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Implementation of Encryption and decryption Methodologies

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Abstract: *With the internet having reached a level that merges with our lives, growing explosively during the last several decades, data security has become a main concern for anyone connected to the web. Data security ensures that our data is only accessible by the intended receiver and prevents any modification or alteration of data. In order to achieve this level of security, various algorithms and methods have been developed. Cryptography can be defined as techniques that cipher data, depending on specific algorithms that make the data unreadable to the human eye unless decrypted by algorithms that are predefined by the sender.*

I. INTRODUCTION

The need for security in today's world is become more crucial than ever because the number of people who want to exploit data and use it for their own gain have been increasing day by day.

Encryption is the process of changing information in such a way as to make it unreadable by anyone except those possessing special knowledge (usually referred to as a key that allowing them to change the information back to its original readable form.

Encryption is important because it allows you to securely protect data that you don't want anyone else to have access to. Business use it to protect corporate secrets, governments use it to secure classified information and many individuals use it protect personal information to guard against things like identity theft.

Espionage uses encryption to securely protect folders contents which could contain emails, chat histories, tax information, credit card numbers, or any other sensitive information. This way, even if your computer is stolen that data is safe. Cryptography is a technique to achieve confidentiality of messages. The term has a specific meaning in Greek: "secret writing". Nowadays, however, the privacy of individuals and organizations is provided through cryptography at high level, making sure that information sent is secure in a way that the authorized receiver can access this information. With historical roots, cryptography can be considered an old technique that is still being developed.

