

Tower of Hanoi iterative algorithm using stack

Algorithm { iterative }

```

stack ← (n, 1, 2, 3)
while (stack ≠ empty)
  (n, i, j, k) ← stack
  if (n = 1)
    print *, i → k
  else
    stack ← (n-1, j, i, k)
    stack ← (1, i, j, k)
    stack ← (n-1, i, k, j)
  endif
end while
    
```

Output Sequence:

1 → 3
 1 → 2
 3 → 2
 1 → 3
 2 → 1
 2 → 3
 1 → 3

Recursive Algorithm

```

void Hanoi (int n, int i, int j, int k)
{
  if (n == 1)
    printf ("%d → %d", i, k);
  else {
    Hanoi (n-1, i, k, j);
    printf ("%d → %d", i, k);
    Hanoi (n-1, j, i, k);
  }
}
    
```

output sequence:

1 → 3 | 3 → 2 | 2 → 1 | 1 → 3
 1 → 2 | 1 → 3 | 2 → 3

For example

n = 3

j = 2

k = 3

