Title

Subtitle

Batman, Deadpool & Spiderman
Computer Science, DAT-x-xx, 2023

Semester Project

This report is typeset using the LaTeX system.

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AALBORG UNIVERSITET
STUDENTERRAPPORT

Titel:
Titel

Tema:
Tema

Projektperiode:
Forårs/efterårssemestret 2023

Projektgruppe:
CS-xx-DAT-x-xx

Deltagere:
Batman
Deadpool
Spiderman

Vejleder:
Bruce Wayne

Oplagstal: 1

Sidetal: 9

Afleveringsdato:
15. oktober 2023

Abstract:
Dansk Resumé

Department of Computer Science
Aalborg University
https://www.cs.aau.dk

AALBORG UNIVERSITY
STUDENT REPORT

Title:
Title

Abstract:
English abstract

Theme:
Theme

Project Period:
Spring/fall semester 2023

Project Group:
CS-xx-DAT-x-xx

Participants:
Batman
Deadpool
Spiderman

Supervisor:
Bruce Wayne

Copies: 1

Number of Pages: 9

Date of Completion:
October 15, 2023

Contents

Introduction

Hello. This is the introduction.

Chapter 1

Problem Analysis

This is the problem analysis, where we will analyze the problem. [1] Find out more in Appendix A.

1.1 Problem Statement

Oh my, here is the problem statement.

> *Using the limited knowledge we have, and the tools we have at our disposal, how can we solve this problem?*

Appendix A

Examples

In this appendix, some examples environments are shown

A.1 Tables

Inserting a table with values, like in Table A.1.

Størrelse	$O(n^2)$	$O(n!)$
2	4	2
3	9	6
4	16	24
5	25	120
10	100	3628800
15	225	$\approx 1.30767 \times 10^{12}$

Table A.1: Comparing the growth of $O(n^2)$ and $O(n!)$, as n increases.

A.2 Listings

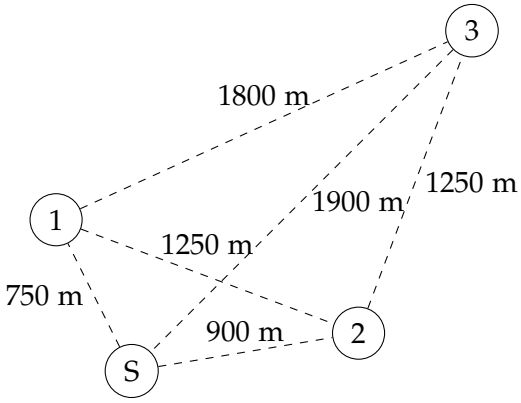
We can use the listing float for code, as seen in Listing A.1.

```
fn main() -> i32 {
    !println("Hello World!");
    return 0;
}
```

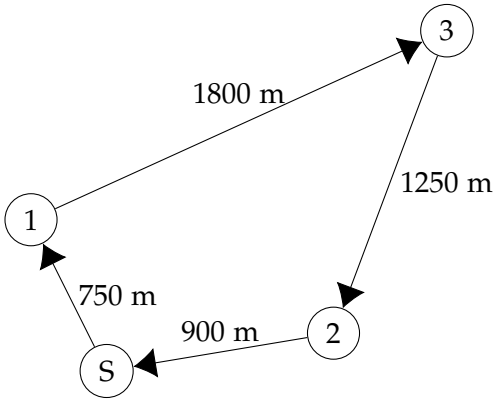
Listing A.1: Styling of Rust code, defined in the preamble.

A.3 Subfigures

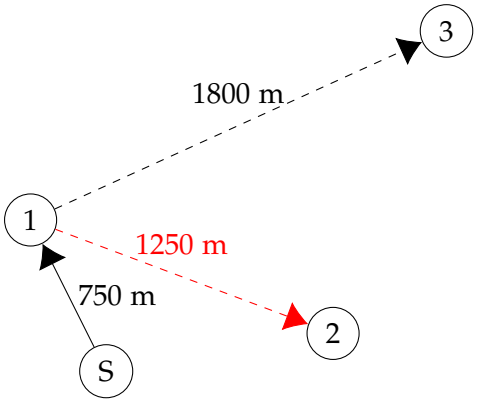
It's possible to "nest" figures



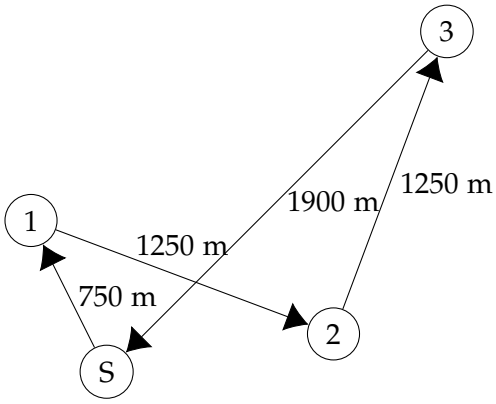
(a) The distance between each node in meters. 1, 2 and 3 are nodes we have to visit exactly once and S is both the start and end node.



(b) The most optimal route to take, in order to achieve the shortest possible distance. Total distance of 4700m.



(c) Nearest Neighbor will not find the shortest route. After choosing the edge $c_{S,1}$, the edge $c_{1,2}$ will be the one with the lowest weight and therefore be chosen.



(d) The full route taken, when using Nearest Neighbor, as a result of A.1c. Total distance of 5150m.

Figure A.1: An example of Nearest Neighbor not always finding the shortest route. The dashed lines show the distance between each node, the dashed arrows show the possible edges we can take, the arrows show the route we have taken and the red node is the current location. In this case, the shortest route has a total distance of 4700m, but with Nearest Neighbor the distance is 5150m.

A.4 Examples

If you wish to showcase an example, it can be done like this:

> **Example A.1**
> I am an example. To show that $x^2 + y^2 = z^2$.

A.5 Algorithms

An alogrithm environment, based on the `clrscode3e` package, which is used in the book *Introduction to Algorithms* by Cormen et al. [2].

Algorithm 1 Example of pseudocode (codebox) in an algorithm float.

INSERTION-SORT(A)

```
1  for j = 2 to A.length
2      key = A[j]
3      // Insert A[j] into the sorted sequence A[1..j-1].
4      i = j - 1
5      while i > 0 and A[i] > key
6          A[i+1] = A[i]
7          i = i - 1
8      A[i+1] = key
```

References

[1] Jens Tinggaard. *veri gud, yes*. 2023. URL: https://t1ng.dk (visited on 12/31/2023).

[2] Thomas Cormen, Charles Leiserson, Ronald Rivest, and Clifford Stein. *Introduction to Algorithms*. 4th ed. MIT Press Ltd, 2022. ISBN: 9780262046305.