantCategory
  - gtr:grant

Note: a Placeholder for an abstract snippet exists in the publicationOverview schema but is currently not populated.
## Search Organisation

<table>
<thead>
<tr>
<th>Description</th>
<th>Search all organisations for a specific term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paged?</td>
<td>YES</td>
</tr>
<tr>
<td>URL can be viewed in Web?</td>
<td>YES</td>
</tr>
<tr>
<td>Base URL</td>
<td><a href="http://host:port/search/organisation">http://host:port/search/organisation</a></td>
</tr>
<tr>
<td>HTTP Method</td>
<td>GET</td>
</tr>
</tbody>
</table>
| Request Parameters| term fetchSize  
page  
selectedSortableField  
fields  
See Request Parameters Summary. |

### Example

http://gtr.ukri.org/search/organisation?term=mouse&page=1&fetchSize=25&selectedSortableField=&selectedSortOrder=&fields=organisation

## Response Entity

Response element providing results related to a Search query.

```
searchResult
  Type gtr:searchResult
  results
    Type gtr:results
    projectOverview
      Type gtr:projectOverview
    personOverview
      Type gtr:personOverview
    organisationOverview
      Type gtr:organisationOverview
    publicationOverview
      Type gtr:publicationOverview
```

Abstract

```
gtr:abstractSearchResult (extension base)
  resourceHitCounts
    Type gtr:resourceHitCounts
  sortableFields
    Type gtr:sortableFields
  searchableFields
    Type gtr:searchableFields
  facetGroups
    Type gtr:facetGroups
  suggestions
    Type gtr:suggestions
```
Project Resource

The Project Resource allows you to fetch a specific project by id, or a paged listing of all projects.

<table>
<thead>
<tr>
<th>Project By ID</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Paged?</strong></td>
</tr>
<tr>
<td><strong>URL can be viewed in Web</strong></td>
</tr>
<tr>
<td><strong>Base URL</strong></td>
</tr>
<tr>
<td><strong>HTTP Method</strong></td>
</tr>
<tr>
<td><strong>Example</strong></td>
</tr>
</tbody>
</table>

Response Entity

![Diagram of response entity structure]

Response elements from a Project query.
<table>
<thead>
<tr>
<th><strong>Project Listing</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Retrieve all projects</td>
</tr>
<tr>
<td><strong>Paged?</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>URL can be viewed in Web?</strong></td>
<td>NO</td>
</tr>
<tr>
<td><strong>Base URL</strong></td>
<td><a href="http://host:port/project">http://host:port/project</a></td>
</tr>
<tr>
<td><strong>HTTP Method</strong></td>
<td>GET</td>
</tr>
</tbody>
</table>
| **Request Parameters** | fetchSize  
page  
See Request Parameters Summary. |
| **Example**         | http://gtr.ukri.org/projects?page=2&fetchSize=25 |

<table>
<thead>
<tr>
<th><strong>Response Entity</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram of gtr project" /></td>
<td></td>
</tr>
</tbody>
</table>

Abstract representation of a resource. Resources have a related endpoint and unique identifier.
**Person Resource**

The Person Resource allows you to fetch a specific person by id, or a paged listing of all people. Within a specific person resource it is possible to search the projects related to a specific person by using the same syntax used to for search projects (see Search Projects)

<table>
<thead>
<tr>
<th>Description</th>
<th>Retrieve a person by their ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paged?</td>
<td>NO</td>
</tr>
<tr>
<td>URL can be viewed in Web Portal?</td>
<td>YES</td>
</tr>
<tr>
<td>Base URL</td>
<td><a href="http://host:port/person/">http://host:port/person/</a>&lt;id&gt;</td>
</tr>
</tbody>
</table>

**Request Parameters**
- term
- fetchSize [page]
- selectedSortableField
- selectedFacets
- fields
  
  See Request Parameters Summary.

**HTTP Method**
- GET

**Example**

```
http://gtr.ukri.org/person/E878C1F3-5057-4935-8DA3-AC625C55A7CF?term=&selectedFacets=c3RhcnR8MTMyNTM3
NjAwMDAwMF8xMzU2OTk4Mzk5MDU5fHJhbmdl&page=1&fetchSize=25&selectedSortableField=&selectedSortOrder=&fields=
```

**Important:** The gtr:project response elements contained within gtr:personOverview will only have the following elements/attributes populated:

- url
- gtr:id
- gtr:title
- gtr:fund
**Person Listing**

<table>
<thead>
<tr>
<th>Description</th>
<th>Retrieve all people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paged?</td>
<td>YES</td>
</tr>
<tr>
<td>URL can be viewed in Web?</td>
<td>NO</td>
</tr>
<tr>
<td>Base URL</td>
<td><a href="http://host:port/person">http://host:port/person</a></td>
</tr>
<tr>
<td>HTTP Method</td>
<td>GET</td>
</tr>
<tr>
<td>Request Parameters</td>
<td>fetchSize</td>
</tr>
<tr>
<td></td>
<td>page</td>
</tr>
<tr>
<td></td>
<td>See Request Parameters Summary.</td>
</tr>
</tbody>
</table>

**Example**

http://gtr.ukri.org/person?page=2&fetchSize=25

**Response Entity**
**Publication Resource**

The Publication Resource allows you to fetch a specific publication by id, or a paged listing of all publications.

