In [28]:
```
def fibbonaciRiska(n, memo = {}) :
    if n == 0 or n == 1:
        return 1
    try:
        return memo[n]
    except KeyError:
        result = fibbonaciRiska(n-1, memo) + fibbonaciRiska(n-2, memo)
        memo[n] = result
        return result
```

In [29]:
```
list_fib = ['not use']
for item in range(1,100) :
    list_fib.append(fibbonaciRiska(item))

    # find fibonaci number where not exceed 4 million and stop the loop
    if list_fib[item] > 4000000 :
        break
```

In [30]:
```
# make sure the end of index is less then 4 million
if list_fib[-1] >= 4000000:
    list_fib.pop()
```

In [31]:
```
# take fibbo number whereas even
answer = [x for x in list_fib[1:] if x % 2 == 0 ]
```

In [32]:
```
answer
```

Out[32]:
```
[2, 8, 34, 144, 610, 2584, 10946, 46368, 196418, 832040, 3524578]
```

In [33]:
```
sum(answer)
```

Out[33]:
```
4613732
```

In [ ]:
```

```