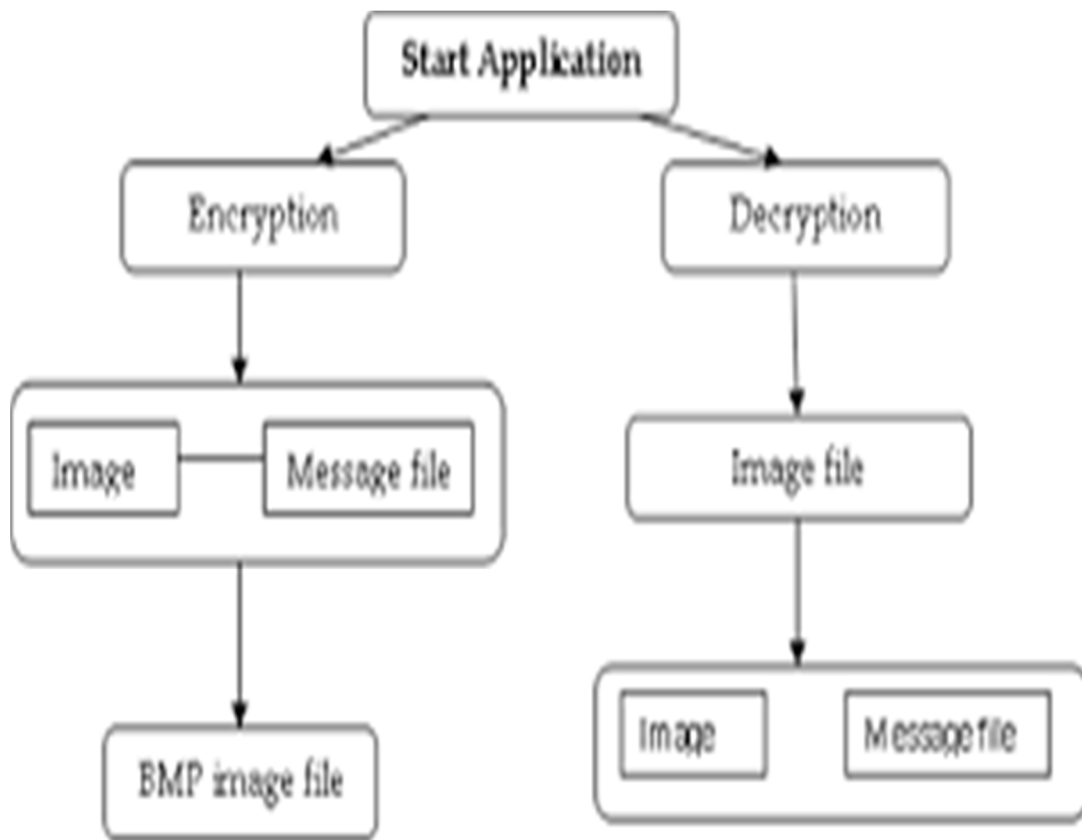
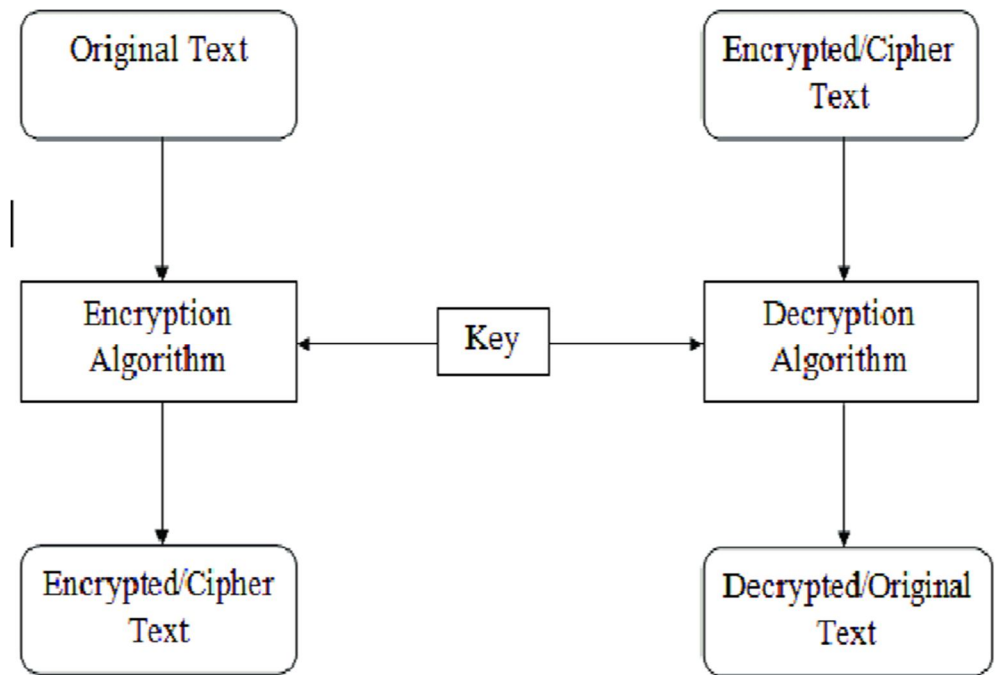
II. RELATED WORK

"Implementation of Encryption and Decryption Methodologies" is the project designed to explain about encryption and decryption. Below are the findings of various research papers.

