Beispiele und Übungen zur Rekursion in Python

Beispiel THE SHINING

```
1 def shining():
2     print("All work and no play"
3           "makes Jack a dull boy.")
4     shining()
```

```
1 shining()
```

Beispiel THE SHINING (ungruselig)

```
1 def shining_u(stop=0):
2     if stop >= 5:
3         return
4     print("All work and no play"
5           "makes Jack a dull boy.")
6     stop += 1
7     shining_u(stop)
```

```
1 shining_u()
```

```
All work and no playmakes Jack a dull boy.
All work and no playmakes Jack a dull boy.
All work and no playmakes Jack a dull boy.
All work and no playmakes Jack a dull boy.
All work and no playmakes Jack a dull boy.
```

Beispiel GAUSS

```
1 def gauss(n):
2     if n == 1:
3         return 1
4     else:
5         return n + gauss(n-1)
```

```
1 print(gauss(5))
```

```
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```

Beispiel FAKULTAET

```python
1 def factorial(n):
2     if n <= 1:
3         return 1
4     else:
5         return n * factorial(n-1)
```

```python
1 print(factorial(5))
```

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Beispiel GAUSS-Schleife

```python
1 def gauss_loop(n):
2     total = 0
3     while n >= 1:
4         total += n
5         n -= 1
6     return total
```

```python
1 print(gauss_loop(5))
```

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Beispiel FACTORIAL-Schleife

```python
1 def factorial_loop(n):
2     result = 1
3     while n > 1:
4         result = result * n
5         n -= 1
6     return result
```

```python
1 print(factorial_loop(5))
```

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Beispiel FIBONACCI

```
1 def fibonacci(n):
2     if n == 0:
3         return 0
4     elif n == 1:
5         return 1
6     else:
7         return fibonacci(n-2) + fibonacci(n-1)
```

```
1 print(fibonacci(7))
```

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