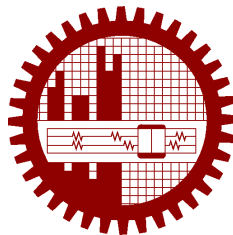


M.Sc. Engg. (CSE) Thesis

**Title of Your Thesis We Tested a Very Very Long Title to  
See What Happens in This Case Then We Made it Longer  
and We Can Make It Even Longer Than Longer**

Submitted by  
Candidate Student Name  
1015052071

Supervised by  
Dr. Supervisor Name Lastname



Submitted to  
**Department of Computer Science and Engineering**  
**Bangladesh University of Engineering and Technology**  
Dhaka, Bangladesh

in partial fulfillment of the requirements for the degree of  
Master of Science in Computer Science and Engineering

January 2019

## **Candidate's Declaration**

I, do, hereby, certify that the work presented in this thesis, titled, “Title of Your Thesis We Tested a Very Very Long Title to See What Happens in This Case Then We Made it Longer and We Can Make It Even Longer Than Longer”, is the outcome of the investigation and research carried out by me under the supervision of Dr. Supervisor Name Lastname, Supervisor Designation, Department of CSE, BUET.

I also declare that neither this thesis nor any part thereof has been submitted anywhere else for the award of any degree, diploma or other qualifications.

---

Candidate Student Name

1015052071

The thesis titled “**Title of Your Thesis We Tested a Very Very Long Title to See What Happens in This Case Then We Made it Longer and We Can Make It Even Longer Than Longer**”, submitted by Candidate Student Name, Student ID 1015052071, Session October 2015, to the Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology, has been accepted as satisfactory in partial fulfilment of the requirements for the degree of Master of Science in Computer Science and Engineering and approved as to its style and contents on January 15, 2019.

### **Board of Examiners**

1. \_\_\_\_\_  
 Dr. Supervisor Name Lastname  
 Supervisor Designation  
 Department of CSE, BUET, Dhaka  
Chairman  
(Supervisor)
  
2. \_\_\_\_\_  
 Dr. Md. Mostofa Akbar  
 Professor and Head  
 Department of CSE, BUET, Dhaka  
Member  
(Ex-Officio)
  
3. \_\_\_\_\_  
 Dr. M. Kaykobad  
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 Department of CSE, BUET, Dhaka  
Member
  
4. \_\_\_\_\_  
 Dr. Abu Sayed Md. Latiful Hoque  
 Professor  
 Department of CSE, BUET, Dhaka  
Member
  
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 Dr. Honorable External Examiner  
 Professor  
 Department of CSE  
 University of External, Dhaka  
Member  
(External)

## **Acknowledgement**

I am thankful to  
Finally,

Dhaka  
January 15, 2019

Candidate Student Name  
1015052071

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## Abstract

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End of dummy text.

# Chapter 1

## Introduction

This chapter is for your introduction.

### 1.1 Cross Referencing

We have incorporated the `\cref` or `\Cref` command from `cleveref` package in this system. This will automatically insert words like Figure, Table etc. in your text.

See these examples:

- Figure 1.1 is a sample figure.
- Table 1.1 is a table.
- Section 2.1 in Chapter 2 shows some examples of citations.

### 1.2 How to Write a Section

This is for writing section.

### 1.3 How to Add Table and Figures

You should refer a figure as, “Figure 1.1 is a sample figure”.

Then we applied same test cases to our modified algorithm i.e. the heuristic algorithm with our new operation *Block Reversal*. The performance is shown in Table 1.1.

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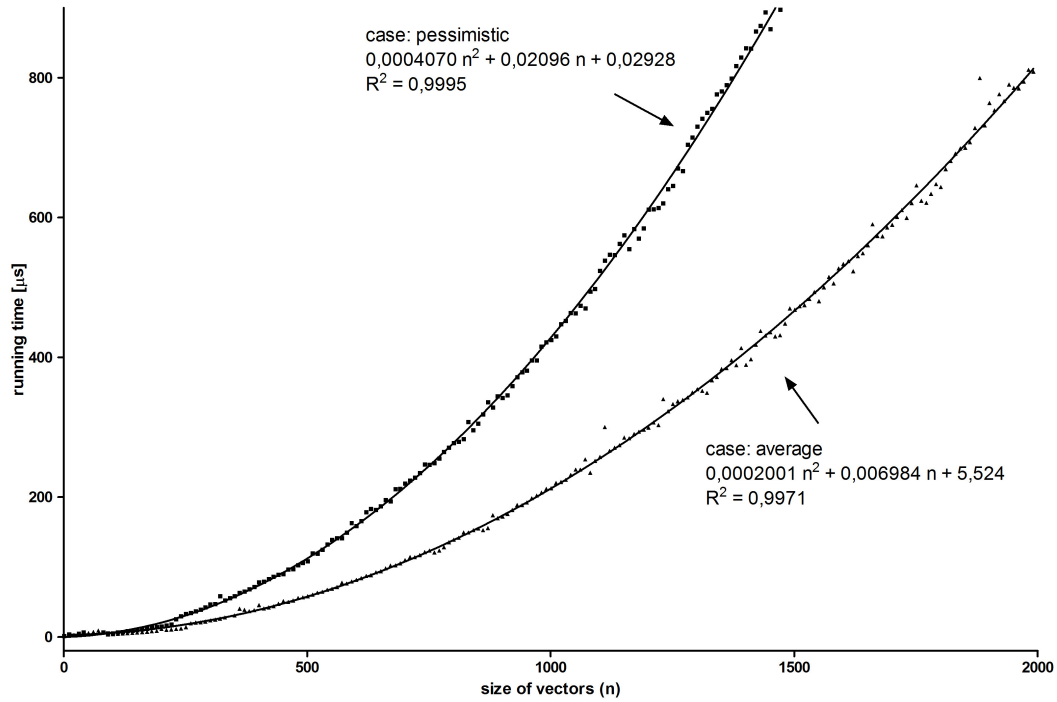