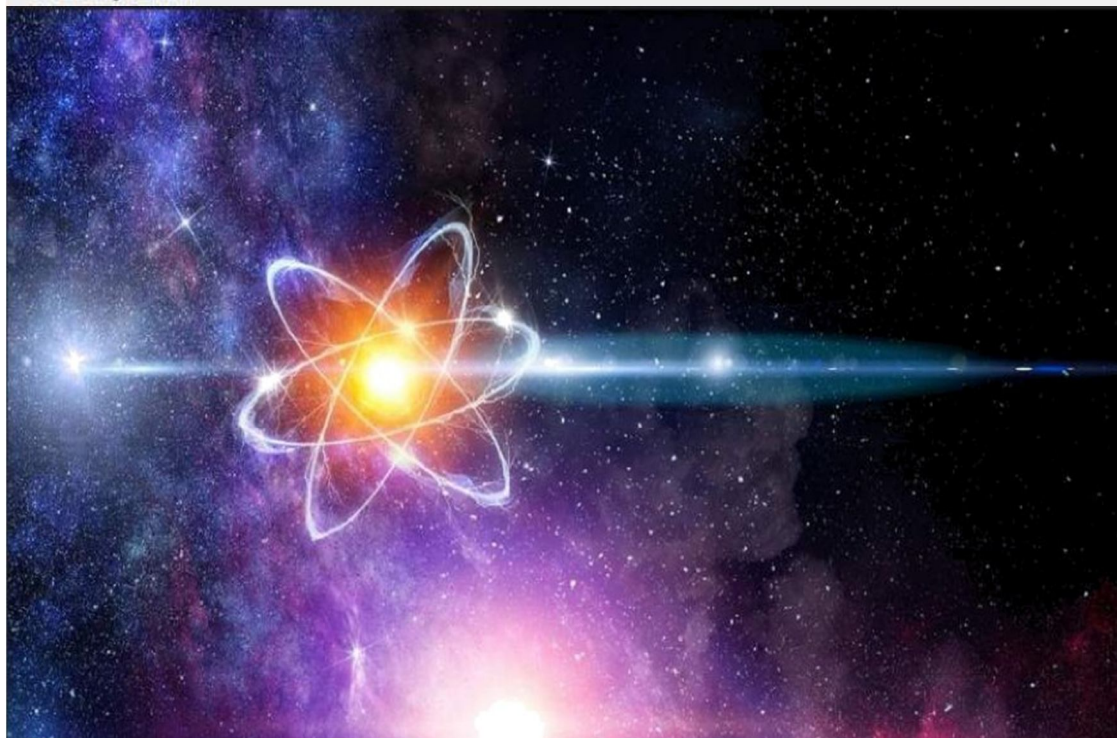
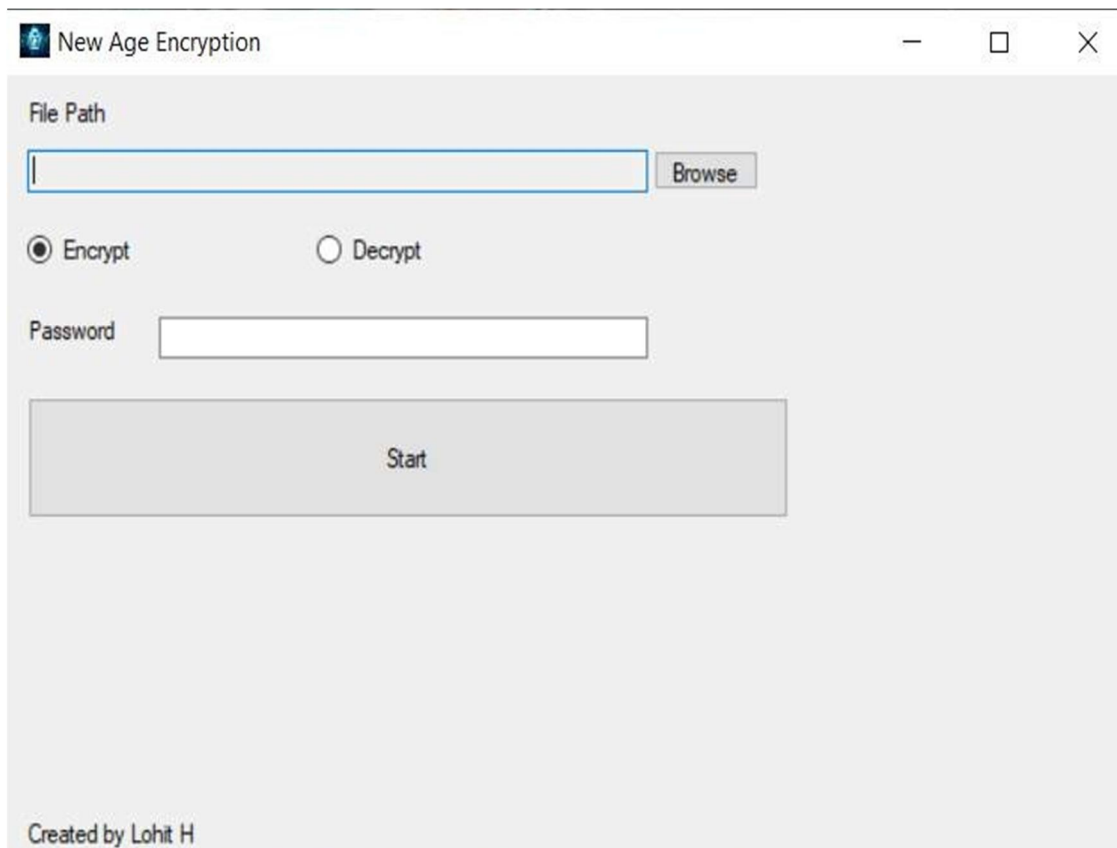
- 1) *A Symmetric Key Cryptographic Algorithm:* There are fundamental varieties of cryptography Symmetric Key and Asymmetric Key. Symmetric key algorithms are the fastest and maximum typically used form of encryption. Here, a unmarried secret's used for each encryption and decryption. There are few famous symmetric key algorithms i.e. DES, RC2, RC4, IDEA etc. The creator represents numerous symmetric key algorithms in element after which proposes a brand new symmetric key algorithm.
- 2) *An Efficient Developed New Symmetric Key Cryptography Algorithm for Information Security:* They proposed new encryption set of rules and used block cipher producing mechanism. They proposed evaluation, outcomes with the aid of using calculation with unique plaintexts with inside the identical key (DPSK) mode. By the outcomes they display that, beneath the identical key length and for the identical length of the data, proposed set of rules paintings quicker than present set of rules
- 3) *A Study of Encryption Algorithms AES, DES and RSA for Security:* They carried out 3 encryption strategies like AES, DES and RSA algorithms and in comparison, their overall performance of different encryption strategies primarily based totally on time for encryption and decryption. They additionally display effects of analyses of effectiveness of every algorithm. Based at the textual content documents used and the experimental result.
- 4) *Efficient Encryption Techniques in Cryptography Better Security Enhancement:* They proposed a have a look at of Encryption strategies and mentioned with their boundaries and procedure. Huffman coding and B2G, G2B is used for encryption. They additionally mentioned diverse trans positional strategies like Simple columnar, easy row, Route cipher, transposition.