<table>
<thead>
<tr>
<th><strong>Publication By ID</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Retrieve a publication by its ID</td>
</tr>
<tr>
<td><strong>Paged?</strong></td>
<td>NO</td>
</tr>
<tr>
<td><strong>URL can be viewed in Web Portal?</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>Base URL</strong></td>
<td><a href="http://host:port/publication/">http://host:port/publication/</a>&lt;id&gt;</td>
</tr>
<tr>
<td><strong>HTTP Method</strong></td>
<td>GET</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td><a href="http://gtr.ukri.org/publication/21B244B7-6C82-4F92-9DFC-577C1E7831A8">http://gtr.ukri.org/publication/21B244B7-6C82-4F92-9DFC-577C1E7831A8</a></td>
</tr>
</tbody>
</table>

**Important:** The gtr:project response elements contained within gtr:publicationOverview will only have the following elements/attributes populated:

- url
- gtr:id
- gtr:title
- gtr:fund

![Diagram](image)
### Publication Listing

<table>
<thead>
<tr>
<th>Description</th>
<th>Retrieve all publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paged?</td>
<td>YES</td>
</tr>
<tr>
<td>URL can be viewed in Web Portal?</td>
<td>NO</td>
</tr>
<tr>
<td>Base URL</td>
<td><a href="http://host:port/publication">http://host:port/publication</a></td>
</tr>
<tr>
<td>HTTP Method</td>
<td>GET</td>
</tr>
<tr>
<td>Request Parameters</td>
<td>fetchSize, page</td>
</tr>
<tr>
<td></td>
<td>See Request Parameters Summary.</td>
</tr>
<tr>
<td>Example</td>
<td><a href="http://gtr.ukri.org/publication?page=2&amp;fetchSize=25">http://gtr.ukri.org/publication?page=2&amp;fetchSize=25</a></td>
</tr>
</tbody>
</table>

### Response Entity

- ![Response Entity Diagram](image-url)
** Organisation Resource **

The Organisation Resource allows you to fetch a specific organisation by id, or a paged listing of all organisations. Within a specific organisation resource it is possible to search the projects related to a specific person by using the same syntax used to for search projects (see Search Projects)

<table>
<thead>
<tr>
<th>Organisation By ID</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Retrieve a organisation by its ID</td>
</tr>
<tr>
<td><strong>Paged?</strong></td>
<td>NO</td>
</tr>
<tr>
<td><strong>URL can be viewed in Web</strong></td>
<td>YES</td>
</tr>
<tr>
<td><strong>Base URL</strong></td>
<td><a href="http://host:port/organisation/">http://host:port/organisation/</a>&lt;id&gt;</td>
</tr>
<tr>
<td><strong>Request Parameters</strong></td>
<td>term, fetchSize, page, selectedSortOrder, selectedSortableField, selectedFacets, fields</td>
</tr>
<tr>
<td><strong>HTTP Method</strong></td>
<td>GET</td>
</tr>
<tr>
<td><strong>Example</strong></td>
<td><a href="http://gtr.ukri.org/organisation/30A429E3-83B7-4E41-99C0-14A144F07DFE/?term=&amp;selectedFacets=c3RhdHVzfENsb3NhcmVhbmNob2tlbi&amp;fields=&amp;fetchSize=25&amp;page=1&amp;selectedSortableField=project.endDate&amp;selectedSortOrder=DESC">http://gtr.ukri.org/organisation/30A429E3-83B7-4E41-99C0-14A144F07DFE/?term=&amp;selectedFacets=c3RhdHVzfENsb3NhcmVhbmNob2tlbi&amp;fields=&amp;fetchSize=25&amp;page=1&amp;selectedSortableField=project.endDate&amp;selectedSortOrder=DESC</a></td>
</tr>
</tbody>
</table>

**Response Entity**

![Response Entity Diagram](image-url)
**Important:** The gtr:projectresponse elements contained within gtr:publicationOverview will only have the following elements/attributes populated:

- url
- gtr:id
- gtr:title
- gtr:fund
### Organisation Listing

<table>
<thead>
<tr>
<th>Description</th>
<th>Retrieve all organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paged?</td>
<td>YES</td>
</tr>
<tr>
<td>URL can be viewed in Web</td>
<td>NO</td>
</tr>
<tr>
<td>Base URL</td>
<td><a href="http://host:port/publication">http://host:port/publication</a></td>
</tr>
<tr>
<td>HTTP Method</td>
<td>GET</td>
</tr>
<tr>
<td>Request Parameters</td>
<td>fetchSize, page</td>
</tr>
<tr>
<td></td>
<td>See Request Parameters Summary.</td>
</tr>
<tr>
<td>Example</td>
<td><a href="http://gtr.ukri.org/organisation?page=2&amp;fetchSize=25">http://gtr.ukri.org/organisation?page=2&amp;fetchSize=25</a></td>
</tr>
</tbody>
</table>

### Response Entity

- **Abstract**: Representation of a resource. Resources have a related endpoint and unique identifier.
- **Attributes**:
  - name (Type: xs:string)
  - department (Type: xs:string)
  - website (Type: xs:string)
  - address (Type: gtr.address)
  - federatedids (Type: xs:string)

- **organisation** (Type: gtrorganisation)
- **Collection of gtrorganisation**

![Diagram showing organisation and attributes](diagram.png)
Failure Scenarios

Any requests that fail due to client or server errors will return a HTTP Status Code relevant to the type of error encountered.

