Practice Exercise #19: Pointers

http://www.comp.nus.edu.sg/~cs1010/4_misc/practice.html

Reference: Week 5

Date of release: 8 September 2014

Objective: Using pointers

Task statement:

This is a simple exercise on using pointers. CodeCrunch, however, will not be able to tell if you have used pointers in your program or not.

Write a program **pointers.c** to read in a positive integer *a* and a positive real number *b*. As long as $a < b^2$, you repeatedly multiply *a* by *b* and assign the product back to *a*.

For example, if $a = 3$ and $b = 9.5$, then $a < b^2$ is true and hence *a* is updated to 28 (3 × 9.5, and truncated to integer). Next, $a < b^2$ is still true so *a* is updated to 266 (28 × 9.5). Since $a < b^2$ is now false, the loop terminates with the value of 266 in *a*.

The skeleton program is given. You are to complete the program such that accesses to *a* and *b* are done only through their respective pointers *a_ptr* and *b_ptr*. The value of *b* is displayed in 2 decimal places. No other variables should be added in your program.

```
#include <stdio.h>

int main(void) {
   int a, *a_ptr;
   float b, *b_ptr;

   printf("Enter an integer: ");
   scanf("%d", &a);
   printf("Enter a real number: ");
   scanf("%f", &b);

   // fill in the code below

   return 0;
}
```

Sample run:

```
Enter an integer: 3
Enter a real number: 9.5
Values entered are 3 and 9.50
Final value of a = 266
```