

```

maschlining@Mark-PC:~/jh_arm/rsa_project$ qemu-arm ./rsa_program

===== RSA Encryption System =====

Select an option:

1 - Generate RSA Key Pair
2 - Encrypt a Message
3 - Decrypt a Message

Selection: 3

Enter the private key (d): 1355
Enter the modulus (n): 1739

[Success] Decryption complete.

Decrypted message saved in 'decrypted.txt'.
maschlining@Mark-PC:~/jh_arm/rsa_project$ cat encrypted.txt
357 1449 183 113 210 1449 1131 183 1449 1131 183 1545 991 1064 1718
maschlining@Mark-PC:~/jh_arm/rsa_project$ cat decrypted.txt
Hi this is Markmaschlining@Mark-PC:~/jh_arm/rsa_project$ █

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===== RSA Encryption System =====

Select an option:

1 - Generate RSA Key Pair
2 - Encrypt a Message
3 - Decrypt a Message

Selection: 1
Enter the first prime number (p): 47
Enter the second prime number (q): 37
Enter a public key exponent (e): 200
Error: Invalid public exponent 'e'. It must be  $1 < e < \phi(n)$  and coprime to  $\phi(n)$ .
Enter a public key exponent (e): 1
Error: Invalid public exponent 'e'. It must be  $1 < e < \phi(n)$  and coprime to  $\phi(n)$ .
Enter a public key exponent (e): 500000
Error: Invalid public exponent 'e'. It must be  $1 < e < \phi(n)$  and coprime to  $\phi(n)$ .
Enter a public key exponent (e): 1656
Error: Invalid public exponent 'e'. It must be  $1 < e < \phi(n)$  and coprime to  $\phi(n)$ .
Enter a public key exponent (e): 1655

--- Keys Generated Successfully ---
Public Key (n, e): (1739, 1655)
Private Key (n, d): (1739, 1655)

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```
===== RSA Encryption System =====
```

```
Select an option:
```

```
1 - Generate RSA Key Pair
```

```
2 - Encrypt a Message
```

```
3 - Decrypt a Message
```

```
Selection: 1
```

```
Enter the first prime number (p): 47
```

```
Enter the second prime number (q): 37
```

```
Enter a public key exponent (e): 11
```

```
--- Keys Generated Successfully ---
```

```
Public Key (n, e): (1739, 11)
```

```
Private Key (n, d): (1739, 1355)
```

```
maschlining@Mark-PC:~/jh_arm/rsa_project$ qemu-arm ./rsa_program
```

```
===== RSA Encryption System =====
```

```
Select an option:
```

```
1 - Generate RSA Key Pair
```

```
2 - Encrypt a Message
```

```
3 - Decrypt a Message
```

```
Selection: 2
```

```
Enter the public key (e): 11
```

```
Enter the modulus (n): 1739
```

```
Enter the text to encrypt: Hi this is Mark
```

```
[Success] Encryption complete.
```

```
Encrypted message saved in 'encrypted.txt'.
```

```
maschlining@Mark-PC:~/jh_arm/rsa_project$ cat encrypted
```

```
cat: encrypted: No such file or directory
```

```
maschlining@Mark-PC:~/jh_arm/rsa_project$ cat encrypted.txt
```

```
357 1449 183 113 210 1449 1131 183 1449 1131 183 1545 991 1064 1718
```