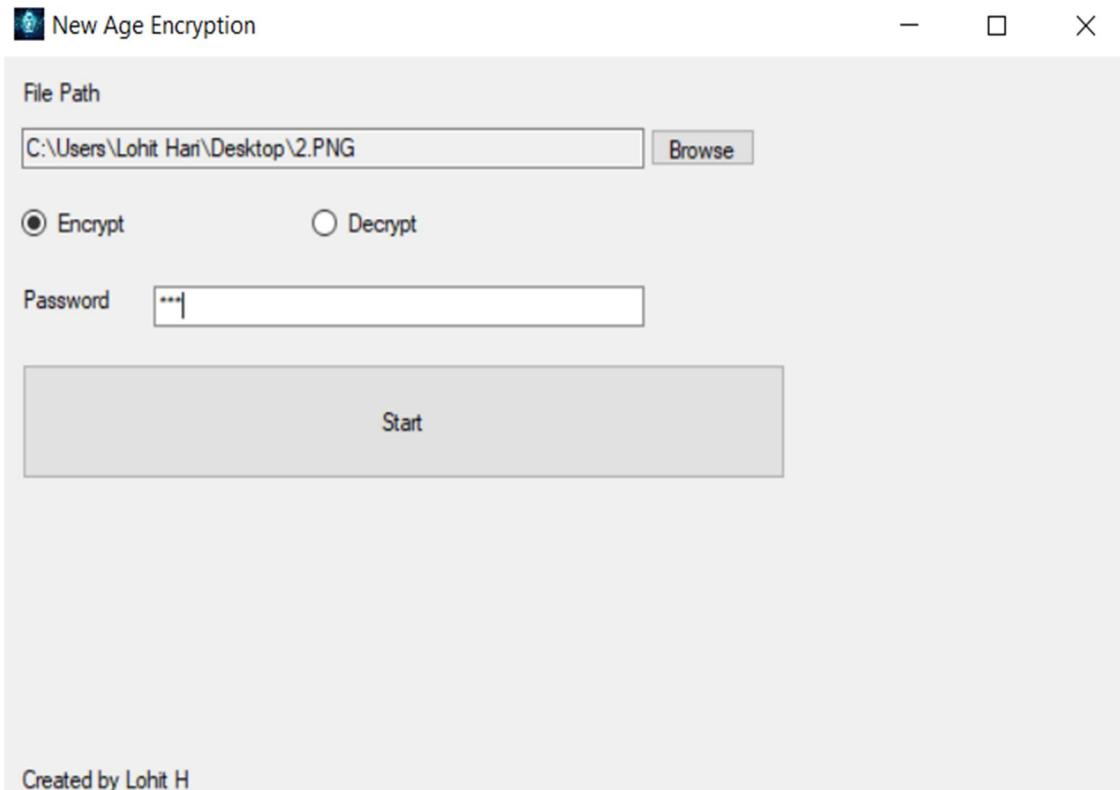
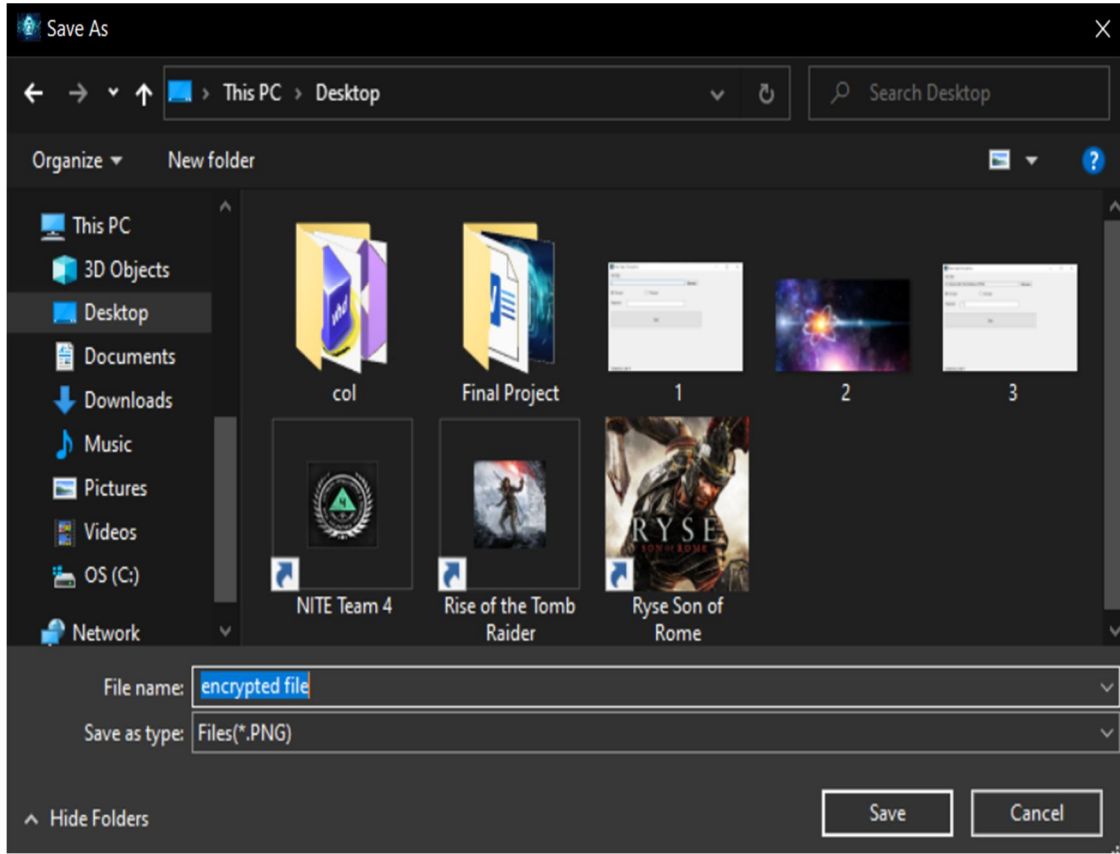
III. ANALYSIS AND INTERPRETATION

