CHAPTER NO	TITLE	PAGE NO
	ACKNOWLEDGEMENT ABSTRACT	III X
1	INTRODUCTION	
	1.1 Introduction	1
	1.2 Problem Statement	2
	1.3 Objectives	2
	1.4 Scope	3
2	LITERATURE SURVEY	
	2.1 Introduction	4
	2.2 Automated Evaluation of Student Answers	5
	Using NLP Technique	
	2.3 Intelligent Assessment System Using	5
	Machine Learning for Descriptive Answers	
	2.4 Automatic Grading of Short Answers Using BERT	6
	2.5 OCR Based Automated Examination	7
	System	
	2.6 Assessment using AI-A Comparative Study of	7
	Rule Based and ML Models	
3	SYSTEM ANALYSIS	
	3.1 Existing Systems	9
	3.1.1 Traditional Grading and Its Limitations	9
	3.1.2 Automated Grading for Objective Type	Q

	Questions	
	3.1.3 OCR Based Answer Evaluation	10
	3.1.4 NLP and AI in Descriptive Answer	10
	Evaluation	
	3.2 Disadvantages of Existing Systems	11
	3.3 Proposed System	12
	3.3.1 Handwritten Text Extraction Using Ollama	12
	OCR	
	3.3.2 Text Preprocessing and Cleaning	12
	3.3.3 Semantic Evaluation Using NLP Models	13
	3.3.4 Score Calculation and Feedback Generation	13
	3.3.5 Teacher Dashboard, Student Information,	13
	And Result Accessibility	
	3.4 System Architecture	14
4	SYSTEM REQUIREMENTS	
	4.1 Overall Description	15
	4.2 Specific Requirements	15
	4.2.1 Hardware Requirements	15
	4.2.2 Software Requirements	16
	4.3 Functional Requirements	16
	4.4 Non Functional Requirements	17
5	SYSTEM DESIGN	
	5.1 Architectural Diagram	18
	5.2 UML Diagram	18

	5.2.1 Use Case Diagram	18
	5.2.2 Class Diagram	20
	5.2.3 Sequence Diagram	22
	5.2.4 Activity Diagram	24
	5.2.5 DFD Diagram	25
	5.2.6 ER Diagram	26
6	MODULES IMPLEMENATION	
	6.1 Modules List	28
	6.2 Tesseract OCR Module	28
	6.2.1 Image Input Handling	28
	6.2.2 Preprocessing Techniques	28
	6.2.3 Tesseract Integration	29
	6.2.4 Text Output	29
	6.3 Text Preprocessing Module	29
	6.3.1 Purpose	30
	6.3.2 Cleaning and Normization	30
	6.3.3 Segmentation and Structure	30
	6.3.4 Spell Correction and Grammer	30
	6.3.5 Output	31
	6.4 Question Answer Mapping Module	31
	6.5 Ollama3.1 Text Refinement Module	32
	6.5.1 Ollama3.1 Algorithm Steps	32
	6.6 BERT Sementic Matching Module	34
	6.6.1 BERT Algorithm Steps	34
	6.7 Grading and Feedback Module	36

	6.8 Teacher Dashboad Module	36
	6.9 Student Dashboard Module	37
	6.10 Exam Module	38
	6.11 ExamEvaluation Module	38
	6.12 Authentication Module	39
7	EXPERIMENTAL RESULTS	
	7.1 Tesseract OCR Module Performance	40
	7.2 Ollama Performance	41
	7.3 BERT Semantic Model Performance	42
	7.4 Overall System Performance	42
8	APPENDICES	
	8.1 Sample Source Code	44
	8.2 Demo Screenshots	65
9	CONCLUSION	73
10	FUTURE ENHANCEMENT	74
	REFERENCES	76

FIGURE NO	LIST OF FIGURES	PAGE NO
3.1	GradeX Architecture	14
5.1	GradeX Flow Diagram	18
5.2	Use Case Diagram	19
5.3	Class Diagram	21
5.4	Sequence Diagram	23
5.5	Activity Diagram	24
5.6	DFD Diagram	26
5.7	ER Diagram	27
8.1	GradeX Website	65
8.2	GradeX Information	65
8.3	GradeX Student Sign in	66
8.4	GradeX Student Sign Up	66
8.5	GradeX Student Dashboard	67
8.6	GradeX Student Exam Fill	67
8.7	GradeX Student Awaiting Exam Status	68

8.8	GradeX Teacher Login	68
8.9	GradeX Teacher Dashboard	69
8.10	GradeX Teacher Exam Creation	69
8.11	GradeX Teacher Dashboard Created Exam	70
8.12	GradeX Teacher Dashboard Exam Submission List	70
8.13	GradeX Teacher Dashboard Answer Sheet Upload	71
8.14	GradeX Teacher Dashboard-Answe Sheet Evaluating	71
8.15	GradeX Teacher Dashboard Resutls-1	72
8.16	GradeX Teacher Dashboard Resutls-2	72