Happy Numbers • Mark Senn • Last updated on 2022-05-11 at 20:53-04:

Problem Statement

From The Weekly Challenge - 164 Task #2: Happy Numbers retrieved on 2022-05-11 at 19:52-04:

> **Submitted by:** Robert DiCicco
>
> Write a script to find the **first 8 Happy Numbers** in base 10. For more information, please check out Wikipedia.
>
> Starting with any positive integer, replace the number by the sum of the squares of its digits, and repeat the process until the number equals 1 (where it will stay), or it loops endlessly in a cycle which does not include 1.
>
> These numbers for which this process end in 1 are happy numbers, while those numbers that do not end in 1 are unhappy numbers.
>
> **Example**
>
> 19 is Happy Number in base 10 as shown:

```
19 => 1^2 + 9^2
   => 1   + 81
   => 82 => 8^2 + 2^2
         => 64  + 4
         => 68 => 6^2 + 8^2
               => 36  + 64
               => 100 => 1^2 + 0^2 + 0^2
                      => 1 + 0 + 0
                      => 1
```

Raku Solution

```
# Use version 6.d of the Raku language.
use v6.d;

# Return True if $_ is a happy number.
# Return False if $_ is not a happy number.
sub is-happy(Int $_ is copy) {
    my @digit;  # array of digits for current number
    my %seen;   # have we seen this number before?

    loop {
        $_ = ((@digit = .split('')) <<*>> @digit).sum;
        $_ == 1    and  return True;
        %seen{$_}  and  return False;
        %seen{$_} = True;
    }
}

(1..*).grep({.&is-happy}).head(8).join(' ').say;
```