



## REDUCED PLAYFAIR MATRIX FOR UNICODE CHARACTERS FROM 256X256 TO 16X16

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### ABSTRACT

Playfair cipher is a substitution cipher. It is suitable for the encryption of wireless and mobile devices. The only modification of traditional Playfair that supported Unicode characters used 256x256 matrix. The matrix size is not suitable for devices with limited space and low power consumption. The proposed cipher has reduced the matrix to 16x16 but encryption and decryption process is carried out one character at a time in hexadecimal instead of the normal digraph in characters. The results obtained shows that brute force attack and the probability of occurrence of a character for both the proposed cipher and that of existing 256x256 are the same. But the proposed cipher is faster than the existing 256x256 by 2908.53883 seconds on the average.

**Keywords:** Ciphertext, playfair, cryptography, digraph, encryption, substitution.

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