```python
#1 Sum of even numbers in a list

numbers = [1, 2, 3, 4, 5, 6]

def sum_even(nums):
    total = 0
    for n in nums:
        if n % 2 == 0:
            total = total + n
    return total

result = sum_even(numbers)

result
```

```
12
```

```python
#2 Reverse a string

s = "hello"

def reverse_string(text):
    return text[::-1]

reverse_string(s)
```

```
{"type":"string"}
```

```python
#3. Squares of each number in a list

nums = [1, 2, 3, 4]

def squares(numbers):
    list = []
    for n in numbers:
        list.append(n * n)
    return list

squares(nums)
```

```
[1, 4, 9, 16]
```

```python
#4. Check prime numbers from 1 to 200

def check_prime(n):
    if n < 2:
        return False
    for i in range(2, n):
        if n % i == 0:
            return False
    return True
```

```
primes = []
for num in range(1, 201):
    if check_prime(num):
        primes.append(num)

primes
```

```
[2,
 3,
 5,
 7,
 11,
 13,
 17,
 19,
 23,
 29,
 31,
 37,
 41,
 43,
 47,
 53,
 59,
 61,
 67,
 71,
 73,
 79,
 83,
 89,
 97,
 101,
 103,
 107,
 109,
 113,
 127,
 131,
 137,
 139,
 149,
 151,
 157,
 163,
 167,
 173,
 179,
 181,
 191,
```

```
 193,
 197,
 199]

#5. Fibonacci sequence using iterator
#dont know how to perform this code

#6. Generator function for powers of 2

def power_of_two(limit):
    for i in range(limit + 1):
        yield 2 ** i

list(power_of_two(5))
```

```
[1, 2, 4, 8, 16, 32]
```

```
#7. Generator to read a file line by line

def read_file(filename):
    with open(filename, "r") as file:
        for line in file:
            yield line.strip()

# Example (create a sample file first)
with open("sample.txt", "w") as f:
    f.write("First line\nSecond line\nThird line")

list(read_file("sample.txt"))
```

```
['First line', 'Second line', 'Third line']
```

```
#8. Sort list of tuples using lambda

data = [(1, 5), (2, 1), (3, 8)]

sorted_data = sorted(data, key=lambda x: x[1])
sorted_data
```

```
[(2, 1), (1, 5), (3, 8)]
```

```
#9.Convert Celsius to Fahrenheit using map

celsius = [0, 10, 20, 30]

fahrenheit = list(map(lambda c: (c * 9/5) + 32, celsius))
fahrenheit
```

```
[32.0, 50.0, 68.0, 86.0]
```

```
#10. Remove vowels using filter
text = "Programming is fun"
```

```
result = ''.join(filter(lambda c: c.lower() not in 'aeiou', text))
result
```

```
{"type":"string"}
```

```
#11. Book order program using lambda and map

orders = [
    [34587, "Learning Python, Mark Lutz", 4, 46.95],
    [98762, "Programming Python, Mark Lutz", 5, 56.50],
    [77226, "Head First Python, Paul Barry", 3, 32.95],
    [88112, "Einführung in Python3, Bernd Klein", 3, 24.99]
]

result = list(map(lambda x: (x[0], x[2] * x[3] + 10 if x[2] * x[3] <
100 else x[2] * x[3]), orders))
result
```

```
[(34587, 187.8), (98762, 282.5), (77226, 108.85000000000001), (88112,
84.97)]
```