

ABSTRACT

The title of our project is “ENCRYPTION SYSTEM”. This project encrypts and decrypts the files by using Advanced Encryption Standard (AES) algorithm. Our aim is to develop the software named ENCRYPTION SYSTEM that encrypts and decrypts the files by using Advanced Encryption Standard (AES) algorithm. Encryption and Decryption is strong file encryption software for personal and professional security. It protects privacy of our documents and sensitive files by encrypting them using Advanced Encryption Standard (AES) algorithm to provide high protection against unauthorized data access.

In today's world the networking plays a very important role in our life. Most of the activities occur through the network. For the safe and secured exchange of information, we need to have security. The encryption has very wide applications for securing data. Encryption refers to set of algorithms, which are used to convert the documents and any files to code or the unreadable form of files, and provides privacy. To decrypt the file to receiver uses the “key” for the encrypted files.

This project work helps you to understand what cryptography is all about and the procedures used to achieve this aim, it explains the design and implementation of computer security: data encryption and decryption and AES algorithm. The programming language used in the development of this project is python. **Python** is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. It was created by Guido van Rossum during 1985- 1990. Like Perl, Python source code is also available under the GNU General Public License (GPL). This **tutorial** gives enough understanding on **Python programming** language.

ACKNOWLEDGEMENT

With all praises to the almighty God whose abundant Grace and Mercies enabled me to complete this project. I would like to express my profound gratitude to all the people who have inspired and motivated me to make this project a success.

I dedicate this project to my parents for the inspiration, strength and blessing endowed upon me.

I would like to express my sincere thanks to our Course Coordinator for his invaluable suggestion given at every step. I thank him for all his encouragement, inspiring, guidance, advice and suggestion throughout my project work.

Thanks are also due to all my faculties and friends, in my college for their timely help during the tenure of the project. Once again I thank one and all who have helped me directly and indirectly in the successful completion of the project work.

Thanking you

TABLE OF CONTENTS

| | |
|--|-----------|
| Introduction | 1 |
| 1.1 Purpose | 2 |
| 1.2 Scope | 2 |
| 1.3 Objective | 2 |
| 1.4 Technology and Tools | 4 |
| 2) Project Management | 7 |
| 1.2 Project Planning | 8 |
| 1.2 Project Scheduling | 10 |
| 2.3 Risk Management | 11 |
| 3) System Requirements Study | 14 |
| 3.1 User Characteristics | 15 |
| 3.2 Hardware and Software Requirements | 15 |
| 3.3 Constraints Assumptions and Dependencies | 16 |
| 4) System Analysis | 18 |
| 4.1 Study of Current System | 19 |
| 4.2 Problem and Weaknesses of Current System | 19 |
| 4.3 Requirements of New System | 19 |
| 4.4 Feasibility Study | 20 |
| 4.5 Requirements Validation | 20 |
| 4.6 Features of New System | 21 |
| 4.7 Data Flow Diagram | 23 |
| 4.8 UML Diagrams | 24 |
| 4.9 Selection of Hardware and Software and Justification | 28 |
| 5) System Design | 29 |
| 5.1 Overview | 30 |
| 5.2 Product Function | 31 |
| 5.3 User Characteristics | 31 |
| 5.4 Constraints | 31 |
| 5.5 User Requirements | 31 |
| 5.6 Performance Requirements | 32 |
| 5.7 Code Snippet | 33 |

| | |
|---|-----------|
| 6) Proposed Solution and Code Implementation | 34 |
| 6.1 Proposed Solution | 35 |
| 6.2 Implementation Environment | 35 |
| 6.3 Program/Module Specification | 36 |
| 6.4 Coding Standards | 37 |
| 6.5 Coding | 38 |
| 7) Results and Discussion | 51 |
| 7.1 Output and ScreenShots | 52 |
| 8) Testing | 56 |
| 8.1 Testing Plan | 57 |
| 8.2 Testing Strategy | 58 |
| 8.3 Testing Methods | 59 |
| 8.4 Test Cases | 60 |
| 9) Limitations and Future Enhancement | 61 |
| 9.1 Limitations and Future Enhancement | 62 |
| 10) Conclusion and Discussion | 63 |
| 10.1 Self analysis and Project viabilities | 64 |
| 10.2 Problem encountered and possible solutions | 64 |
| 10.3 Summary of project | 65 |
| 11) References | 66 |

TABLE OF FIGURES

| | |
|---|-----------|
| 1) Gant Chart | 11 |
| 2) Data Flow Diagram | 23 |
| 3) Use Case Diagram | 24 |
| 4) Class Diagram | 25 |
| 5) Sequence Diagram for Encryption | 26 |
| 6) Sequence Diagram for Decryption | 27 |
| 7) Layered Architecture | 30 |