AN Encryption System

Encryption

In this method, a new encryption method based on the Taylor series is proposed. The steps of the proposed method are as follows.

Step 1: The Taylor series is expanded with $e^t$ . Then this value is multiplied by $t^3$, to generalize the mathematical relation to be used in the encryption algorithm.

Step 2: The number values corresponding to the letters in the alphabet is applied to the text to be encrypted.

Step 3: The numbers found are replaced in the generalized encryption algorithm.

Step 4: The Power series transform is applied to the function obtained from here.

Step 5: The obtained coefficients are found mod Security Key values.

Step 6: Instead of these numbers, the encryption keys are found by taking the quotients in the mode operation.

Step 7: The text is encrypted by writing the letters corresponding to these keys.

Step 8: Encrypted text is converted to ASCII code and the corresponding numbers are found. Then these numbers are converted into a binary system.

Step 9: These numbers are hidden into any text by a method that the user will specify.

Step 10: The sender sends this embedded text along with the private key.

$$f(x) = f(a) + \frac{f^{'}(a)}{1!}(x-a) + \frac{f^{''}(a)}{2!}(x-a)^2 + \cdots + \frac{f^{n}(a)}{n!}(x-a)^{\mathrm{n}} + \cdots$$

$= \sum_{n=0}^{\infty} \frac{f^{n}(a)}{n!}(x-a)^{\mathrm{n}}$. (3.1)

Then, if we expand;

$$e^t = 1 + \frac{t}{1!} + \frac{t^2}{2!} + \frac{t^3}{3!} + \cdots = \sum_{n=0}^{\infty} \frac{t^n}{n!} \qquad (2.1)$$

With $t^3$, then we get:

$$t^3 e^t = t^3 + \frac{t^4}{1!} + \frac{t^5}{2!} + \frac{t^6}{3!} + \cdots = \sum_{n=0}^{\infty} \frac{t^{n+3}}{n!} \qquad (2.2)$$

Therefore, we obtain:

$$f(t) = \sum_{n=0}^{\infty} K_n \frac{t^{n+3}}{n!}. \qquad (2.3)$$

$$f(t) = \sum_{n=0}^{\infty} K_n \frac{t^{n+3}}{n!}$$

$$= K_0 \frac{t^3}{0!} + K_1 \frac{t^4}{1!} + K_2 \frac{t^5}{2!} + K_3 \frac{t^6}{3!} + K_4 \frac{t^7}{4!} \qquad (2.4)$$

$$T[f(t)](h) = T[\sum_{n=0}^{\infty} K_n \frac{t^{n+3}}{n!}](h)$$

$$= T[K_0 \frac{t^3}{0!} + K_1 \frac{t^4}{1!} + K_2 \frac{t^5}{2!} + K_3 \frac{t^6}{3!} + K_4 \frac{t^7}{4!}](h)$$

The Coefficients ($K_0$, $K_1$, $K_2$ ………………)

The Coefficient in Tayor Series (Tc) will become $K_n$ x (n+3)! (since its $e^t$ x $t^3$ )

Tc = $K_n$ x (n+3)!

If they are Divided by the Security Key

The Quotient will be Your Secret Text and Remainder through enumeration can be converted to Encrypted Message