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The Template for Assignment

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by

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Abstract

Write abstract here.

Key Words: Template; Rice; USTC

Acknowledgement

Write acknowledgments here.

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Chapter 1

Introduction

1.1 Background

Please feel free to use this template for your reports. Footnote example 1

1.2 Problem

Problem here.

Problem 1

Question begins here.

Solution Solution begins here

Problem 2

Question begins here.

Solution Solution begins here

1.3 Cite

There are two ways to cite the references, and the first way (Nakano, 1923; Honda, 1957) is showing here. The second way can be done in Honda (1957).

¹Please feel free to use this template for your reports.

Chapter 2

Discussion

2.1 Figure

You can use tikz package to plot like figure 2.1.

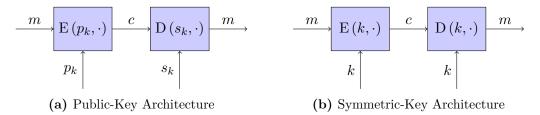


Figure. 2.1: Public-Key vs. Symmetric-Key: Architecture

You can also insert a figure like figure 2.2.

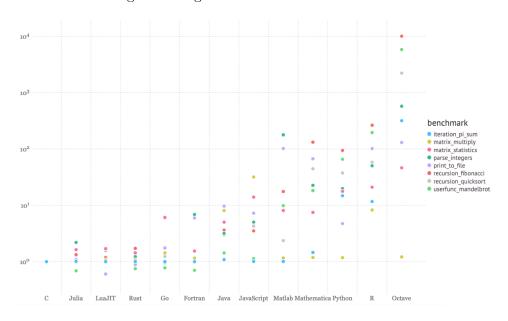


Figure. 2.2: Julia benchmarks from Julia website

2.2 Table

Here are a table example.

Table 2.1: Ambient noise package

Package	Language	Multiprocessing	Multithreading	GPU
SeisNoise.jl	Julia	\checkmark	✓	\checkmark
NoisePy	Python	\checkmark		\checkmark
Mirmex	C++		\checkmark	\checkmark
CC-FJ	Python with C++		\checkmark	
NoiseCorr	MATLAB	\checkmark		

2.3 Algorithm

Here are an algorithm example.

```
Algorithm 1: MCMTpy algorithm to sample proposal distribution \pi_{post}(m|d_{obs})
```

```
1 Choose initial m_0, S(m_0);
 2 Compute \pi_{post}(m|d_{obs});
 3 for k = 0, ..., N - 1 do
        if k < N_k then
 4
            Define S(m) = S_{time}(m);
 \mathbf{5}
 6
        else
            if k < N_k + M_{mag} then
 7
               Estimate M_0 with formula XX;
 8
            \mathbf{end}
 9
            Define S(m) = S_{time}(m);
10
11
        Draw sample y with random walk with formula 17;
12
        Compute \pi_{post}(y|d_{obs});
13
        Compute \beta(m_k, m_{k+1}) = min \left\{ \frac{\pi_{post}(m_{k+1}|d_{obs})}{\pi_{post}(m_k|d_{obs})}, 1 \right\};
14
        Draw random number u \sim u([0,1]);
15
        if u < \beta(m_k, m_{k+1}) then
16
            Accept: set m_{k+1} = y;
17
18
            Reject: set m_{k+1} = m_k;
19
        end
21 end
```

2.4 Code

Insert Python code showing below.

```
import numpy as np
import numpy as np
annotation here.

# Annotation here.
def main():
    for i in range(0,10,1):
        if i == 1:
            print("Hello world")

# Annotation here.
if __name__ == "__main__":
        main()
```

Insert Python code from files.

```
#!/usr/bin/env python3
2 # -*- coding: utf-8 -*-
4 Created on Sun Apr 18 17:24:43 2021
6 @author: Fu Yin (yinfu@mail.ustc.edu.cn) at USTC
  import os
  def readme(project_root):
       0.000
12
      read 'README.rst'
13
14
      README_file = os.path.join(project_root, 'README.rst')
15
      with open(README_file) as f:
           return f.read()
17
19 if __name__ == "__main__":
      pass
20
```

Bibliography

Hirokichi Honda. The mechanism of the earthquakes. Sci. Rep., Tohoku Univ., (9):1–46, 1957.

H Nakano. Notes on the nature of the forces which give to the earthquake motions. seismol. *Bull.*, *CentralMeteorologicalObs.*, *Japan*, 1(92):120, 1923.

Appendix-1

Here are the Appendix-1.