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DESIGN AND IMPLEMENTATION OF INFORMATION HIDING TECHNIQUE FOR SECURE COMMUNICATION

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1. INTRODUCTION

Currently most of the communication done through internet or any other network, so information security is the need of the hour. Cryptography based on plain text, encryption, decryption, keys and algorithms. Plain text means message to be encrypted, encrypted text cannot understand by the unauthorized receiver. In encryption and decryption process two types of keys are used symmetric and asymmetric keys. Symmetric key are those which use same key for encryption and decryption purpose and asymmetric are those which uses different keys for encryption and decryption purpose[1],[2].

2. ENCRYPTION AND DECRYPTION PROCESS

Encryption is a process in which plain text takes as input and cliper text as output. It is based on some techniques and methods which are adopt for encryption. Thus after encryption information is not in the normal form and it cannot be understand or read by any unauthorized users only authorized can read that text[1],[2].

3. TYPE OF CRYPTOGRAPHY

Cryptography has two types:

- Symmetric
- Asymmetric

3.1 Symmetric & Asymmetric Encryption

In the cryptography system when both encryption and decryption are performed by using the same key it is called symmetric encryption in symmetric encryption by using the secret key and symmetric algorithm the plain text is converted in to cipher text.

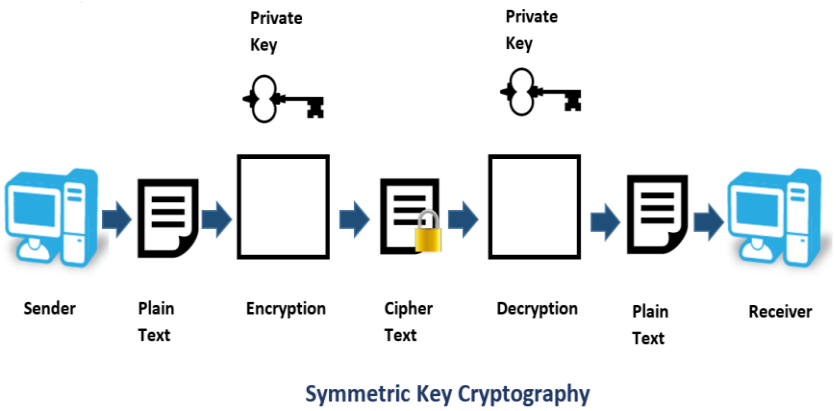

Figure:1symmetric cryptograph

On the other hand in asymmetric encryption system has used different types of keys and recovered the plain text from cipher text. In the process of encryption and decryption the plain text is referred as original message and the coded message is referred as cipher text.

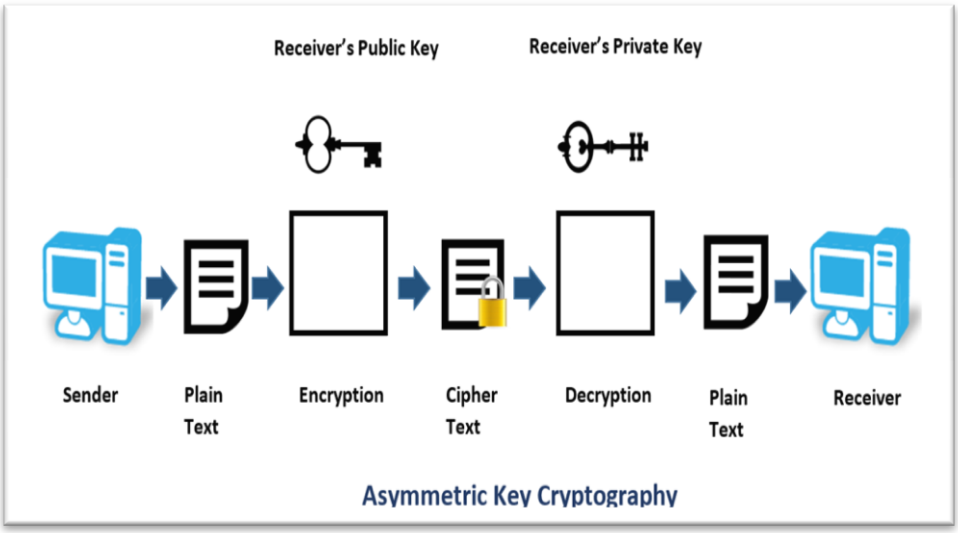

Figure:2 Asymmetric cryptograph

The process which is used for converting the plain text in to cipher text is known as encryption and recover the plain text from cipher text is known as decryption[40],[43].

3.2 ASCII BASED CRYPTOGRAPHY TECHNIQUE

I. Take a Plain text/string as input=s

II. Count the string length of string =sl

III. Calculate the one fourth of the string length and subtract no. of digits string length has

IV. Add "k" to the string length

VII. e= (k*r)

VIII. Then add the "e" in the ASCII values of plain text in the incremental way and it will produce encrypted text.

4. STEPS OF INFORMATION HIDING TECHNIQUES

1. Calculate string length (sl)=24

2. One fourth of the string length (sl) k=6

   k=6-2=4

3. Add "k" to the string length 24+4=28, then is j=28

4. Then add j in all the ASCII values to generate the encrypted text in the incremental way and it will produce encrypted text.

5. Thus in this way encrypted text will generated and to produce the plain text opposite process will be applicable

5. INFORMATION HIDING PROCESS

MY NAME ISROYAL (String length=16); 16-4=4-2=2

M=77	**A=65**	**I=73**	**O=79**
Y=89	M=77	S=83	Y=89
=32	E=69	=32	A=65
N=78	=32	R=82	L=76

Table 2: Encryption Process

M=77+2	**79**	**O**	**A=65+6**	**71**	**G**	**I=73+10**	**83**	**S**	**O=79+14**	**93**	**]**
Y=89+3	92	\	M=77+7	84	T	S=83+11	94	○	N=78+15	93	]
=32+4	36	$	E=69+8	77	M	=32+12	44	,			
N=78+5	83	S	=32+9	41	)	J=74+13	87	W			

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Table 3: Encrypted Text

6. CONCLUSION

This paper designed and implements the information hiding technique for the purpose of secure communication. Techniques use the ASCII codes to encrypt the plain text and by using the complex calculations ASCII based special character will be generated which is used to hide the information. This is very robust technique and has fruitful results during implementation. Efforts for improvements are also going on in future.

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