

# Assignment 43 - Intriguing Geomatics Assignment

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## 1. Typst Functionalities

### 1.a. Headings

#### 1.a.i. Title of a level 3 heading

Title of a level 4 heading

*Title of a level 5 heading*

*Title of a level 6 heading*

### 1.b. Figures

To learn about figures, you can refer to the [documentation](#).

#### 1.b.i. Tables

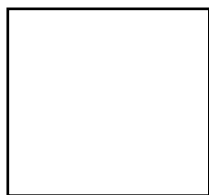
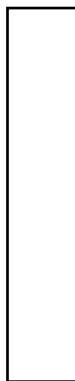
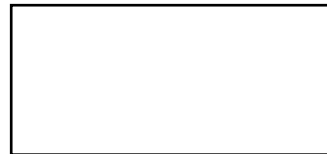
A nice table is shown below in Table 1.

*Table 1: ~~Very~~objective comparisons of operating systems.*

|               | Windows 11 | Ubuntu 24.04.2 LTS |
|---------------|------------|--------------------|
| Quality       | Bad        | Good               |
| Accessibility | Good       | OK                 |
| Performance   | OK         | Good               |

#### 1.b.ii. Figures

You can refer to figures like Figure 1 but also to sub-figures like Figure 1a.

(a) *A piece of art.*(b) *Emptiness is a form of art.*(c) *A very nice piece of art.**Figure 1: Art is subjective.*

## 1.c. Math

To learn about math, you can refer to the [documentation](#).

A famous equation is shown below.

$$\sum_{k=1}^n k = \frac{n(n+1)}{2} \quad (1.1)$$

You can also refer to equations like Equation (1.2).

$$a^2 + b^2 = c^2 \quad (1.2)$$

## 1.d. References

We are in [Chapter 1](#) and in [Section 1.d](#). It is possible to refer to any heading in the document, such as: [Section 1.e](#), [Bibliography](#) and [Appendix A](#). However it might not be the best idea to refer to unnumbered headings. You can see what happens with the different levels of headings for example:

- [Chapter 1](#)
- [Section 1.a](#)
- [Subsection 1.a.i](#)
- [Title of a level 4 heading](#)
- [Title of a level 5 heading](#)
- [Title of a level 6 heading](#)

## 1.e. Comments

Typst doesn't really support comments, so we created styled blocks to add comments to the document. You can use them to add TODOs or discussions, but you can also create your own styled blocks.

**TODO: Don't forget**

Something to do.

**Discussion: Talk to people**

A discussion about something.

When you want to render the final document, you can either remove them or hide them by setting the `HIDE-COMMENTS` variable to `true` in `other-tools/styled-blocks.typ`.

## 2. Using this Template

### **TODO: Explain how to use the template**

Talk about:

- The theoretical organisation in different parts
- The practical organisation in different files
- The short and long versions

## 3. Other Typst Templates

This template was inspired from Ledoux (2025) who made a Typst template for the theses of Geomatics students at TU Delft, and from Ovando (2024) who made a Typst template for the APA style. If you want a fully APA-compliant template, you should use (Ovando, 2024).

## 4. Issues / Improvements

There are no known issues with the template. However, it is possible that some combinations or arguments don't work well together. If you find any issues, please open an issue or a pull request on the [GitHub repository](#) of the template. You can also suggest improvements or new features.

Here are some ideas for improvements:

- Add more customisation of the header and footer,
- Add more customisation of the cover page,
- ...

## Bibliography

- Ledoux, H. (2025). *Typst Template for MSc Geomatics Thesis* [Computer software]. [https://github.com/hugoledoux/msc\\_geomatics\\_thesis\\_typst](https://github.com/hugoledoux/msc_geomatics_thesis_typst)
- Ovando, J. (2024). *Comprehensive APA 7th Edition Style Template for Typst, suitable for both student and professional papers*. [Computer software]. <https://typst.app/universe/package/versatile-apa>

# Appendix A

## Actual Typst Content

Several sections of the document are displayed here:

- [Appendix A.1](#) show the main file of the document, which puts everything together,
- [Appendix A.2](#) shows the main content of the document,
- [Appendix A.3](#) shows the appendices.

