



اَوْنِيُوْرْسِيْتِي تِيْكْنُوْلُوْجِي مِيْنَارَا
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MEC 332

MECHANICAL ENGINEERING DESIGN

FINAL YEAR PROJECT

TITLE:

BOUCLE RACK

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In the name of Allah, the Most Gracious and Most Merciful. The praises to Allah, the Lord of the world, and the sequel are for those who keep their duty unto Him, further, here will be no hostility except against wrongdoers. Blessings and solutions be upon the most honourable Prophet and Messengers, His family all His disciples, and those who follow them in goodness until the Day of Judgement. Praises thanks to Allah, the Almighty, for His showers of blessings throughout our research and journey in completing this project report successfully within the time given.

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Due to the contagious outbreak of COVID – 19, we had to complete the project virtually and we were not able to produce a prototype of our project. Instead, we have successfully produced an animation and simulation of our product by using Solidworks, a Computer – Aided Design (CAD) Software. We went through so many hardships together and learnt so many new things while doing this project. Everything that seems impossible to do at first, were actually possible.

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ABSTRACT

Cycling is a trend nowadays, therefore bicycle rack has been chosen to be made for this project. Firstly, the bicycle rack is named as 'Boucle Rack. The word 'Boucle' comes from French. This bicycle rack is different from the others as it can be used by different types and sizes of bicycle. An adjustable tire holder with push – button mechanism is added to the rack in order for it function accordingly. The push – button mechanism will help the tire holder size to be adjusted according to the size of bicycle. Besides that, a self – locking system is also available. This self – locking system is not an automated system, the user will need to lock and unlock it themselves. The type of lock used is similar to door locks. It is added due to wanting to increase the safety factor of the rack when in use. Also, one (1) rack can be occupied by two (2) bicycles, which are one on the left and one on the right. Lastly, black vinyl coating cushion is chosen to be the finishing of this bicycle rack. The function is to protect the bicycle from any scratches or possible incident that might happen. From this project, we hope that this bicycle rack will be useful for everyone.

TABLE OF CONTENTS

ACKNOWLEDGEMEN.....	2
ABSTRACT.....	3
CHAPTER 1	6
1.0 INTRODUCTION	6
1.1 OVERVIEW OF THE PROJECT	6
1.2 DESIGN OBJECTIVES	6
1.3 SCOPE OF THE PROJECT	7
1.4 SIGNIFICANCE OF THE PROJECT	7
1.5 PROJECT PLANNING	8
CHAPTER 2	11
2.0 PROBLEM DEFINITION	11
2.1 PROBLEM STATEMENT	11
2.2 NEED IDENTIFICATION	12
2.3 CUSTOMER REQUIREMENT	13
2.4 PRODUCT DESIGN SPECIFICATION.....	19
CHAPTER 3	22
3.0 LITERATURE REVIEW	22
3.1 INFORMATION OF EXISTING PRODUCT	22
3.2 COMPARISON BETWEEN THE EXISTING PRODUCT.....	24
3.3 OPPORTUNITY FOR COMPETITIVE ADVANTAGE	25
CHAPTER 4	26
4.0 CONCEPT GENERATION AND EVALUATION	26
4.1 FEASIBLE CONCEPT.....	26
4.2 MORPHOLOGICAL ANALYSIS	27
4.3 CONCEPT EVALUATION	28
4.4 PUGH CHART	38
4.5 PUGH CHART ANALYSIS	38
CHAPTER 5	41
5.0 EMBODIMENT DESIGN.....	41
5.1 LAYOUT DESIGN	42

ENGINEERING CALCULATION	
5.2 ENGINEERING ANALYSIS	46
CHAPTER 6.....	49
6.0 DETAIL DESIGN	49
6.1. DETAIL DRAWING OF MANUFACTURED PART.....	49
6.2 ASSEMBLY DRAWING	73
6.3 EXPLODED DRAWING	74
6.4 BILL OF MATERIAL	75
6.5 COSTING EVALUATION.....	75
6.6 BREAK EVEN ANALYSIS	76
CHAPTER 7.....	78
7.0 PROTOTYPING	78
7.1 FABRICATING DETAIL.....	78
7.2 PRODUCT MANUAL.....	82
7.3 PRODUCT TESTING.....	84
CHAPTER 8.....	85
8.0 CONCLUSION AND RECOMMENDATION	85
8.1 CONCLUSION	85
8.2 RECOMMENDATION FOR FUTURE WORK.....	86
REFERENCES	