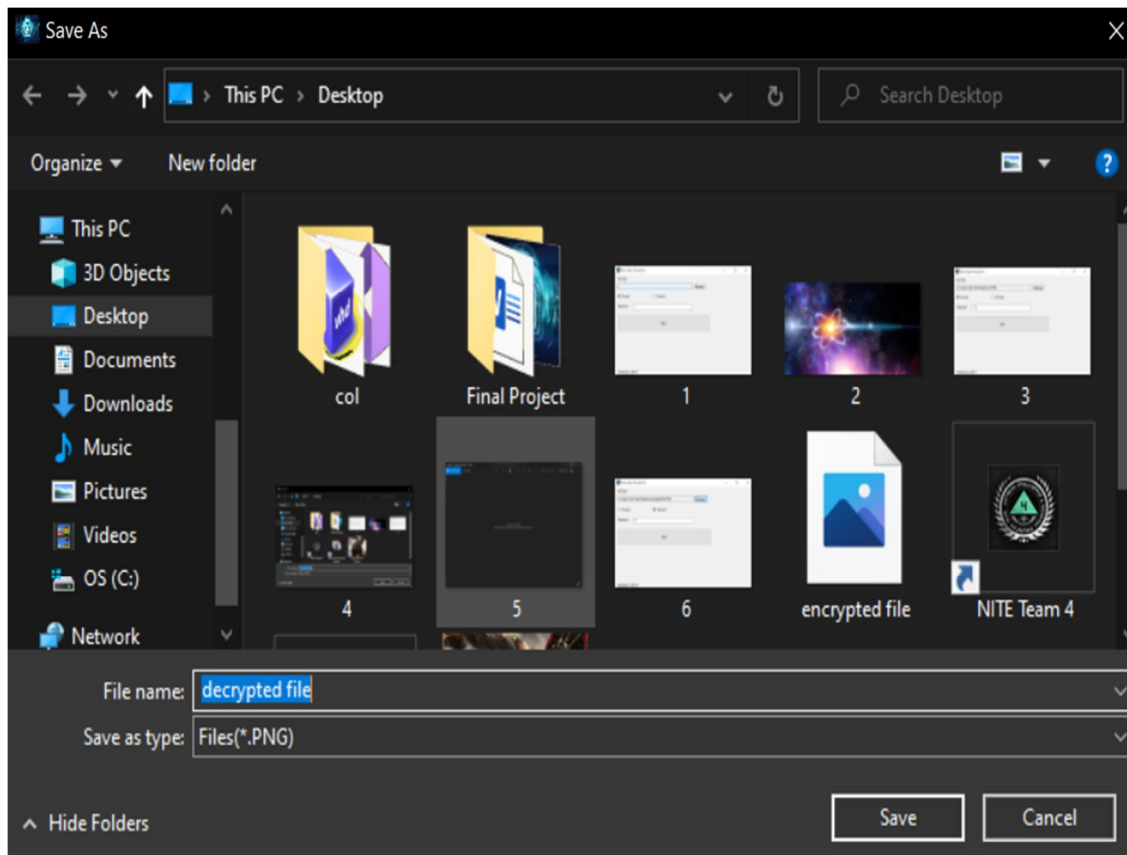