### A.1. Main File

*Listing 1: The main file of the document.*

```
#import "../template/template-short.typ": (
  init,
  cover-container,
  pre-content-container,
  main-content-container,
  post-content-container,
  appendix-container,
)
#import "../template/cover.typ"

#import "../other-tools/custom-style.typ"

/* ----- */
/*      Define some parameters used multiple times      */
/* ----- */

/* ----- Document settings ----- */
#let title = "Assignment 43 - Intriguing Geomatics Assignment"
#let authors-names = ("Author 1", "Author 2", "Author 3")
#let authors-data = (
  "Student IDs": ("1234567", "9876543", "7654321"),
  "Email": (
    "lorem.ipsum@email.com",
    "dolor.sit@email.com",
    "amet.consectetur@email.com",
  ),
)

/* ----- */
/*      Actual document content      */
/* ----- */

#show: init.with(
  title: title,
  authors-names: authors-names,
  authors-data: authors-data,
  // text-font: ("Source Serif 4", "Libertinus Serif"),
  // math-font: ("STIX Two Math", "New Computer Modern Math"),
)

#show: custom-style.custom-style

/* ----- Cover page ----- */

#[
```

```

#show: cover-container.with(full-page: false)
#cover.cover(
  title: title,
  authors-names: authors-names,
  authors-data: authors-data,
  full-page: false,
  alignment: center,
  date: datetime.today(),
)
]

/* ----- Parts before the main content ----- */

#[
#show: pre-content-container.with()
// #include "../content/preface.typ"
// #include "../content/abstract.typ"
// #include "../content/table-of-contents.typ"
]

/* ----- Main content ----- */

#[
#show: main-content-container.with()
#include "../content/content.typ"
]

/* ----- Parts after the main content ----- */

#[
#show: post-content-container.with(new-page: true)
#include "../content/bibliography.typ"
]

/* ----- Appendices ----- */

#[
#show: appendix-container.with(h1-new-page: true)
#include "appendix.typ"
]

```

## A.2. Main Content

In Listing 2 below is displayed the actual Typst content of the document.

*Listing 2: The content of the document.*

```

#import "../other-tools/styled-blocks.typ": block-todo, block-discussion, styled-block
#import "@preview/subpar:0.2.1"

// // Uncomment the following line to hide the comments in the final document
// #let block-todo = block-todo.with(render: false)
// #let block-discussion = block-discussion.with(render: false)

= Typst Functionalities <typst-functionalities>

== Headings <headings>

```

```
#for i in range(3, 7) {
  [#heading("Title of a level " + str(i) + " heading", level: i) #label("level-" + str(i))]
}
```

## == Figures

To learn about figures, you can refer to the [#link\("https://typst.app/docs/reference/model/figure/"\)\[documentation\]](https://typst.app/docs/reference/model/figure/).

## === Tables

A nice table is shown below in [@table-operating-systems](#).

```
#figure(
  table(
    columns: 3,
    table.header([], [Windows 11], [Ubuntu 24.04.2 LTS]),
    [Quality], [Bad], [Good],
    [Accessibility], [Good], [OK],
    [Performance], [OK], [Good],
  ),
  caption: [#strike()][Very objective] comparisons of operating systems.,
) <table-operating-systems>
```

## === Figures

You can refer to figures like [@figure-art-subjective](#) but also to sub-figures like [@figure-piece-of-art](#).

```
#subpar.grid(
  columns: 3,
  figure(
    rect(
      height: 10%,
      width: 50%,
    ),
    caption: [A piece of art.],
  ),
  <figure-piece-of-art>,
  figure(
    rect(
      height: 20%,
      width: 20%,
    ),
    caption: [Emptiness is a form of art.],
  ),
  figure(
    rect(
      height: 8%,
      width: 80%,
    ),
    caption: [A very nice piece of art.],
  ),
  caption: [Art is subjective.],
  label: <figure-art-subjective>,
)
```

## == Math

To learn about math, you can refer to the [#link\("https://typst.app/docs/reference/math/"\)\[documentation\]](https://typst.app/docs/reference/math/).

