Computer Networks

LAB#03

23K-2001

BCS-5J

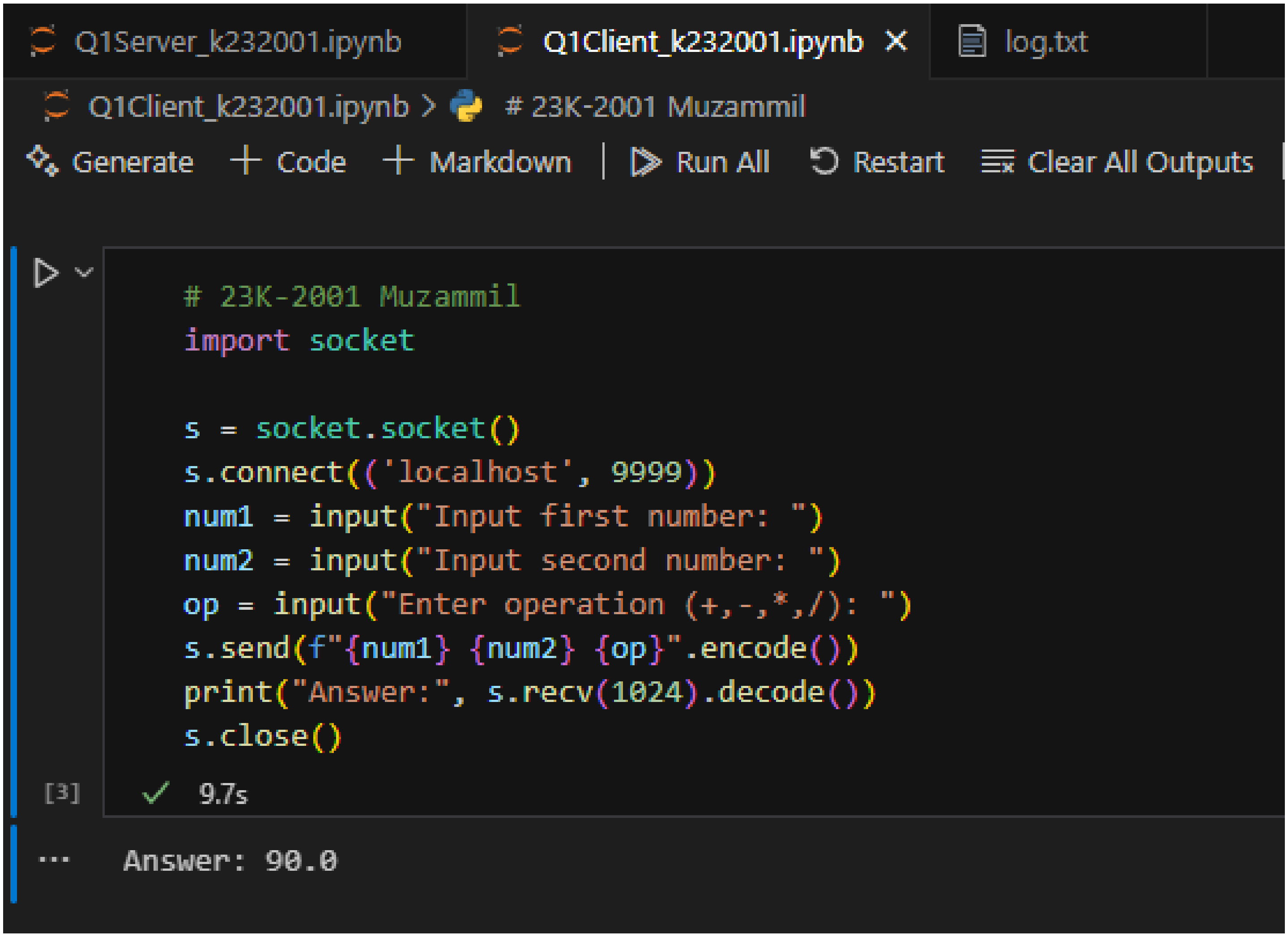
Q1:

Server:

```
# 23K-2001 Muzammil
import socket

s = socket.socket()
s.bind(('localhost', 9999))
s.listen(5)

while True:
    c, addr = s.accept()
    data = c.recv(1024).decode()
    num1, num2, op = data.split()
    num1, num2 = float(num1), float(num2)
    print("Received:", num1, op, num2)
    if op == '+':
        result = num1 + num2
    elif op == '-':
        result = num1 - num2
    elif op == '*':
        result = num1 * num2
    elif op == '/':
        result = num1 / num2
    else:
        result = 'Invalid Operation'
    with open('log.txt', 'a') as f:
        f.write(f"{num1} {op} {num2} = {result}\n")
    c.send(str(result).encode())
    c.close()
```

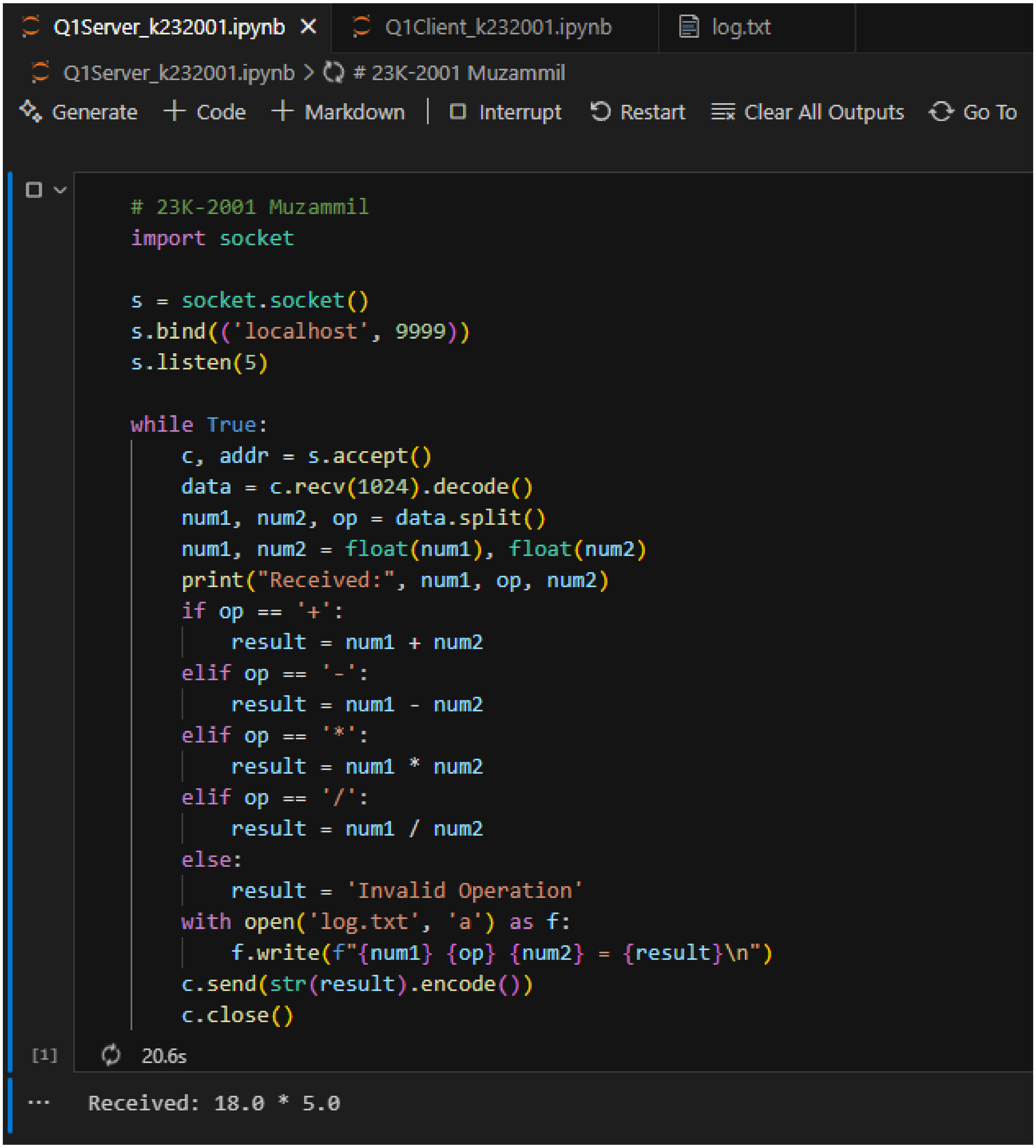
Client:

```
# 23K-2001 Muzammil
import socket

s = socket.socket()
s.connect(('localhost', 9999))
num1 = input("Input first number: ")
num2 = input("Input second number: ")
op = input("Enter operation (+,-,*,/): ")
s.send(f"{num1} {num2} {op}".encode())
print("Answer:", s.recv(1024).decode())
s.close()
```