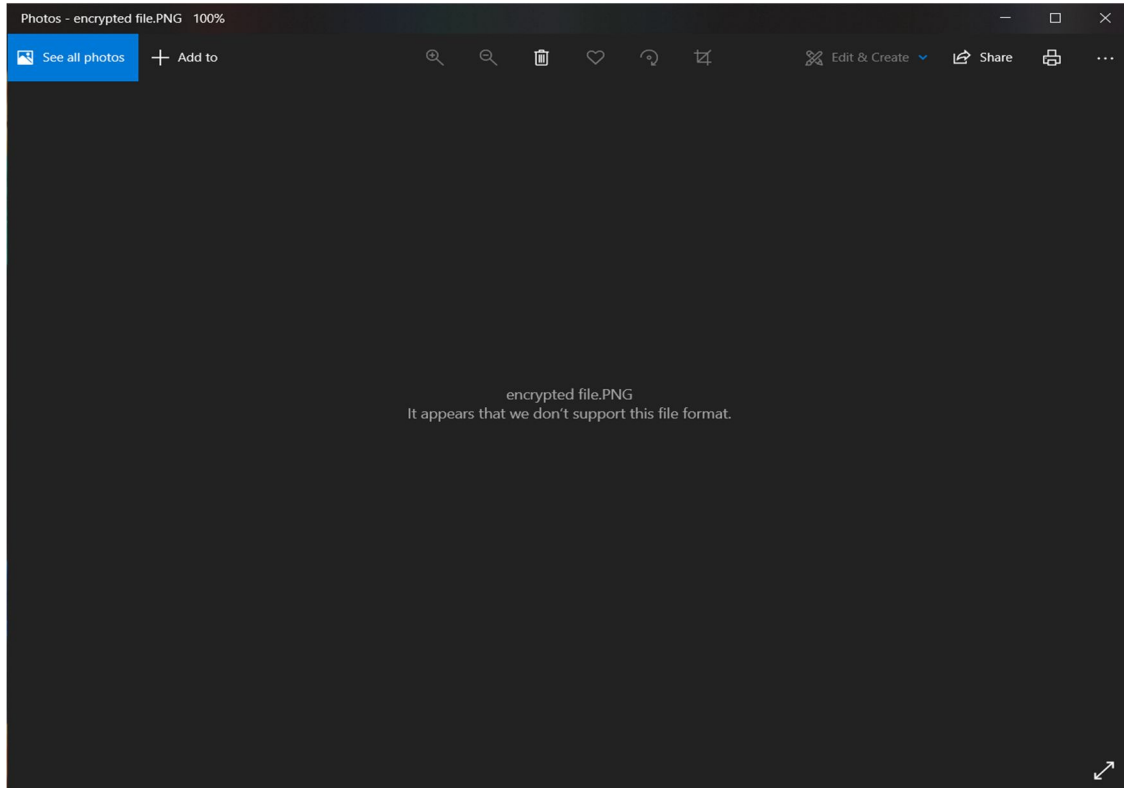
A. Dataflow Diagram

