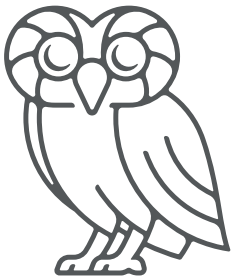
RICE



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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).

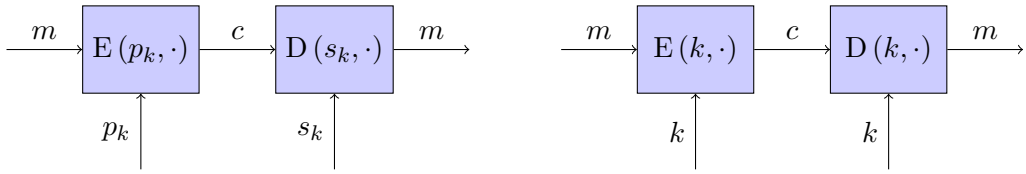
[1] Please feel free to use this template for your reports.

Chapter 2

Discussion

2.1 Figure

You can use tikz package to plot like figure 2.1.



(a) Public-Key Architecture **(b)** Symmetric-Key Architecture

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

You can also insert a figure like figure 2.2.

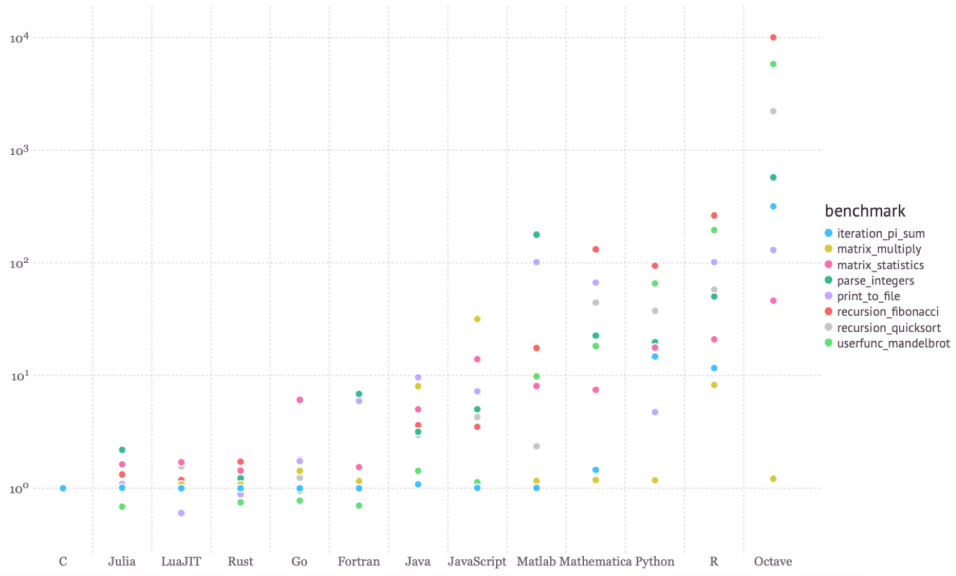


Figure. 2.2: Julia benchmarks from Julia website

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 $\pi_{post}(m|d_{obs})$

Choose initial m_0,$S(m_0)$;
Compute $\pi_{post}(m|d_{obs})$;
for $k = 0, \ldots, N-1$ **do**
  if $k < N_k$ **then**
    Define $S(m) = S_{time}(m)$;
  else
    if $k < N_k + M_{mag}$ **then**
      Estimate M_0 with formula XX;
    end
    Define $S(m) = S_{time}(m)$;
  end
  Draw sample y with random walk with formula 17;
  Compute $\pi_{post}(y|d_{obs})$;
  Compute $\beta(m_k, m_{k+1}) = min\left\{\frac{\pi_{post}(m_{k+1}|d_{obs})}{\pi_{post}(m_k|d_{obs})}, 1\right\}$;
  Draw random number $u \sim u([0, 1])$;
  if $u < \beta(m_k, m_{k+1})$ **then**
    Accept: set $m_{k+1} = y$;
  else
    Reject: set $m_{k+1} = m_k$;
  end
end

2.4 Code

Insert Python code from files.

```python
#!/usr/bin/env python3
# -*- coding: utf-8 -*-
"""
Created on Sun Apr 18 17:24:43 2021

@author: Fu Yin (yinfu@mail.ustc.edu.cn) at USTC
"""

import os

def readme(project_root):
    """
    read 'README.rst'
    """
    README_file = os.path.join(project_root, 'README.rst')
    with open(README_file) as f:
        return f.read()

if __name__ == "__main__":
    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.