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Norwegian University of  
Science and Technology

Title

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## Abstract

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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And after the second paragraph follows the third paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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## Preface

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# List of Symbols

$A_B^C$  A dummy symbol.





# List of Acronyms

**DNS** Domain Name System.

**NTNU** Norwegian University of Science and Technology.

**TTL** Time to live.



# Chapter 1

## Example

Here is an example of how to use acronyms such as Norwegian University of Science and Technology (NTNU). The second time only NTNU is shown and if there were several you would write NTNUs. And here is an example<sup>1</sup> of citation [NNYY].

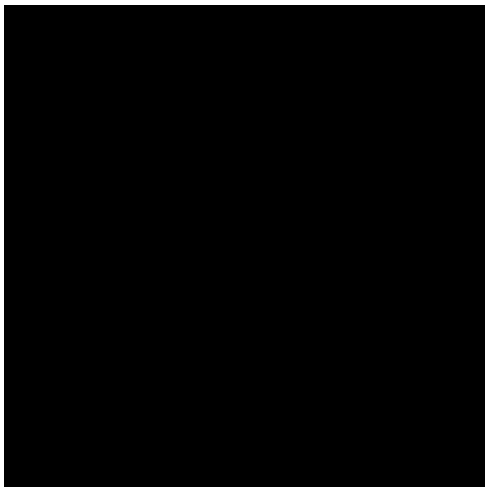
This is the second paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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<sup>1</sup>A footnote



**Figure 1.1:** A figure

This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

## 1.1 First section

### 1.1.1 First subsection with some *Math* symbol

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

- item1
- item2
- ...

### 1.1.2 Mathematics

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place.  $\sin^2(\alpha) + \cos^2(\beta) = 1$ . If you read this text, you will get no information  $E = mc^2$ . Really? Is there no information? Is there a

**Table 1.1:** A table

a	b	c	d	e
f	g	h	i	j
k	l	m	n	o
p	q	r	s	t
u	v	w	x	y
z	æ	ø	å	

difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look.  $\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{ab}$ . This text should contain all letters of the alphabet and it should be written in of the original language.  $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$ . There is no need for special content, but the length of words should match the language.  $a \sqrt[n]{b} = \sqrt[n]{a^n b}$ .

**Proposition 1.1.** *A proposition... (similar environments include: theorem, corollary, conjecture, lemma)*

*Proof.* And its proof. □

### 1.1.3 Source code example

---

**Algorithm 1.1** The Hello World! program in Java.

---

```
class HelloWorldApp {
    public static void main(String[] args) {
        //Display the string
        System.out.println("Hello World!");
    }
}
```

---

You can refer to figures using the predefined command like Figure 1.1, to pages like page 2, to tables like Table 1.1, to chapters like Chapter 1 and to sections like Section 1.1 and you may define similar commands to refer to proposition, algorithms etc.



# Chapter 2

## DNS Overview

Domain Name System (DNS) is an important protocol for the internet. It is mostly used to translate a domain name to an IP address which the network use to route http traffic. This type of lookup receive an 'A' record if the IP is an ipv4 address and 'AAAA' if it's an ipv6 address. 'CNAME' is also a much used response. it returns the correct domain name for the 'A' lookup, e.g. if you want to go to `aftenposten.no`, you could write `ap.no` the DNS then respond with a CNAME response containing `aftenposten.no` which automatically trigger a new request for `aftenposten.no` which give an 'A' response containing the ipv4 address. There are over 30 different record types in the DNS. Every one has their different purpose and therefore different maximum size on the payload. DNS mostly use UDP on port 53, but could also use TCP on the same port. TCP is used when the payload is over 512 bytes or if there is a zone transfer.

DNS is build as a hierarchical system where each level sends you along until you have reached the correct server. The internet has 13 root servers, and a lookup in the system is backwards. The easiest way to explain this is with an example. If you request `some.test.example.com` the first request will be to the root server which will look up the IP-address of the server that controls the `.com` domain. Next the `.com` server looks up who controls the `example.com` domain, and the `example.com` server finds the DNS server of `test.example.com`. At last the `test.example.com` DNS server returns the IP-address of `some.test.example.com`. Since this process takes a long time, most responses has a Time to live (TTL) which is how long the router should use the given IP-address as a response to requests for that domain.

[Far13]





# References

- [Far13] Greg Farnham. Detecting dns tunneling. *InfoSec Reading Room*, 2013.
- [NNYY] Firstname 1 Name1 and Firstname2 Name2. A dummy title. *A Fake Journal*, 1(1):000–000, June YYYY.