

A Cipher Code for Secure-Encrypted Communications to Prevent Leaking of Sensitive Information through e-mails and Smart Phones

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Abstract – Recently the prime minister of a technologically-advanced country claimed that if one has a smart phone in one’s hand, one has a piece of his country in his possession. The meanings behind these words are that the electronic devices (e-mails, WhatsApps and messages on social media) are monitored and all the information transmitted there is seen, heard, analyzed and stored by security agencies of the home country as well as foreign spy agencies. There is, therefore, a dire need to develop methods to secure and to transmit information without causing a leak to unwanted parties. Historically, efforts have been made to establish end-to-end secure communications through cipher codes, encrypted messaging and messages written on paper with invisible ink as well as development of one-time cipher codes. Mathematicians take up the task of developing and breaking cipher codes. Cipher codes are broken based on pattern recognition, frequency of occurrence and other such factors. A secure cipher code is the one, which is used only once and the key is available at the transmitting end and at the receiving end. If the key falls in the hands of the opposite side, it may cause a major security breach. Using special functions in the cipher code, need of such a keypad is eliminated. The text may be converted into code using standard expressions in easily accessible mathematics handbooks by converting letters and numbers through one-to-many assignment at the transmitting end and reverting back to original text through many-to-one assignment at the receiving end, making it, virtually, impossible to break the code by frequency of use of pattern recognition. This software needs to be tested to make sure that it generates results to an accuracy exceeding 95%.

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Keywords – Frequency of occurrence, One-to-many assignment, Many-to-one assignment, Pattern recognition, Special functions used in mathematics

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