A famous equation is shown below.

$$\sum_{k=1}^n k = (n(n+1)) / 2$$

You can also refer to equations like `@equation-pythagorean-theorem`.

$$a^2 + b^2 = c^2$$
 `<equation-pythagorean-theorem>`

**== References** `<references>`

```
#let handle-missing-reference(references) = context {
  let working-refs = ()
  for potential-ref in references {
    if query(potential-ref).len() != 0 {
      working-refs.push(ref(potential-ref))
    }
  }
  working-refs.join(", ", last: " and ")
}

#let example-references = (
  <abstract>,
  <table-of-contents>,
  <comments>,
  <bibliography>,
  <appendix-content>,
)

#let formatted-references = handle-missing-reference(example-references)
```

We are in `@typst-functionalities` and in `@references`. It is possible to refer to any heading in the document, such as: `#formatted-references`. However it might not be the best idea to refer to unnumbered headings. You can see what happens with the different levels of headings for example:

```
#list(..([@typst-functionalities], [@headings]) + range(3, 7).map(it => ref(label("level-" + str(it)))))
```

**== Comments** `<comments>`

Typst doesn't really support comments, so we created styled blocks to add comments to the document. You can use them to add TODOs or discussions, but you can also create your own styled blocks.

```
#block-todo[Don't forget][Something to do.]
#block-discussion[Talk to people][A discussion about something.]
```

When you want to render the final document, you can either remove them or hide them by setting the `HIDE-COMMENTS` variable to `true` in `other-tools/styled-blocks.typ`.

**= Using this Template**

```
#block-todo[Explain how to use the template][
  Talk about:

  - The theoretical organisation in different parts
  - The practical organisation in different files
  - The short and long versions
]
```

**= Other Typst Templates**

This template was inspired from `#cite(<ledoux_typst_template>, form: "prose")` who made a Typst template for the



theses of Geomatics students at TU Delft, and from `#cite(<versatile_apa_typst_template>`, form: "prose") who made a Typst template for the APA style. If you want a fully APA-compliant template, you should use `@versatile_apa_typst_template`.

#### **= Issues / Improvements**

There are no known issues with the template. However, it is possible that some combinations or arguments don't work well together. If you find any issues, please open an issue or a pull request on the `#link("https://github.com/ZokszY/Student-Report-Template")`[GitHub repository] of the template. You can also suggest improvements or new features.

Here are some ideas for improvements:

- Add more customisation of the header and footer,
- Add more customisation of the cover page,
- ...

## A.3. Appendix Content

*Listing 3: The content of the appendix.*

#### **= Actual Typst Content** `<appendix-content>`

Several sections of the document are displayed here:

- `@appendix-main-file` show the main file of the document, which puts everything together,
- `@appendix-main-content` shows the main content of the document,
- `@appendix-appendix-content` shows the appendices.

#### **== Main File** `<appendix-main-file>`

```
#[
  #show figure: set block(breakable: true)
  #figure(
    raw(
      read("main.typ"),
      lang: "typst",
      block: true,
    ),
    caption: [The main file of the document.],
  ) <code-main-file>
]
```

#### **== Main Content** `<appendix-main-content>`

In `@code-content` below is displayed the actual Typst content of the document.

```
#[
  #show figure: set block(breakable: true)
  #figure(
    raw(
      read("../content/content.typ"),
      lang: "typst",
      block: true,
    ),
    caption: [The content of the document.],
  ) <code-content>
]
```

**== Appendix Content** <appendix-appendix-content>

```
#[  
#show figure: set block(breakable: true)  
#figure(  
  raw(  
    read("appendix.typ"),  
    lang: "typst",  
    block: true,  
  ),  
  caption: [The content of the appendix.],  
) <code-appendix>  
]
```

**= Another Appendix**

**== A Subsection**

Something written.

**== Another Subsection**

Something else written.

**= Again Another Appendix**

**== Again A Subsection**

Something written.

**== Another Subsection Again**

Something else written.

# **Appendix B**

## **Another Appendix**

### **B.1. A Subsection**

Something written.

### **B.2. Another Subsection**

Something else written.

# **Appendix C**

## **Again Another Appendix**

### **C.1. Again A Subsection**

Something written.

### **C.2. Another Subsection Again**

Something else written.