



OSAMA MUSHTAQ
01-235161-066
MANSOOR KHAN JADOON
01-235142-029

Virtual Car Alteration with 3D Model

Bachelor of Science in Computer Science

Supervisor: S. Suroor Mehdi Zaidi

Department of Computer Science
Bahria University, Islamabad

May 2020

Abstract

According to our survey in the cities, Islamabad and Rawalpindi we found out that 40-60 percent of our population cannot afford to own brand new car worth 3 million and they do not go for the imported ones because they prefer the older versions of Toyota, Honda, and Suzuki due to easy availability of car parts at lower rates compared to other rides and try to bring them back to life. This lately has been happening around a lot as we have been visiting the car restoration market for a long time now. We thought that people are shifting to technology at a rapid speed. People are being educated at a greater level and they all have the ability to use the technology. We designed a platform where people can select their rides and see how much it would cost them to restore or to modify their ride online, which makes it easy for them to decide. The user can easily get a cost idea and how his/her product will look after it is restored in a 3D view.

Contents

1	Introduction	1
1.1	Problem Description	1
1.2	Project Objective	2
1.3	Project Scope	2
2	Literature Review	3
2.1	Related Work	3
2.1.1	3D Tuning	3
2.1.2	Indus Motors	4
3	Requirement Specifications	6
3.1	Existing System	6
3.2	Proposed System	6
3.3	Requirement Specification	7
3.3.1	Functional Requirements	7
3.3.2	Non-Functional Requirements	8
3.4	Use Cases	8
3.4.1	Main Use Case	9
3.4.2	Use Case 1	9
3.4.3	Use Case 2	10
3.4.4	Use Case 3	11
3.4.5	Use Case 4	11
3.4.6	Use Case 5	12
3.4.7	Use Case 6	12
3.4.8	Use Case 7	13
3.4.9	Use Case 8	13
3.5	Conclusion	14
4	Design	15
4.1	System Architecture	15
4.1.1	System Architecture Diagram	16
4.2	Design Constraints	16
4.3	Design Methodology	17
4.4	Context Flow Diagram	17
4.5	Activity Diagram	18
4.6	Database Design	19
4.7	Sequence Diagram	20

4.7.1	Sign Up	20
4.7.2	Sign In	21
4.7.3	3D View	21
4.7.4	Car Modification	22
4.7.5	Cart	22
4.7.6	Book Online	23
4.7.7	See Appointment	24
4.7.8	Cancel Appointment	24
4.8	Flow Chart	25
4.9	Graphical User Interface	26
4.9.1	Homepage	26
4.9.2	3D View	26
4.9.3	Cart	27
4.9.4	Book Appointment	27
4.9.5	Booking Details	28
4.10	Conclusion	28
5	System Implementation	29
5.1	Tools and Technologies	29
5.1.1	HTML5	29
5.1.2	CSS 3.0	29
5.1.3	JavaScript	30
5.1.4	PHP	30
5.1.5	VS Code	30
5.1.6	WAMP	30
5.1.7	Adobe Photoshop CC	30
5.1.8	Adobe Illustrator	30
5.2	Implementation Strategy	31
6	System Testing and Evaluation	32
6.1	Graphical User Interface Testing	32
6.2	Usability Testing	32
6.3	Software Performance Testing	33
6.3.1	Compatibility Testing	33
6.3.2	Load Testing	33
6.3.3	Security Testing	33
6.4	Test Cases	33
6.4.1	Sign Up Test Case	34
6.4.2	Login Test Case	34
6.4.3	3D View Test Case	35
6.4.4	Car Modification Test Case	35
6.4.5	Cart Test Case	36
6.4.6	Book Appointment Test Case	36
6.4.7	Cancel Booking Test Case	37
6.5	Conclusion	37

7 Conclusions	38
7.1 Future Enhancements	38
References	39