DataMAD Document Generation Example

Table of Contents

[Introduction 1](#_Toc54620031)

[Formatting 1](#_Toc54620032)

[Loops, paragraphs and tables 2](#_Toc54620033)

[Paragraphs 2](#_Toc54620034)

[Table rows 2](#_Toc54620035)

[Table Columns 2](#_Toc54620036)

[Dynamic Table 2](#_Toc54620037)

[Available Variables 3](#_Toc54620038)

[Grant 3](#_Toc54620039)

[Imported Grant 4](#_Toc54620040)

[Data Products 5](#_Toc54620041)

[Digital Data Product 5](#_Toc54620042)

[Model Source Data Product 6](#_Toc54620043)

[Physical Data Product 7](#_Toc54620044)

[Hard-copy Data Product 7](#_Toc54620045)

[Third Party Data Product 8](#_Toc54620046)

# Introduction

Documents templating is accomplished using the python package **python-docx-template.** More detailed documentation can be found here ([https://docxtpl.readthedocs.io/en/latest/)](https://docxtpl.readthedocs.io/en/latest/) for writing templates but the majority of the template design questions can be answered by looking a the Jinja2 template documentation (<https://jinja.palletsprojects.com/en/2.11.x/templates/>). This pages provides everything from the proper formatting of [variables](https://jinja.palletsprojects.com/en/2.11.x/templates/#variables), [filters](https://jinja.palletsprojects.com/en/2.11.x/templates/#list-of-builtin-filters) and [control structures](https://jinja.palletsprojects.com/en/2.11.x/templates/#list-of-control-structures).

This document serves as a guide and an example for the types of things you can do with document generation and DataMAD.

The following sections describe different aspects of templating.

# Formatting

Formatting is done by formatting the variable in the way you would like it to appear:

|  |  |
| --- | --- |
| Format | Example |
| Bold | **{{ grant.grant\_ref }}** |
| Italic | *{{ grant.grant\_ref }}* |
| Underlined | {{ grant.grant\_ref }} |
| Coloured | {{ grant.grant\_ref }} |
| Highlighted | {{ grant.grant\_ref }} |

This can extend to things such as bullets and numbering:

* {%p for item in grant.importedgrant.science\_areas %}
* {{ item }}
* {%p endfor %}

# Loops, paragraphs and tables

When there is a list of values, it makes sense to loop through them to display. This can be done using the Jinja syntax for [control structures](https://jinja.palletsprojects.com/en/2.11.x/templates/#list-of-control-structures).

Paragraphs, bullets and table columns/rows are treated a little differently. The python-docx-template documentation gives an explanation (<https://docxtpl.readthedocs.io/en/latest/#extensions>)

### Paragraphs

* {%p for item in grant.importedgrant.science\_areas %}
* {{ item }}
* {%p endfor %}

### Table rows

|  |  |  |  |
| --- | --- | --- | --- |
| Col1 | | {%tr for row in table\_test.table\_contents %} | |
| {%tr for row in table\_test.table\_contents %} | **{{ row.col1 }}** | {{ row.col2 }} |
| {{ row.col1 }} | | **{%tr endfor %}** | |
| {%tr endfor %} | |  | |

### Table Columns

|  |  |  |
| --- | --- | --- |
| {%tc for col in table\_test.col\_labels %} | **{{ col|title }}** | {%tc endfor %} |

### Dynamic Table

You can combine columns and rows to generate a fully dynamic table:

|  |  |  |
| --- | --- | --- |
| {%tc for col in table\_test.col\_labels %} | **{{ col|title }}** | {%tc endfor %} |
| {%tr for row in table\_test.table\_contents %} | | |
| {%tc for col, value in row.items() %} | {{ value }} | {%tc endfor %} |
| {%tr endfor %} | | |

# Available Variables

You can insert fields in the middle of a sentence. The documents are fed the grant as context.