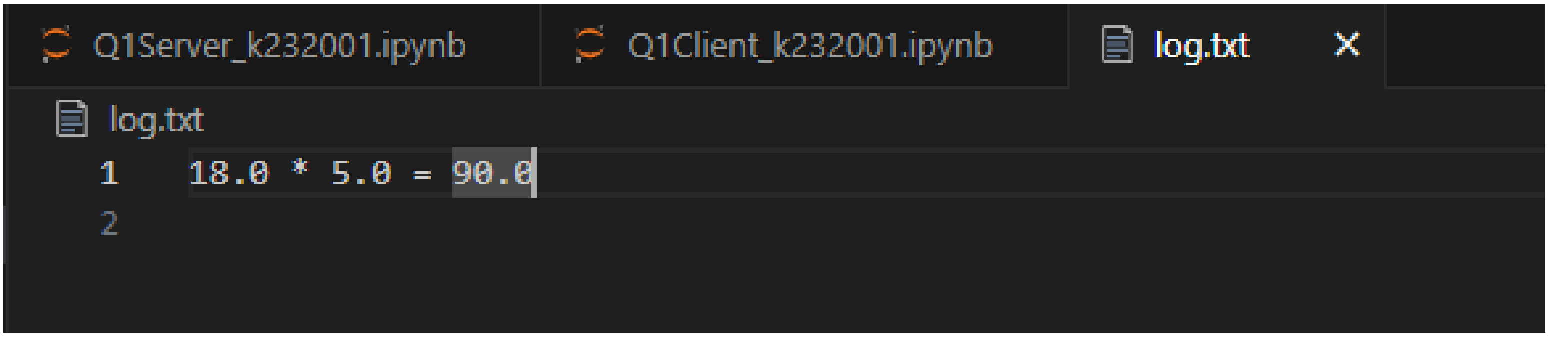
```
# 23K-2001 Muzammil
import socket

s = socket.socket()
s.connect(('localhost', 9999))
num1 = input("Input first number: ")
num2 = input("Input second number: ")
op = input("Enter operation (+,-,*,/): ")
s.send(f"{num1} {num2} {op}".encode())
print("Answer:", s.recv(1024).decode())
s.close()
```

```
Answer: 90.0
```



```python
# 23K-2001 Muzammil
import socket

s = socket.socket()
s.bind(('localhost', 9999))
s.listen(5)

while True:
    c, addr = s.accept()
    data = c.recv(1024).decode()
    num1, num2, op = data.split()
    num1, num2 = float(num1), float(num2)
    print("Received:", num1, op, num2)
    if op == '+':
        result = num1 + num2
    elif op == '-':
        result = num1 - num2
    elif op == '*':
        result = num1 * num2
    elif op == '/':
        result = num1 / num2
    else:
        result = 'Invalid Operation'
    with open('log.txt', 'a') as f:
        f.write(f"{num1} {op} {num2} = {result}\n")
    c.send(str(result).encode())
    c.close()
```

```
Received: 18.0 * 5.0
```



```
18.0 * 5.0 = 90.0
```

