

UNIVERSITI TEKNOLOGI MARA

**ANALYSIS AND SIMULATION OF
CATAMARAN MINI HOUSEBOAT
DESIGN BY USING
COMPUTATIONAL FLUID
DYNAMIC (CFD)**

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ABSTRACT

Investigation of the effect of wave-induced motions on the performance and stability modification Mini houseboat, including the motions, total resistance, and water slamming. So, this project is about the design of Two-In-One-Mini Houseboat that might be suitable to be use for personal user for recreational. The mini houseboat can be used as a closed houseboat and can be use as open boat. The objective in this research is Computational Fluid Dynamics (CFD) simulation is to analyse fluid flow around the hull of the mini houseboat design and analyse the velocity, drag force, air resistance and water resistance to improve the performance of the design. The CFD simulation will be using the software ANSYS to visualize the simulation result. The result by doing the CFD on the project design will be more accurate and valid to be use on the design because software can calculate critical parameters and detect every algorithm with the simulation analyse design capabilities and performance. So, if the designed mini houseboat unbalances the simulation will show it. The reliability of the result from the CFD simulation to visualize the fluid flow and optimize the data for the velocity, resistance, drag force on the mini houseboat design to ensure the design suitable, safe, and worthwhile according to its purpose.

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TABLE OF CONTENTS

	Page
CONFIRMATION BY SUPERVISOR	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	xi
CHAPTER ONE : INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	3
1.3 Objectives	3
1.4 Scope of Work	3
1.5 Significance of Study	4
CHAPTER TWO : LITERATURE REVIEW	5
2.1 CONCEPT OF HOUSEBOAT	5
2.1 2.1.1 HULL	5
2.2 2.1.2 HULL MATERIAL	6
2.3 2.1.3 CANVAS	7
2.2 COMPUTATIONAL FLUID DYNAMICS (CFD)	9
CHAPTER THREE : METHODOLOGY	11
3.1 Introduction	11
3.1 FLOW CHART	11

3.2	DESIGNING	12
3.1.1	HULL COMPARISON	12
3.3	HAND DRAWING	13
3.4	MODELING	14
3.5	COMPUTATIONAL FLUID DYNAMICS (CFD)	16
3.5.1	SOLIDIFY THE HULL	16
3.5.2	BOUNDARY	18
3.5.3	MESHING	19
3.5.4	SET UP	22
3.5.5	SOLUTION	24
	CHAPTER FOUR : RESULTS AND DISCUSSION	25
4.1	Introduction	25
4.2	Residuals Graph	26
4.3	Volume Fraction	27
4.4	Dynamic Pressure	29
4.5	Kinetic Energy	31
4.6	Drag Force	33
	CHAPTER FIVE : CONCLUSION AND RECOMMENDATIONS	35
5.1	Conclusions	35
5.2	Recommendations	35
	REFERENCES	36
	APPENDICES	39
	Gant Chart	39