Figure 1.1: This is a sample figure.

Table 1.1: Performance table of *Block reversal* in a heuristic algorithm

$\alpha$	$\alpha n$	Test Cases											Average # of calculated operation
		1	2	3	4	5	6	7	8	9	10	11	
0.1	2	2	2	2	2	2	2	2	2	2	2	2	2
0.2	4	4	4	5	2	4	4	4	4	2	4	4	3.73
0.3	6	5	6	6	6	6	7	6	5	6	6	6	5.91
0.4	8	7	8	5	6	7	6	6	7	8	8	7	6.82
0.5	10	9	10	6	12	10	8	10	10	7	7	10	9
0.6	12	9	12	16	10	12	12	9	11	12	9	12	11.27
0.7	14	13	7	18	15	14	8	13	11	13	13	14	12.64
0.8	16	10	17	14	16	13	16	13	11	13	17	13	13.91
0.9	18	14	16	15	12	15	11	15	11	15	12	12	13.45
1	20	18	11	13	11	13	15	17	17	13	18	12	14.36

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# Chapter 2

## Citation Examples

In this chapter we show how we can cite the references.

### 2.1 See the Citations

As discussed by authors in [1–3] we can further show how this affects us. Moreover [4–11] can be examples for the previous works. Among these [10, 12–17] are the prominent ones. Also you can take a look at [18–25].

# Chapter 3

## Another Chapter

### 3.1 A Section

Some text.

#### 3.1.1 This is a Subsection

And some more.

##### **This is a Subsubsection**

Yet some more.

### 3.2 And Another Section

Here are some dummy texts.

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# **Chapter 4**

## **Index Creation**

### **4.1 BUET**

Bangladesh University of Engineering and Technology, abbreviated as BUET, is one of the most prestigious institutions for higher studies in the country. About 5500 students are pursuing undergraduate and postgraduate studies in engineering, architecture, planning and science in this institution. At present, BUET has sixteen teaching departments under five faculties and it has three institutes. Every year the intake of undergraduate students is around 900, while the intake of graduate students in Master's and PhD programs is around 1000. A total of about five hundred teachers are teaching in these departments and institutes. There are additional teaching posts like Dr. Rashid Professor, Professor Emeritus and Supernumerary Professors.

### **4.2 Campus**

The BUET campus is in the heart of Dhaka — the capital city of Bangladesh. It has a compact campus with halls of residence within walking distances of the academic buildings. The physical expansion of the University over the last three decades has been impressive with construction of new academic buildings, auditorium complex, halls of residence, etc.

### **4.3 History**

BUET is the oldest institution for the study of Engineering and Architecture in Bangladesh. The history of this institution dates back to the days of Dhaka Survey School which was established at Nalgola, in Old Dhaka in 1876 to train Surveyors for the then Government of Bengal of British India. As the years passed, the Survey School became the Ahsanullah School of Engineering offering three-year diploma courses in Civil, Electrical and Mechanical Engineering.

In recognition of the generous financial contribution from the then Nawab of Dhaka, it was named after his father Khawja Ahsanullah. It moved to its present premises in 1912. In 1947, the School was upgraded to Ahsanullah Engineering College as a Faculty of Engineering under the University of Dhaka, offering four-year bachelor's courses in Civil, Electrical, Mechanical, Chemical and Metallurgical Engineering. In order to create facilities for postgraduate studies and research, Ahsanullah Engineering College was upgraded to the status of a University in 1962 and was named East Pakistan University of Engineering and Technology. After the War of Liberation in 1971, Bangladesh became an independent state and the university was renamed as the Bangladesh University of Engineering and Technology.