The following errors are returned by the GtR application:

<table>
<thead>
<tr>
<th>Code</th>
<th>Meaning</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>The client provided invalid data or parameters</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The requested resource does not exist</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>An unexpected error has occurred on the server</td>
</tr>
</tbody>
</table>

Other HTTP Status Codes may be returned, but are not specifically in use by the GtR application.
About Searching

Searching Overview

In this topic you can find out about how Search Terms work to help with custom searches and some help understanding how searching operates.

A Search term is a query that can be single or multiple words or phrases that may use operators (e.g. Wild Cards, Boolean Operators etc.) to perform simple or complex searches.

The Lucene tool is used to provide information retrieval services from the GtR database. Lucene enables complex searches known as queries.


Search Terms in a Nutshell

The following table provides a summary of Lucene syntax and indicates which are implemented:

<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>A single word</td>
<td>Test</td>
</tr>
<tr>
<td></td>
<td>Not case sensitive</td>
<td></td>
</tr>
<tr>
<td>Phrase</td>
<td>A set of terms</td>
<td>Test Blood</td>
</tr>
<tr>
<td></td>
<td>Not case sensitive</td>
<td></td>
</tr>
<tr>
<td>Quoted Phrase</td>
<td>A phrase enclosed with speech marks to indicate matching a phrase rather than the individual terms.</td>
<td>&quot;Blood Test&quot;</td>
</tr>
<tr>
<td>Case</td>
<td>Lucene is not case sensitive except Boolean terms (UPPER CASE).</td>
<td>N/A</td>
</tr>
<tr>
<td>Wildcards * or ?</td>
<td>? Single character wildcard</td>
<td>T?nt</td>
</tr>
<tr>
<td></td>
<td>* Multiple character wildcard</td>
<td>T*nt</td>
</tr>
<tr>
<td>Field Search</td>
<td>Performs a likeness search for a single term.(Levenshtein Distance, or Edit Distance). For example, “term”~&quot;&lt;similarity&gt;&quot; where “term” is the search string and (optional) similarity is a number between 0 and 1. The default value is 0.5 and the higher the number the nearer the returned items will be to the search term.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Test~0.8</td>
<td>Documents containing one or more words quite similar to “test”.</td>
</tr>
<tr>
<td></td>
<td>Test~0.1</td>
<td>Documents containing one or more words quite similar to “test” but less similar to “test” than 0.8.</td>
</tr>
</tbody>
</table>

Note: You cannot use * or ? as the first character of a search.
<table>
<thead>
<tr>
<th>Description</th>
<th>Example</th>
<th>Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity Search~</td>
<td>Looks for terms within a certain number of words from each other. For example, “test blood” ~10 returns any instances of test and blood within 10 words of each other in a document.</td>
<td>“test blood” ~10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Documents with “test” and “blood” within 10 words of each other.</td>
</tr>
<tr>
<td>Range Search</td>
<td>Not currently supported in GtR.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>
| Boosting Terms^        | You can provide a weighted relevance factor to a term or phrase using the caret character ^.
|                        | The higher the boost value the more relevant the term or phrase is. Values are from greater than zero e.g. 0.1, 1, 10. | “test blood”^3, “test sugar”^0.5.                                    |
|                        |                          | Documents related to “test blood” or “test sugar” with “test blood” matches given a higher priority. |
| Boolean                | These perform logic operations. Note: Words are capitalised. | Returns documents containing either “test” or “research”.             |
| OR: returns documents where either terms/phrase exist. | Test OR research | Test AND “Blood Sugar”                                                 |
| (OR is the default)    |                          | Documents that contain both “test” and either “blood” or “sugar”.     |
| AND: returns documents where both terms exist | Test AND blood NOT “test AND sugar” | Test AND “blood test” - “sugar test”                                 |
| NOT: excludes documents that contain the specified term/phrase. | test AND blood NOT “test AND sugar” | Returns all documents with test and these documents may contain blood. |
| Grouping               | You can use parentheses to enclose terms or phrases | Return documents that must contain results and either blood or sugar or insulin. |
| Field Grouping         | Not currently supported in GtR | N/A                                                                    |
| Escape Characters      | These are used to include special characters such as + - && || ( ) { } [ ] ^ “ ~ * ? : \ in search terms and phrases. | If you wish to search for the phrase (A+B):C use (A+B)\:C             |
|                        |                          | Returns documents containing “(A+B):C”                                 |