A grant is related to several different objects:

|  |  |
| --- | --- |
| Related Object | Description |
| Imported Grant | The raw grant which comes from the NERC central grant database. If changes are made in this central database they will be reflected in the importedgrant and linked accordingly. |
| Data Centre | The assigned data centre and other data centre |
| Data Products | These can be used to automatically fill in tables for DMP documents. |

Here are the available fields and their reference strings for each of the objects:

## Grant

All fields are accessed ***using grant.<fieldName>*** e.g. ***grant.grant\_ref***

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| grant\_ref | String | {{ grant.grant\_ref }} |
| alt\_data\_contact | String | {{ grant.alt\_data\_contact }} |
| alt\_data\_contact\_email | String | {{ grant.alt\_data\_contact\_email }} |
| assigned\_data\_centre | Data Centre | {{ grant.assigned\_data\_centre }} |
| other\_data\_centre | Data Centre | {{ grant.other\_data\_centre }} |
| hide\_record | Boolean | {{ grant.hide\_record }} |
| date\_contacted\_pi | Date | {{ grant.date\_contacted\_pi }} |
| will\_grant\_produce\_data | Boolean | {{ grant.will\_grant\_produce\_data }} |
| datasets\_delivered | Boolean | {{ grant.datasets\_delivered }} |
| sanctions\_recommended | Boolean | {{ grant.sanctions\_recommended }} |
| case\_for\_support\_found | Boolean | {{ grant.case\_for\_support\_found }} |
| claimed | Bool | {{ grant.claimed }} |
| science\_area | String | {{ grant.science\_area }} |
| jira\_ticket | URL | {{ grant.jira\_ticket }} |
| dmp\_agreed | Boolean | {{ grant.dmp\_agreed }} |
| dmp\_agreed\_date | DateTime | {{ grant.dmp\_agreed\_date }} |

## Imported Grant

Imported grant comes from NERC Siebel system. The most recent version of the imported grant can be accessed using ***grant.importedgrant***

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| title | String | {{ grant.importedgrant.title }} |
| grant\_ref | String | {{ grant.importedgrant.grant\_ref }} |
| creation\_date | DateTime | {{ grant.importedgrant.creation\_date }} |
| grant\_status | String | {{ grant.importedgrant.grant\_status }} |
| amount\_awarded | Decimal | {{ grant.importedgrant.amount\_awarded }} |
| call | String | {{ grant.importedgrant.call }} |
| overall\_score | Float | {{ grant.importedgrant.overall\_score }} |
| facility | String | {{ grant.importedgrant.facility }} |
| grant\_type | String | {{ grant.importedgrant.grant\_type }} |
| scheme | String | {{ grant.importedgrant.scheme }} |
| lead\_grant | Boolean | {{ grant.importedgrant.lead\_grant }} |
| parent\_grant | Grant | {{ grant.importedgrant.parent\_grant }} |
| grant\_holder | String | {{ grant.importedgrant.grant\_holder }} |
| department | String | {{ grant.importedgrant.department }} |
| research\_org | String | {{ grant.importedgrant.research\_org }} |
| address1 | String | {{ grant.importedgrant.address1 }} |
| address2 | String | {{ grant.importedgrant.address2 }} |
| city | String | {{ grant.importedgrant.city }} |
| post\_code | String | {{ grant.importedgrant.post\_code }} |
| email | String | {{ grant.importedgrant.email }} |
| work\_number | String | {{ grant.importedgrant.work\_number }} |
| data\_contact | String | {{ grant.importedgrant.data\_contact }} |
| data\_contact\_email | String | {{ grant.importedgrant.data\_contact\_email }} |
| data\_contact\_phone | String | {{ grant.importedgrant.data\_contact\_phone }} |
| routing\_classification | String | {{ grant.importedgrant.routing\_classification }} |
| secondary\_classification | String | {{ grant.importedgrant.secondary\_classification }} |
| science\_areas | List | {{ grant.importedgrant.science\_areas }} |
| ncas | Boolean | {{ grant.importedgrant.ncas }} |
| nceo | Boolean | {{ grant.importedgrant.nceo }} |
| comments | String | {{ grant.importedgrant.comments }} |
| proposed\_start\_date | Date | {{ grant.importedgrant.proposed\_start\_date }} |
| proposed\_end\_date | Date | {{ grant.importedgrant.proposed\_end\_date }} |
| actual\_start\_date | Date | {{ grant.importedgrant.actual\_start\_date }} |
| actual\_end\_date | Date | {{ grant.importedgrant.actual\_end\_date }} |
| abstract | String | {{ grant.importedgrant.abstract|truncate(100) }} |
| objectives | String | {{ grant.importedgrant.objectives }} |

## Data Products

The data products can be accessed using an attribute of the grant object. This will produce a list of the relevant data products. The following sections assume you are looping the data products using a for loop, using ***dataproduct*** as the name for your loop variable.