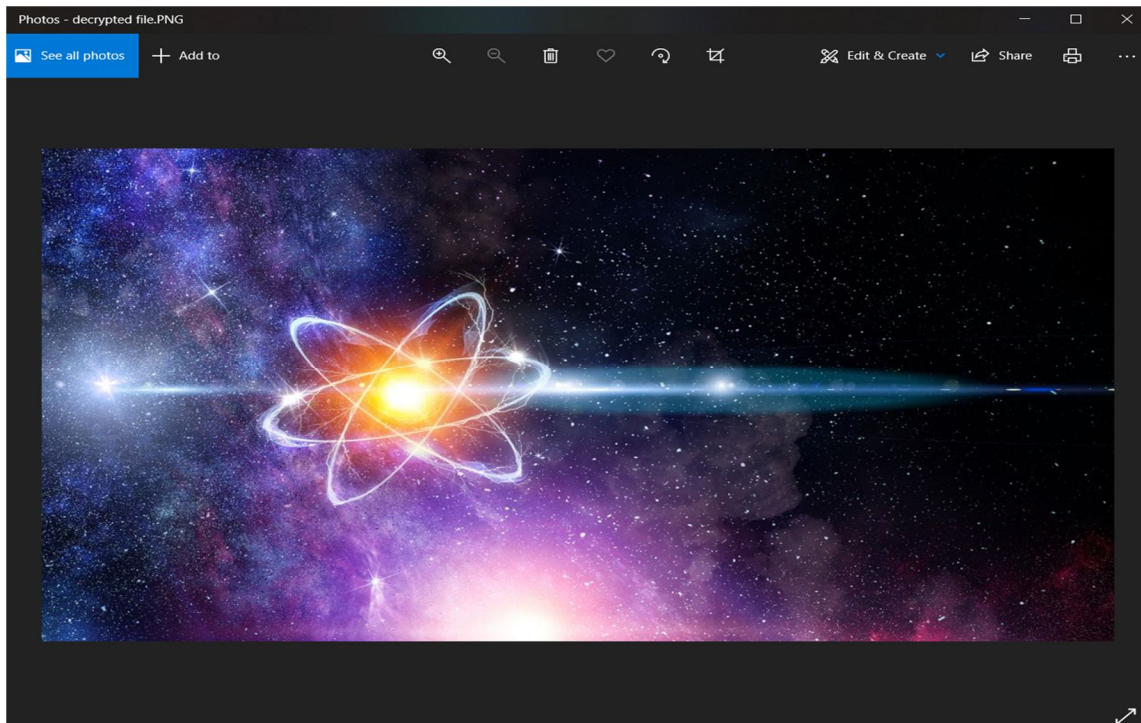
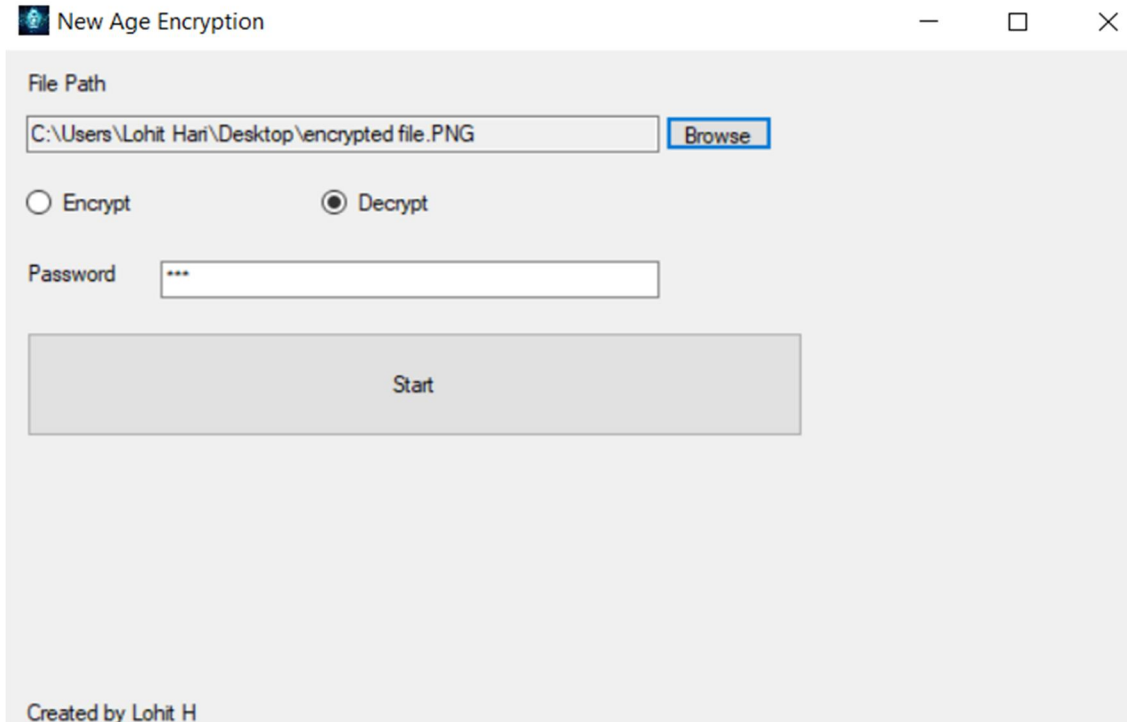


IV. RESULTS AND DISCUSSIONS









V. CONCLUSION

We have successfully implemented the encryption and decryption of the files using the software which makes use of the AES-128 bit encryption mechanism in a systematic way with a user friendly interface. We have seen how the file is loaded onto the system and there are two separate modules for encryption as well as decryption while entering the desired key. We have also seen that multiple types of files with various file sizes can be encrypted and decrypted using this software.



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