

Re: smallest positive integer that has exactly k divisors

# Re: smallest positive integer that has exactly k divisors

---

*Source:* <http://coding.derkeiler.com/Archive/General/comp.programming/2007-10/msg00324.html>

---

- *From:* Richard Heathfield <[rjh@xxxxxxxxxxxxxxxx](mailto:rjh@xxxxxxxxxxxxxxxx)>
  - *Date:* Wed, 24 Oct 2007 05:49:17 +0000
- 

mukesh tiwari said:

Hello everybody . i have to find the smallest positive integer that has exactly k divisors. for example if k=6 then 12 is the minimum number which have 6 divisors. One brute force approach i came across is find the prime factorization and calculate the factors until factors are equal to the k but this one is taking to much time even for 2000 factors .

Here's a solution for the first 36 values of k.

```
#include <stdio.h>
#include <stdlib.h>

int main(int argc, char **argv)
{
    unsigned long k = 0;
    if(argc > 1 && (k = strtoul(argv[1], NULL, 10)) > 0 && k < 37)
    {
        unsigned long solution[] =
        {
            1, 2, 4, 6,
            16, 12, 64, 24,
            36, 48, 1024, 60,
            4096, 192, 144, 120,
            65536, 180, 262144, 240,
            576, 3072, 4194304, 360,
            1296, 12288, 900, 960,
            268435456, 720, 1073741824, 840,
            9216, 196608, 5184, 1260
        };
        printf("%lu\n", solution[k - 1]);
    }
    else
    {
        fprintf(stderr, "Spec a number in the range 1-36, or\n");
    }
}
```

Re: smallest positive integer that has exactly k divisors

Re: smallest positive integer that has exactly k divisors

```
fprintf(stderr, "write some more code.\n");  
}  
return 0;  
}
```

—  
Richard Heathfield <<http://www.cpax.org.uk>>  
Email: [rhj@http://www](mailto:rhj@http://www)  
Google users: <<http://www.cpax.org.uk/prg/writings/googly.php>>  
"Usenet is a strange place" – dmr 29 July 1999  
.