From: <[http://rosettacode.org/wiki/RSA\_code#Perl\_6](http://rosettacode.org/wiki/RSA_code%23Perl_6)>

## [Perl 6](http://rosettacode.org/wiki/Category:Perl_6)[[edit](http://rosettacode.org/mw/index.php?title=RSA_code&action=edit&section=11)]

**Works with**: [rakudo](http://rosettacode.org/wiki/Rakudo" \o "Rakudo) version 2015-11-04

No blocking here. Algorithm doesn't really work if either red or black text begins with 'A'.

**constant** $n = **9516311845790656153499716760847001433441357**;  
**constant** $e = **65537**;  
**constant** $d = **5617843187844953170308463622230283376298685**;  
   
**my** $secret-message = "ROSETTA CODE";  
   
package Message **{**  
 **my** @alphabet = slip**(**'A' .. 'Z'**)**, ' ';  
 **my** $rad = +@alphabet;  
 **my** %code = @alphabet **Z**=> **0** .. \*;  
 **subset** Text **of** Str **where** ***/^^ @alphabet+ $$/***;  
 **our** **sub** **encode(**Text $t**)** **{**  
 **[**+**]** %code**{**$t.**flip**.**comb}** **Z**\* **(1**, $rad, $rad\*$rad ... \***)**;  
 **}**  
 **our** **sub** **decode(**Int $n **is** copy**)** **{**  
 @alphabet**[**  
 gather **loop** **{**  
 take $n % $rad;  
 **last** **if** $n < $rad;  
 $n **div**= $rad;  
 **}**  
 **]**.**join**.**flip**;  
 **}**  
**}**  
   
**use** Test;  
plan **1**;  
   
**say** "Secret message is $secret-message";  
**say** "Secret message in integer form is $\_" **given**  
 **my** $numeric-message = Message::**encode** $secret-message;  
**say** "After exponentiation with public exponent we get: $\_" **given**  
 **my** $numeric-cipher = expmod $numeric-message, $e, $n;  
**say** "This turns into the string $\_" **given**  
 **my** $text-cipher = Message::**decode** $numeric-cipher;  
   
**say** "If we re-encode it in integer form we get $\_" **given**  
 **my** $numeric-cipher2 = Message::**encode** $text-cipher;  
**say** "After exponentiation with SECRET exponent we get: $\_" **given**  
 **my** $numeric-message2 = expmod $numeric-cipher2, $d, $n;  
**say** "This turns into the string $\_" **given**  
 **my** $secret-message2 = Message::**decode** $numeric-message2;  
   
**is** $secret-message, $secret-message2, "the message has been correctly decrypted";

**Output:**

1..1

Secret message is ROSETTA CODE

Secret message in integer form is 97525102075211938

After exponentiation with public exponent we get: 8326171774113983822045243488956318758396426

This turns into the string ZULYDCEZOWTFXFRRNLIMGNUPHVCJSX

If we re-encode it in integer form we get 8326171774113983822045243488956318758396426

After exponentiation with SECRET exponent we get: 97525102075211938

This turns into the string ROSETTA CODE

ok 1 - the message has been correctly decrypted