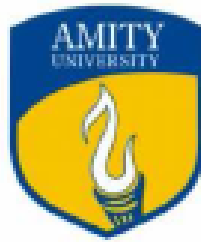


A Project Report
On
**DATA CONCEALMENT USING LSB SUBSTITUTION
TECHNIQUES**

Submitted to
Amity University Uttar Pradesh



In partial fulfilment of the requirements for the award of the degree of
Bachelor of Technology

in
Computer Science & Engineering

by
Gaurav Walia
&
Himalaya Monga

under the guidance of
Mr. Sanjeev Tomar

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
AMITY SCHOOL OF ENGINEERING AND TECHNOLOGY
AMITY UNIVERSITY UTTAR PRADESH

NOIDA (U.P.)

April 2012

DECLARATION

We, **Gaurav Walia ,Himalaya Monga**, student(s) of B.Tech (CSE) hereby declare that the project titled “**DATA CONCEALMENT USING LSB SUBSTITUTION TECHNIQUES**” which is submitted by us to Department of **Computer Science & Engineering**, Amity School of Engineering and Technology, Amity University Uttar Pradesh, Noida, in partial fulfilment of requirement for the award of the degree of Bachelor of Technology in **Computer Science & Engineering**, has not been previously formed the basis for the award of any degree, diploma or other similar title or recognition.

Noida

April 30, 2012

.....

Gaurav Walia

A2305208370

.....

Himalaya Monga

A2305208372

CERTIFICATE

On the basis of declaration submitted by Gaurav Walia, Himalaya Monga student(s) of B. Tech CSE, we hereby certify that the project titled “**DATA CONCEALMENT USING LSB SUBSTITUTION TECHNIQUES**” which is submitted to Department of Computer Science and Engineering Amity School of Engineering and Technology, Amity University Uttar Pradesh Noida , in partial fulfilment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering, is an original contribution with existing knowledge and faithful record of work carried out by him/them under my guidance and supervision.

To the best of my knowledge this work has not been submitted in part or full for any Degree or Diploma to this University or elsewhere.

Noida

April 30,2012

Mr. SANJEEV TOMAR

(Senior Lecturer)

Department of Computer Science and Engineering

Amity School of Engineering and Technology

Amity University Uttar Pradesh, Noida

ACKNOWLEDGEMENT

Setting a goal may not always be an easy task; obstacles are bound to come in its way and when this happens, help is welcome and without help of those people whom we are mentioned here, this goal would not have been successful. The completion of any project brings with it a sense of satisfaction, but it is never complete without thanking those people who made it possible and whose support has crowned my efforts with success.

I would like to express my gratitude to Dr.BalvinderShukla (Director General, ASET & Pro. VC (A)), Mr. K.M. Soni, Deputy Director, ASET, Prof. Kaiser Singh, HOD , Computer Science Department, ASET, for encouraging and inspiring me to carry out the project.

I express my deep sense of gratitude to my project guide Mr. Sanjiv Tomar for his valuable guidance encouragement, valuable suggestions and kind cooperation without which this project would not have been possible.

Last but not the least I am also thankful to other technical staff of the Department whohelped me to complete my project successfully.

Thanking you

STUDENT SIGNATURE(s)

ABSTRACT

Basically, we have designed an application for users round the world, to share confidential data in any form amongst their peers, colleagues, friends & family. The interface is user-friendly having an option of both encrypting text as well as a data file. Be it an image, a song, a video!

- Features of the application:
 - ✓ Concealing Plain text in an Image File.
 - ✓ Concealing Plain text in an Audio File.
 - ✓ Concealing Image in an Image File.
 - ✓ Concealing Image in an Audio File.
 - ✓ Concealing Audio in an Image File.
 - ✓ Concealing Audio in an Audio File.
- Added Features:
 - ✓ Dynamic File Compression
 - ✓ Password Encryption for compressed files
- Implement and demonstrate an interactive interface for multiple parties to share confidential data (Messages, Images & Audio) in a hidden shell using the techniques of LSB substitution
- The advantage of such an application is, that the data is not only encoded and sent to the user, but also sent in a hidden shell so as to reduce doubts of suspicion.
- The encoded file, inherently has an increased file size, therefore efficient algorithms for file compression are to be applied.

CONTENTS

CANDIDATE'S DECLARATION	II
CERTIFICATE	III
ACKNOWLEDEGEMENT	IV
ABSTRACT	V
CONTENTS	VI
LIST FIGURES	VIII
CHAPTER 1: INTRODUCTION	
1.1 OVERVIEW	1
1.2 SOFTWARE REQUIREMENT SPECIFICATION (SRS)	2
1.2.1 INTRODUCTION	2
1.2.2 OVERALL DESCRIPTION	2
1.2.3 SPECIFIC REQUIREMENTS	4
1.3 LANGUAGE USED (JAVA)	6
1.4 SECURITY IN JAVA	6
CHAPTER 2: CONCEPT MODULES USED	
2.1 DATA CONCEALMENT	8
2.2 ENCRYPTION	11
2.3 COMPRESSION	12
CHAPTER 3: DATA FLOW ANALYSIS	
3.1 COMPRESSION ONLY	14
3.2 COMPRESSION WITH ENCRYPTION	15

3.3 W/O COMPRESSION + W/O ENCRYPTION	16
3.4 ENCRYPTION ONLY	17
CHAPTER 4: WORKING – SNAPSHOTS	
4.1 EMBEDDING MESSAGE	18
4.2 RETRIEVING MESSAGE	22
4.3 EMBEDDING FILE	25
4.4 RETRIEVING FILE	28
CHAPTER 5: CONCLUSION	31
CHAPTER 6: FUTURE RESEARCH	32
CHAPTER 7: BIBLIOGRAPHY	33

LIST OF FIGURES

FIG. NO.	DESCRIPTION	PAGE
1.0	Working of text embed in image	9
1.1	Detailed transition of bits	9
1.2	Implementation of WritableRaster	10
1.3	Data Flow: Compression only	14
1.4	Data Flow: Compression with Encryption	15
1.5	Data Flow: Without Compression & Without Encryption	16
1.6	Data Flow: Encryption only	17
1.7	Snapshot: Front menu for message embed	18
1.8	Snapshot: Selecting master file	19
1.9	Snapshot: Selecting output file	19
2.0	Snapshot: Setting compression level and password encrypt	20
2.1	Snapshot: Success dialog box	20
2.2	Snapshot: Working audio clip	21
2.3	Snapshot: Front menu for message retrieval	22
2.4	Snapshot: Selecting master file	22
2.5	Snapshot: Embed file info	23
2.6	Snapshot: Asks for password entry	23
2.7	Snapshot: Decoded plain text/message	24
2.8	Snapshot: Front menu for file embed	25
2.9	Snapshot: Selecting master file	25
3.0	Snapshot: Select new output file	26
3.1	Snapshot: Select the data/input file	26
3.2	Snapshot: Setting compression level and password encrypt	27
3.3	Snapshot: Success dialog box	27
3.4	Snapshot: Working video clip	27
3.5	Snapshot: Front menu for file retrieval	28
3.6	Snapshot: Selecting master file	28
3.7	Snapshot: Embed file info	29
3.8	Snapshot: Asks for password entry	29
3.9	Snapshot: Asks to open the retrieved file	29
4.0	Snapshot: Retrieved video being played	30