## 4.4 Students

Till today, it has produced around 25,000 graduates in different branches of engineering and architecture, and has established a good reputation all over the world for the quality of its graduates, many of whom have excelled in their profession in different parts of the globe. It was able to attract students from countries like India, Nepal, Iran, Jordan, Malaysia, Sri Lanka, Pakistan and Palestine.

## 4.5 Departments

Both Undergraduate and Postgraduate studies and research are now among the primary functions of the University. Eleven departments under five faculties offer Bachelor's Degrees, while most of the departments and institutes offer Master's Degrees and some of the departments have Ph.D. programs. In addition to its own research programs, the university undertakes research programs sponsored by outside organizations like European Union, UNO, Commonwealth, UGC, etc. The expertise of the University teachers and the laboratory facilities of the University are also utilized to solve problems and to provide up-to-date engineering and technological knowledge to the various organizations of the country.

# Chapter 5

## $k$ -safe Labeling of Petersen Graph

In 1898, Petersen produced a trivalent graph with no leaves, now called the Petersen graph [\[26\]](#). In this chapter we study  $k$ -safe labeling for the Petersen graph. We also give upper bound for the span of the Petersen graph. We provide necessary proof for the upper bound.

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# Appendix A

## Algorithms

### A.1 Sample Algorithm

In Algorithm 1 we show how to calculate  $y = x^n$ .

---

**Algorithm 1** Calculate  $y = x^n$ 

---

**Require:**  $n \geq 0 \vee x \neq 0$

**Ensure:**  $y = x^n$

$y \leftarrow 1$

**if**  $n < 0$  **then**

$X \leftarrow 1/x$

$N \leftarrow -n$

**else**

$X \leftarrow x$

$N \leftarrow n$

**end if**

**while**  $N \neq 0$  **do**

**if**  $N$  is even **then**

$X \leftarrow X \times X$

$N \leftarrow N/2$

**else**  $\{N \text{ is odd}\}$

$y \leftarrow y \times X$

$N \leftarrow N - 1$

**end if**

**end while**

---

# Appendix B

## Codes

### B.1 Sample Code

We use this code to find out...

```
1 #include <stdio.h>
2 int Fibonacci(int);
3
4 main()
5 {
6     int n, i = 0, c;
7
8     printf("Enter_the_value_of_n:_");
9     scanf("%d",&n);
10
11     printf("\nFibonacci_series\n");
12
13     for (c = 1 ; c <= n ; c++)
14     {
15         printf("%d\n", Fibonacci(i));
16         i++;
17     }
18
19     return 0;
20 }
21
22 int Fibonacci(int n)
23 {
```

```
24  if (n == 0)
25      return 0;
26  else if (n == 1)
27      return 1;
28  else
29      return (Fibonacci(n-1) + Fibonacci(n-2));
30 }
```

## B.2 Another Sample Code

```
1 SELECT associations2.object_id, associations2.term_id,
2      associations2.cat_ID, associations2.term_taxonomy_id
3 FROM (SELECT objects_tags.object_id, objects_tags.term_id,
4      wp_cb_tags2cats.cat_ID, categories.term_taxonomy_id
5 FROM (SELECT wp_term_relationships.object_id,
6      wp_term_taxonomy.term_id, wp_term_taxonomy.term_taxonomy_id
7 FROM wp_term_relationships
8 LEFT JOIN wp_term_taxonomy ON
9      wp_term_relationships.term_taxonomy_id =
10     wp_term_taxonomy.term_taxonomy_id
11 ORDER BY object_id ASC, term_id ASC)
12 AS objects_tags
13 LEFT JOIN wp_cb_tags2cats ON objects_tags.term_id =
14     wp_cb_tags2cats.tag_ID
15 LEFT JOIN (SELECT wp_term_relationships.object_id,
16     wp_term_taxonomy.term_id as cat_ID,
17     wp_term_taxonomy.term_taxonomy_id
18 FROM wp_term_relationships
19 LEFT JOIN wp_term_taxonomy ON
20     wp_term_relationships.term_taxonomy_id =
21     wp_term_taxonomy.term_taxonomy_id
22 WHERE wp_term_taxonomy.taxonomy = 'category'
23 GROUP BY object_id, cat_ID, term_taxonomy_id
24 ORDER BY object_id, cat_ID, term_taxonomy_id)
25 AS categories on wp_cb_tags2cats.cat_ID = categories.term_id
26 WHERE objects_tags.term_id = wp_cb_tags2cats.tag_ID
27 GROUP BY object_id, term_id, cat_ID, term_taxonomy_id
28 ORDER BY object_id ASC, term_id ASC, cat_ID ASC)
29 AS associations2
```

```
30 LEFT JOIN categories ON associations2.object_id =  
31     categories.object_id  
32 WHERE associations2.cat_ID <> categories.cat_ID  
33 GROUP BY object_id, term_id, cat_ID, term_taxonomy_id  
34 ORDER BY object_id, term_id, cat_ID, term_taxonomy_id
```

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