**TABLE OF CONTENTS**

**Title Page No**

**ACKNOWLEDGEMENT i**

**ABSTRACT ii**

**COMPANY PROFILE iii**

**LIST OF FIGURES vi**

**LIST OF TABLES vii**

**CHAPTERS**

1. Introduction 1
   1. Project Details 1
   2. Purpose 2
   3. Scope 2
   4. Objective 2
   5. Technology and Literature Review 3
      1. Technology 3
      2. Literature 3
2. Project Management 5
   1. Feasibility Study 5

2.1.1 Technical feasibility 5

2.1.2 Operational feasibility 5

2.1.3 Economic feasibility 6

2.1.4 Time schedule feasibility 6

* 1. Project Planning 6
     1. Project Development Approach and Justification 6
     2. Project Plan 6
     3. Milestones and Deliverables 8
     4. Roles and Responsibilities 8
     5. Group Dependencies 9
  2. Project Scheduling 10

Project Scheduling chart 10

3.0 System Requirements Study 11

3.1 Study of Current System 11

3.2 Problems and Weaknesses of Current System 11

3.3 User Characteristics 12

3.4 Hardware and Software Requirements 12

3.4.1 Hardware Requirements 12

3.4.2 Software Requirements 12

3.5 Constraints 12

3.5.1 Hardware Limitations 12

3.5.2 Interfaces to Other Applications 12

3.5.3 Higher Order Language Requirements 13

3.5.4 Reliability Requirements 13

3.5.5 Criticality of the Application 13

3.5.6 Safety and Security Consideration 13

3.6 Assumptions and Dependencies 13

4.0 System Analysis 14

* 1. Requirements of New System (SRS) 14

4.1.1 System Requirements 14

* 1. Features Of New System 16

1. System Architecture 17
   1. System Architecture Design 17
      1. Type of components required and used 17
      2. System Architecture 19
      3. Control Theory 30
2. Implementation Planning 31
   1. Implementation Environment 31
      1. Microcontroller 31
      2. Distributed CPU v/s Single CPU architecture 31
      3. Language Used and Why? 32
      4. Sensors 32
      5. Motors 32
      6. Battery 32
   2. Program/Modules Specification 36
   3. Coding Standards 38
3. Testing 40
   1. Testing Plan 40
   2. Testing Strategy 41
   3. Testing Methods 42
   4. Test Cases 43
4. User Manual 47
5. Limitation and Future Enhancement 52
   1. Limitations 52
   2. Enhancements 53
6. Conclusion and Discussion 57
   1. Conclusions 57
   2. Discussion 57
      1. Self Analysis of Project Viabilities 57
      2. Problem Encountered and Possible Solutions 57
      3. Summary of Project work 58

**APPENDIX C 59**

**REFERENCES 60**

**EXPERIENCE 61**