Square Root Calculation

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Description

Write a program that takes an input **floating-point** number and calculates the square root of that number using the Newton-Raphson method. Your program should display the output value.

- The Newton-Raphson method is an iterative method for finding the roots of a function.
- Take the input as num. You should start with an initial guess (In our case, $\frac{num}{2}$) and then use the following formula to improve the guess: $x_{n+1} = \frac{x_n + \frac{num}{x_n}}{2}$
- Repeat the formula until the difference between x_{n+1} and x_n is less than a certain tolerance value (In our case, 0.00001).
- Output x_{n+1}

NOTES:

ALL NUMBERs in the calculation are taken as float (single-precision). And please use the above methods and values to calculate.

To make sure the precision of your result is the same as our, you should set the constant like this:

```
.data
tolerance: .float 0.00001
divider: .float 2
```

Sample inputs and outputs

Input #1

```
4
```

Output #1

```
2.0
```

Input #2

```
10
```

Output #2

```
3.1622777
```

Input #3

```
0.01
```

Output #4

```
0.099999994
```

Input #4

```
1145.14
```

Output #4

```
33.83992
```