

## **ENCRYPTION AND DECRYPTION RSA ALGORITHM**

### Algorithm for encryption

1. Choose two large primes  $p$  and  $q$  (typically greater than  $10^{100}$ )
2. Compute  $n = p * q$  and  $z = (p-1) * (q-1)$
3. Find  $e$  with the condition  $\text{gcd}(z, e) = 1$
4. Choose a number  $d$ , relatively prime to  $z$  [  $d = (1/e) \text{ mod } z$  ]
5. Read a character from plain text,  $m$
6. find  $c = m^e \text{ (mod } n)$
7. Write the encrypted char into file

### Algorithm for decryption

1. Read a character from cipher text,  $c$
2. find  $m = c^d \text{ (mod } n)$
3. Write the decrypted character into file