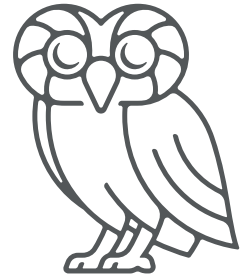




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The Template for Assignment

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by

Fu Yin

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 example¹

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.

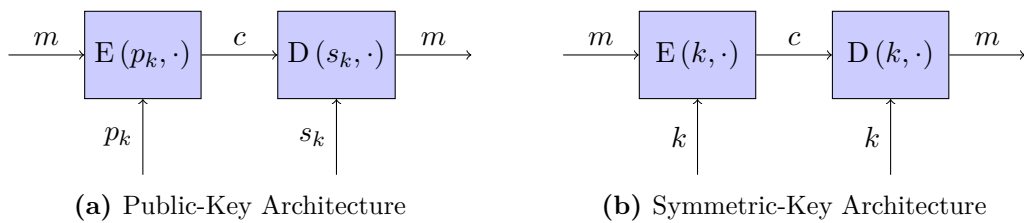


Figure. 2.1: Public-Key vs. Symmetric-Key: Architecture

You can also insert a figure like figure 2.2.

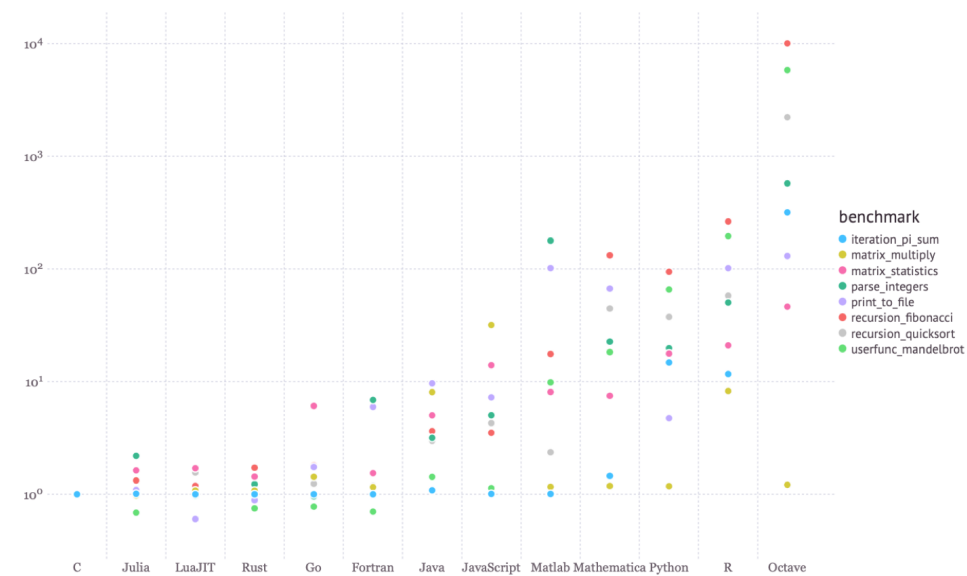


Figure. 2.2: Julia benchmarks from [Julia website](#)

2.2 Table

Here are a table example.

Table 2.1: Ambient noise package

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

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

2.4 Code

Insert Python code showing below.

```
1 import numpy as np
2 """
3     Annotation here.
4 """
5 # Annotation here.
6 def main():
7     for i in range(0,10,1):
8         if i == 1:
9             print("Hello world")
10
11 # Annotation here.
12 if __name__ == "__main__":
13     main()
```

Insert Python code from files.

```
1 #!/usr/bin/env python3
2 # -*- coding: utf-8 -*-
3 """
4 Created on Sun Apr 18 17:24:43 2021
5
6 @author: Fu Yin (yinfu@mail.ustc.edu.cn) at USTC
7 """
8
9 import os
10
11 def readme(project_root):
12     """
13     read 'README.rst'
14     """
15     README_file = os.path.join(project_root, 'README.rst')
16     with open(README_file) as f:
17         return f.read()
18
19 if __name__ == "__main__":
20     pass
```

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.