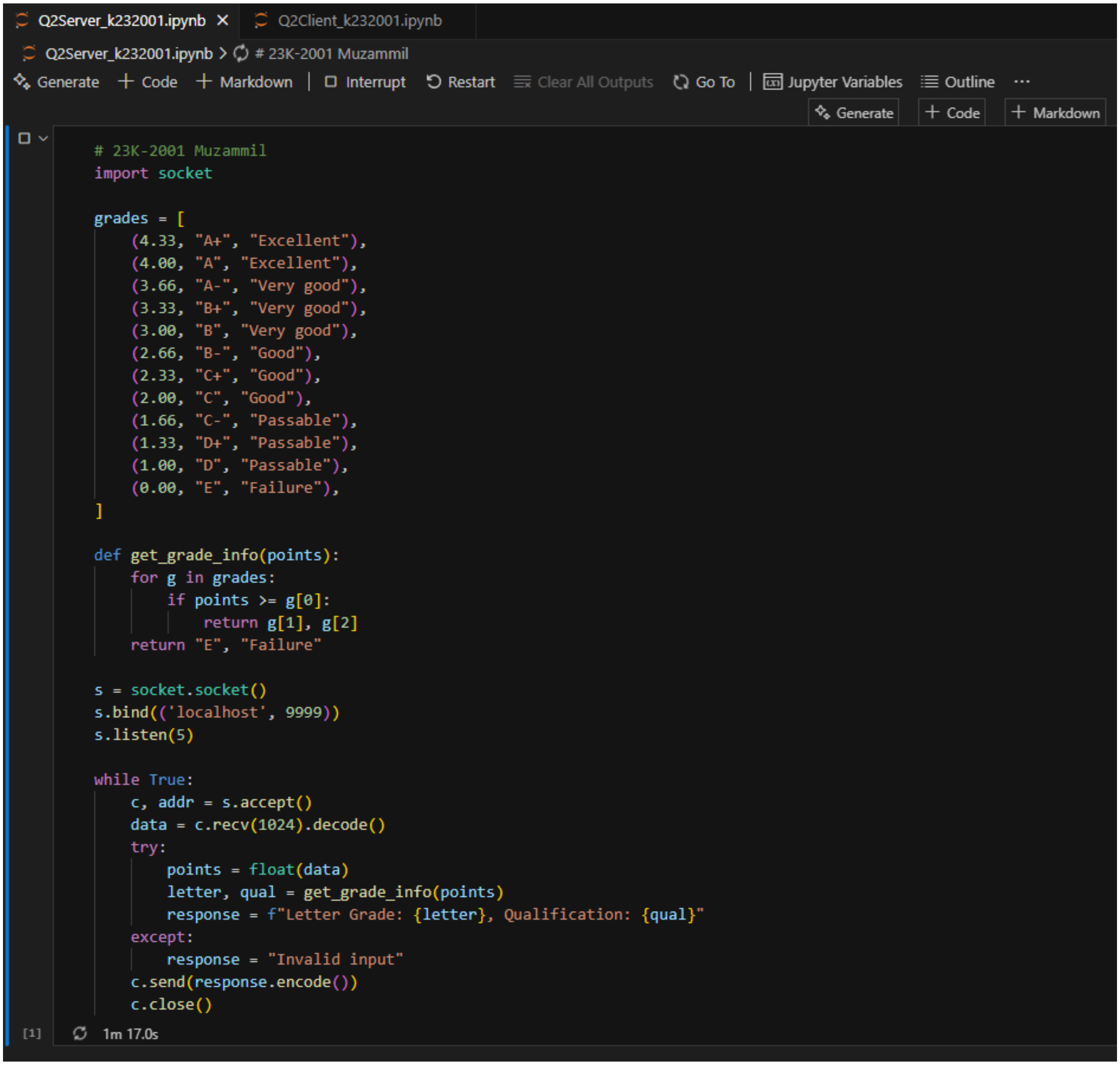
Q2:

Server:

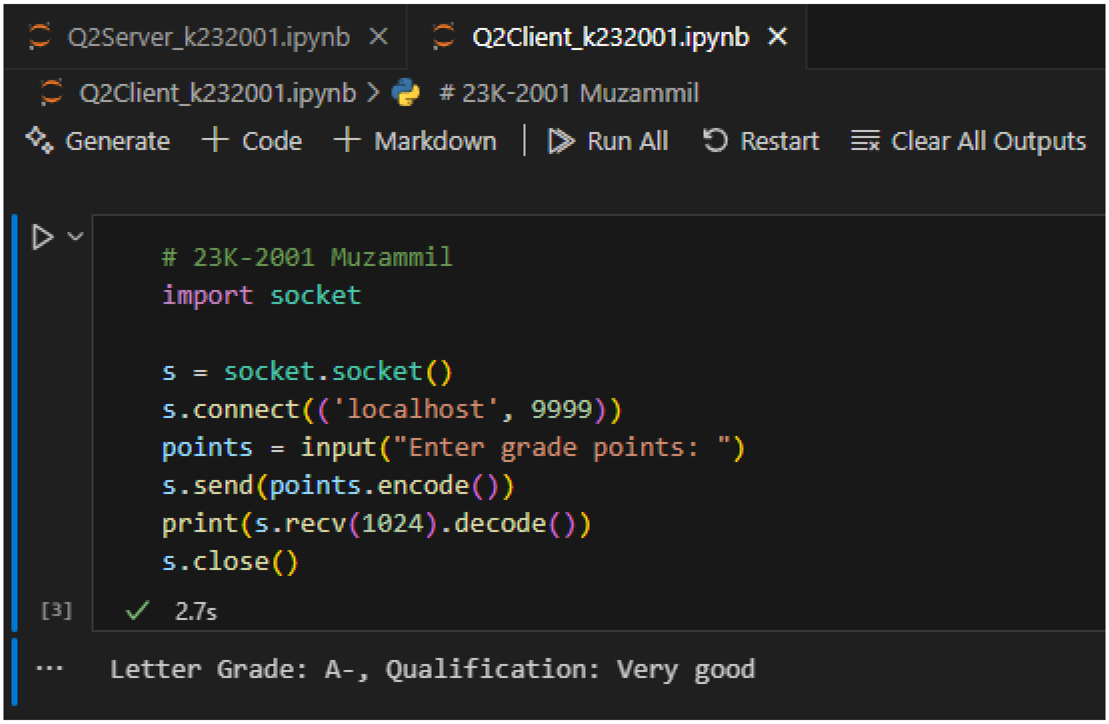
```python
# 23K-2001 Muzammil
import socket

grades = [
    (4.33, "A+", "Excellent"),
    (4.00, "A", "Excellent"),
    (3.66, "A-", "Very good"),
    (3.33, "B+", "Very good"),
    (3.00, "B", "Very good"),
    (2.66, "B-", "Good"),
    (2.33, "C+", "Good"),
    (2.00, "C", "Good"),
    (1.66, "C-", "Passable"),
    (1.33, "D+", "Passable"),
    (1.00, "D", "Passable"),
    (0.00, "E", "Failure"),
]

def get_grade_info(points):
    for g in grades:
        if points >= g[0]:
            return g[1], g[2]
    return "E", "Failure"

s = socket.socket()
s.bind(('localhost', 9999))
s.listen(5)

while True:
    c, addr = s.accept()
    data = c.recv(1024).decode()
    try:
        points = float(data)
        letter, qual = get_grade_info(points)
        response = f"Letter Grade: {letter}, Qualification: {qual}"
    except:
        response = "Invalid input"
    c.send(response.encode())
    c.close()
```

Client:

```
# 23K-2001 Muzammil
import socket

s = socket.socket()
s.connect(('localhost', 9999))
points = input("Enter grade points: ")
s.send(points.encode())
print(s.recv(1024).decode())
s.close()
```



```
# 23K-2001 Muzammil
import socket

grades = [
    (4.33, "A+", "Excellent"),
    (4.00, "A", "Excellent"),
    (3.66, "A-", "Very good"),
    (3.33, "B+", "Very good"),
    (3.00, "B", "Very good"),
    (2.66, "B-", "Good"),
    (2.33, "C+", "Good"),
    (2.00, "C", "Good"),
    (1.66, "C-", "Passable"),
    (1.33, "D+", "Passable"),
    (1.00, "D", "Passable"),
    (0.00, "E", "Failure"),
]

def get_grade_info(points):
    for g in grades:
        if points >= g[0]:
            return g[1], g[2]
    return "E", "Failure"

s = socket.socket()
s.bind(('localhost', 9999))
s.listen(5)

while True:
    c, addr = s.accept()
    data = c.recv(1024).decode()
    try:
        points = float(data)
        letter, qual = get_grade_info(points)
        response = f"Letter Grade: {letter}, Qualification: {qual}"
    except:
        response = "Invalid input"
    c.send(response.encode())
    c.close()
```



```
# 23K-2001 Muzammil
import socket

s = socket.socket()
s.connect(('localhost', 9999))
points = input("Enter grade points: ")
s.send(points.encode())
print(s.recv(1024).decode())
s.close()
```

```
Letter Grade: A-, Qualification: Very good
```