Designing Loops

Below are some loops, using either `for`, `while`, or `do while`. You are tasked to rewrite the loop using a different loop structure (`for` if originally a `while`, and vice-versa). Be sure that the variables will have the same value after the loop completes.

<table>
<thead>
<tr>
<th>Loop Structure</th>
<th>Code</th>
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</table>
| **while loop** | `while ( diff > 0.001 )
{ oldval = newval;
newval = 0.25 * oldval + 4.0 / oldval;
diff = fabs(oldval - newval); }
` |
| **for loop**   | `(Use a for loop)` |
| **while loop nested inside a for loop** | `(Use a while loop)` |
| **do loop**    | `(Use a do loop)` |
| **for loop**   | `(Use a for loop)` |

```
while ( diff > 0.001 )
{
    oldval = newval;
    newval = 0.25 * oldval + 4.0 / oldval;
    diff = fabs(oldval - newval);
}

for ( i = 0; i < size; i++ )
{
    if ( 0 == (i % 3) )
    {
        sum += i;
    }
}

do
{
    fun = 0;
    for ( i = 0; i < people; i++ )
    {
        fun += i;
    }
    people = 100 * people / fun;
} while ( fun > the_roof );

n = 1; m = 512;
while ( n < m )
{
    n = n + 1;
    m = m / 2;
}````