My Project

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1 INF205 Paths in labelled graphs **1**

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Chapter 1

INF205 Paths in labelled graphs

1.0.0.1 Programming project in INF205 Resource-efficient programming at NMBU

The point of the project is to take in a labelled graph *g* and two sequences *p* and *q* of edge labels and check if there exist a path *p* and a path *q* that contains the same start node and end node.

1.0.1 Run the full program

To run the full program you go into the `src`-folder and type *make* in the terminal.

First the makefile will go into the `directed-graph`-folder and runs the `makefile` for this directory. This makefile will run `run-graph.cpp` which contains code from run-graph.h graph.h, query.h and graph-benchmark.h

After the `makefile` from `directed-graph` is ran, the `makefile` in `src` will run the `main.cpp` which contains functions form comparing-paths.h.

1.0.2 Benchmark run-time

The run-time has been tested on `run-graph.cpp` and `directed-graph`.

The run-time for run-graph.cpp is tested in `time-run-graph.cpp` in `src/directed-graph`. The time is written to `TimeRunGraph.dat` in `src/results`.

The run-time for `comparing-paths.cpp` is tested in `time-comparing-paths.cpp` in `src`. The time is written to `TimeComparingPaths1.dat` and `TimeComparingPaths2.dat` in `src/results`.

1.0.3 Plot run-time

The results of benchmarking the run-time is read by `plot_timing_inf205.py`. The mean of the time is calculated and then plotted.

1.1 The code

1.1.0.0.1 config

1.1.0.0.2 README.md

1.1.1 src

folder containing

1.1.1.0.1 main.cpp main code to run everything

1.1.1.0.2 comparing-paths.cpp compares the path

1.1.1.0.3 time-comparing-paths.cpp measures the run time for comparing-paths.cpp

1.1.1.1 results

folder containing results of everything

- the different files

1.1.1.2 directed-graph

folder containing

1.1.1.2.1 run-graph.cpp ...

1.1.1.2.2 time-run-graph.cpp ...

1.1.1.2.3 graph.cpp ...

1.1.1.2.4 query.cpp ...

1.1.1.2.5 graph-benchmark.cpp ...