High Performance Computing with Python

Final Report

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1

Chapter 1

This is an example of a citation [1]. The corresponding paper can be found in the bibliography section at the end of this document.

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Example of normal equation

$$f_i(\mathbf{x}_j + \mathbf{c}_i \cdot \Delta t, t + \Delta t) = f_i(\mathbf{x}_j, t) - \omega \left(f_i(\mathbf{x}_j, t) - f_i^{\mathrm{eq}}(\mathbf{x}_j, t) \right) \tag{1.1}$$

Example of aligned equation:

$$\rho(\mathbf{x}_j, t) = \sum_i f_i(\mathbf{x}_j, t) \tag{1.2}$$

$$\mathbf{u}(\mathbf{x}_j, t) = \frac{1}{\rho(\mathbf{x}_j, t)} \sum_i \mathbf{c}_i f_i(\mathbf{x}_j, t) \tag{1.3}$$

1.1 section title

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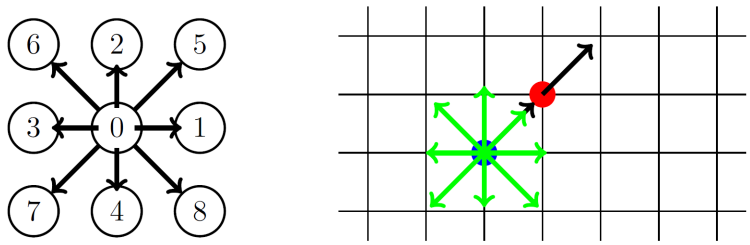
- Example of a list
- Example of a list
- Example of a list

2

Chapter 2



(a) (b)

Figure 2.1: example figure

2.1 Section title

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Table 2.1: Sample table

S. No.	Column#1	Column#2	Column#3
1	50	837	970
2	47	877	230
3	31	25	415
4	35	144	2356
5	45	300	556

2.2 Code listing

here we provide a short example of code listing. For further information you can take look here:

`https://www.overleaf.com/learn/latex/code_listing`

This is just meant to used if you think that there is some relevant part of code to be shown. Please do not append your whole implementation in the report.

```
import numpy as np

def incmatrix(genl1,genl2):
    m = len(genl1)
    n = len(genl2)
    M = None # to become the incidence matrix
    VT = np.zeros((n*m,1), int)  # dummy variable
```

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Lorem ipsum list:

Bibliography

[1] Krüger Timm, H Kusumaatmaja, A Kuzmin, O Shardt, G Silva, and E Viggen. *The lattice Boltzmann method: principles and practice.* Springer: Berlin, Germany, 2016.