**MAT1007 : Discrete Mathematics**

**Project Proposal**

**Title of the Project :** Mathematics behind R.S.A – Cryptosystem

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**Abstract :**

Cryptography is the science of using mathematics to encrypt and decrypt the data. Strong encryption algorithms have to be used to make it impossible for any attacker to attack the node which is strongly protected by multiple keys. The RSA algorithm is the foremost basic approach to protect and safeguard our encrypted data.

Our project will be implemented by making a web tool that generates public and private keys using RSA Encryption Algorithm. The main idea behind this process is that, factorizing the multiplication of two prime numbers takes time.

Thus, using prime numbers to generate the public and private keys proves potentiality and its strength relies on the hardness of prime factorization. Statistically, the encrypted data will never clash with one another, nor one would have the computing power to brute force it. The uniqueness of RSA is that it sustains for positive and unique identification.