



**TRIBHUVAN UNIVERSITY  
INSTITUTE OF ENGINEERING  
PULCHOWK CAMPUS**

**HEADBALL - A GAME OF HEADERS**

**A COURSE PROJECT SUBMITTED TO THE DEPARTMENT OF  
ELECTRONICS AND COMPUTER ENGINEERING IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE PRACTICAL  
COURSE ON OBJECT ORIENTED PROGRAMMING [CT 451]**

**Submitted by:**

**Prajwol Pradhan (PUL076BEI023)**

**Rujal Acharya (PUL076BEI029)**

**Sanjay K.C. (PUL076BEI038)**

**Asmin Silwal (PUL076BEI040)**

**Submitted to:**

**Department of Electronics and Computer Engineering**

**Pulchowk Campus, Institute of Engineering,**

**Tribhuvan University**

**Lalitpur, Nepal**

**December, 2020**

# **ABSTRACT**

# **ACKNOWLEDGEMENTS**

# Contents

<b>ABSTRACT</b>	<b>i</b>
<b>ACKNOWLEDGEMENTS</b>	<b>ii</b>
<b>Contents</b>	<b>iv</b>
<b>1 INTRODUCTION</b>	<b>2</b>
1 Background and problem statements . . . . .	2
1.1 DUMMY . . . . .	2
2 Objectives . . . . .	3
3 Limitations . . . . .	3
4 Formatting guidelines . . . . .	3
<b>2 PROBLEM ANALYSIS</b>	<b>4</b>
1 Understanding the problem . . . . .	4
2 Input Requirements . . . . .	4
3 Output Requirements . . . . .	5
4 Processing Requirements . . . . .	5
5 Technical Feasibility . . . . .	5
<b>3 Review of Related Literatures</b>	<b>6</b>
<b>4 ALGORITHM DEVELOPMENT AND FLOWCHART</b>	<b>7</b>
1 Algorithm . . . . .	7
1.1 Algorithm for module x . . . . .	7
1.2 Algorithm for module y . . . . .	7
2 Flowchart . . . . .	7
2.1 Flowchart for module x . . . . .	7
2.2 Flowchart for module y . . . . .	7
3 UML . . . . .	7
3.1 Structural UML diagrams . . . . .	7
3.2 Behavioral UML diagrams . . . . .	7
<b>5 IMPLEMENTATION AND CODING</b>	<b>9</b>
1 Implementation . . . . .	9
2 Coding of the project . . . . .	9
<b>6 RESULTS AND DISCUSSION</b>	<b>10</b>

<b>7 CONCLUSIONS</b>	<b>11</b>
<b>REFERENCES</b>	<b>12</b>
<b>APPENDIX A</b>	<b>13</b>

# **LIST OF FIGURES**

## **LIST OF TABLES (IF ANY)**

# ABBREVIATIONS

- GUI: Graphical User Interface
- IOE: Institute of Engineering
- SFML: Simple and Fast Multimedia Library



# Chapter 1

## INTRODUCTION

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

### 1 Background and problem statements

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

#### 1.1 DUMMY

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

**2 Objectives**

**3 Limitations**

**4 Formatting guidelines**

# Chapter 2

## PROBLEM ANALYSIS

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

### 1 Understanding the problem

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

### 2 Input Requirements

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

### **3 Output Requirements**

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam lobortis facilisis sem. Nullam nec mi et neque pharetra sollicitudin. Praesent imperdiet mi nec ante. Donec ullamcorper, felis non sodales commodo, lectus velit ultrices augue, a dignissim nibh lectus placerat pede. Vivamus nunc nunc, molestie ut, ultricies vel, semper in, velit. Ut porttitor. Praesent in sapien. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Duis fringilla tristique neque. Sed interdum libero ut metus. Pellentesque placerat. Nam rutrum augue a leo. Morbi sed elit sit amet ante lobortis sollicitudin. Praesent blandit blandit mauris. Praesent lectus tellus, aliquet aliquam, luctus a, egestas a, turpis. Mauris lacinia lorem sit amet ipsum. Nunc quis urna dictum turpis accumsan semper.

### **4 Processing Requirements**

### **5 Technical Feasibility**

## **Chapter 3**

### **Review of Related Literatures**

# **Chapter 4**

## **ALGORITHM DEVELOPMENT AND FLOWCHART**

### **1 Algorithm**

#### **1.1 Algorithm for module x**

#### **1.2 Algorithm for module y**

### **2 Flowchart**

#### **2.1 Flowchart for module x**

#### **2.2 Flowchart for module y**

### **3 UML**

In this section students are expected to draw and describe any of the following diagrams whenever applicable.

#### **3.1 Structural UML diagrams**

- Class diagram
- Package diagram
- Object diagram
- Component diagram
- Composite structure diagram
- Deployment diagram

#### **3.2 Behavioral UML diagrams**

- Activity diagram

- Sequence diagram
- Use case diagram
- State diagram
- Communication diagram
- Interaction overview diagram
- Timing diagram

## **Chapter 5**

# **IMPLEMENTATION AND CODING**

**1 Implementation**

**2 Coding of the project**



## **Chapter 6**

# **RESULTS AND DISCUSSION**

## **Chapter 7**

# **CONCLUSIONS**

## **REFERENCES**

## **APPENDIX A (Source Code)**