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Parallel and Distributed Computing submissions

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Part I

First part

Chapter 1

Prolusion

1.1 Goal

This document provides a comprehensive overview of a project developed in C, consisting of multiple modules delivered in incremental phases. The purpose of the project is to experiment parallel computing techniques and occasionally exploiting High Performance Computing.

1.2 Environment

The project was entirely developed on a macOS system with the help of Xcode IDE. Of course, this will mainly impact the build process.

1.3 Project directory layout

The structure of the project's root directory is outlined below.

```
parallel-distributed-computing/
├── common/
├── hpc/
│   ├── gemm/
│   ├── matmatblock/
│   ├── matmatdist/
│   └── matmatthread/
├── laplace/
├── maxsum/
├── ringsum/
└── parallel-distributed-computing.entitlements
```

`common` package serves as a library of utility functions designed to support and be reused by various modules across the project.

The remaining directories represent the individual project modules, which constitute the deliverables of the project. Under each module the structure is a standard one:

```
<module>/
├── build/
│   ├── deploy-cluster.pbs
│   └── Makefile[.gcc]
├── src/
│   ├── <module>/
│   └── main.c
├── config.sh
└── run.sh
```

Most parts of the `main.c` files are provided by the project supervisor.

1.4 Build

The main compiler of this project is Clang.

1.4.1 Xcode

1.5 Figures

1.5.1 Option `inkscape-latex`

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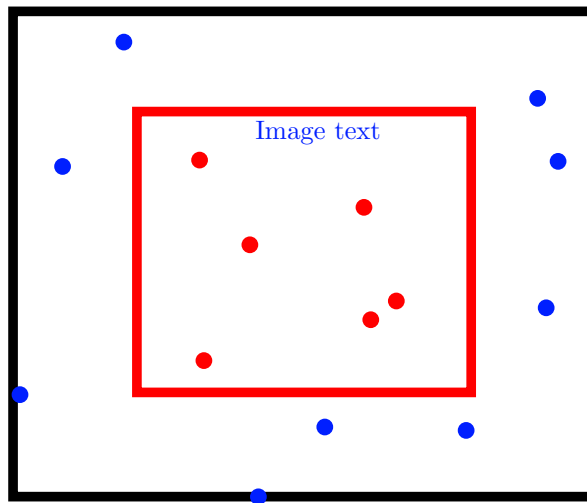


Figure 1.1: *True inkscape-latex option*

This is an imported SVG without \LaTeX Embedded text.

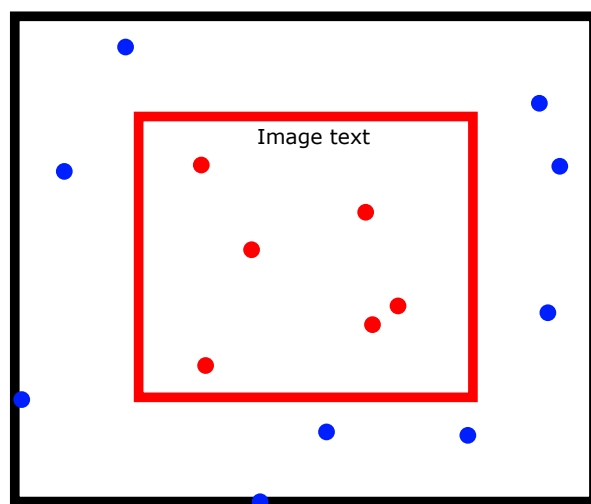


Figure 1.2: *False inkscape latex option*

Glossary

bug Possibile causa di una failure di un software. 3

Acronyms

HPC High Performance Computing 3

IDE Integrated Development Environment 3