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| digital\_data\_products | DataProduct List | * {%p for dataproduct in grant.digital\_data\_products %} * {{ dataproduct }} * {%p endfor %} |
| model\_source\_data\_products | * {%p for dataproduct in grant.model\_source\_data\_products %} * {{ dataproduct }} * {%p endfor %} |
| physical\_data\_products | * {%p for dataproduct in grant.physical\_data\_products %} * {{ dataproduct }} * {%p endfor %} |
| hardcopy\_data\_products | * {%p for dataproduct in grant.hardcopy\_data\_products %} * {{ dataproduct }} * {%p endfor %} |
| third\_party\_data\_products | * {%p for dataproduct in grant.third\_party\_data\_products %} * {{ dataproduct }} * {%p endfor %} |

### Digital Data Product

List accessor: ***grant.digital\_data\_products***

{% with dataproduct=grant.digital\_data\_products.first() %}

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| description | String | {{ dataproduct.description }} |
| contact | String | {{ dataproduct.contact }} |
| data\_volume | Integer | {{ dataproduct.data\_volume }} |
| delivery\_date | Date | {{ dataproduct.delivery\_date }} |
| emabargo\_date | Date | {{ dataproduct.embargo\_date }} |
| doi | Boolean | {{ dataproduct.doi }} |
| preservation\_plan | Preservation Plan | {{ dataproduct.preservation\_plan }} |
| data\_format | DataFormat | {{ dataproduct.data\_format }} |
| additional\_comments | String | {{ dataproduct.additonal\_comments }} |

{% endwith %}

### Model Source Data Product

List accessor: ***grant.model\_source\_data\_products***

{% with dataproduct=grant.model\_source\_data\_products.first() %}

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| name | String | {{ dataproduct.name }} |
| contact | String | {{ dataproduct.contact }} |
| description | String | {{ dataproduct.description }} |
| sample\_destination | String | {{ dataproduct.sample\_destination }} |
| additional\_comments | String | {{ dataproduct.additonal\_comments }} |

{% endwith %}

### Physical Data Product

List accessor: ***grant.physical\_data\_products***

{% with dataproduct=grant.physical\_data\_products.first() %}

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| name | String | {{ dataproduct.name }} |
| contact | String | {{ dataproduct.contact }} |
| sample\_type | String | {{ dataproduct.sample\_type }} |
| sample\_destination | String | {{ dataproduct.sample\_destination }} |
| additional\_comments | String | {{ dataproduct.additional\_comments }} |

{% endwith %}

### Hard-copy Data Product

List accessor: ***grant.hardcopy\_data\_products***

{% with dataproduct=grant.hardcopy\_data\_products.first() %}

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| name | String | {{ dataproduct.name }} |
| contact | String | {{ dataproduct.contact }} |
| data\_format | DataFormat | {{ dataproduct.data\_format }} |
| issues | String | {{ dataproduct.issues }} |
| delivery\_date | Date | {{ dataproduct.delivery\_date }} |
| additional\_comments | String | {{ dataproduct.additional\_comments }} |

{% endwith %}

### Third Party Data Product

List accessor: ***grant.third\_party\_data\_products***

{% with dataproduct=grant.third\_party\_data\_products.first() %}

|  |  |  |
| --- | --- | --- |
| Field | Type | Example |
| name | String | {{ dataproduct.name }} |
| contact | String | {{ dataproduct.contact }} |
| data\_location | String | {{ dataproduct.data\_location }} |
| description | String | {{ dataproduct.description }} |
| data\_volume | Integer | {{ dataproduct.data\_volume }} |
| responsibility | String | {{ dataproduct.responsibility }} |
| issues | String | {{ dataproduct.issues }} |
| additional\_comments | String | {{ dataproduct.additional\_comments }} |

{% endwith %}