

When Eve does not intercept:

```
PS C:\Users\amukh\Desktop\QKD\BB84_1> python .\quantumMedium.py
* Serving Flask app 'quantumMedium' (lazy loading)
* Environment: production
* Debug mode: on
* Restarting with stat
* Debugger is active!
* Debugger PIN: 108-787-847
* Running on http://localhost:5050/ (Press CTRL+C to quit)
someone asks for the key-length, Quantum Medium return 2500
127.0.0.1 - - [19/Jul/2022 10:07:55] "GET / HTTP/1.1" 200 -
someone asks for the key-length, Quantum Medium return 2500
127.0.0.1 - - [19/Jul/2022 10:07:55] "GET / HTTP/1.1" 200 -

Alice sends all the 2500 qubit
100%|██████████████████████████████████████| 2500/2500 [00:00<00:00, 8338.95it/s]
127.0.0.1 - - [19/Jul/2022 10:07:57] "POST /send_qubit HTTP/1.1" 200 -

Someone measures the qubits in his/her choice of bases.
100%|██████████████████████████████████████| 2500/2500 [00:21<00:00, 116.72it/s]
127.0.0.1 - - [19/Jul/2022 10:08:19] "POST /read qubits HTTP/1.1" 200 -
```

```
PS C:\Users\amukh\Desktop\QKD\BB84_1> python .\classicalMedium.py
* Serving Flask app 'classicalMedium' (lazy loading)
* Environment: production
* Debug mode: on
* Restarting with stat
* Debugger is active!
* Debugger PIN: 108-787-847
* Running on http://localhost:5000/ (Press CTRL+C to quit)
```

Alice sent her bases and is requesting for Bob's bases. But Bob hasn't sent his bases yet, so she waits.

```
127.0.0.1 - - [19/Jul/2022 10:07:59] "POST /get_bob_bases HTTP/1.1" 200 -
```

Bob sent his bases and is requesting for Alice's bases. The Classical Medium already has Alice's bases, so it gives it to him.

```
127.0.0.1 - - [19/Jul/2022 10:08:21] "POST /get_alice_bases HTTP/1.1" 200 -
```

Alice sent her bases and is requesting for Bob's bases. The Classical Medium already has Bob's bases, so it gives it to her.

```
127.0.0.1 - - [19/Jul/2022 10:08:22] "POST /get_bob_bases HTTP/1.1" 200 -
```

Bob is requesting for Alice's sample. But Alice hasn't sent her sample yet, so he waits.

```
127.0.0.1 - - [19/Jul/2022 10:08:23] "GET /get_sample HTTP/1.1" 200 -
```

Alice sent her sample.

```
127.0.0.1 - - [19/Jul/2022 10:08:24] "POST /send_sample HTTP/1.1" 200 -
```

Bob is requesting for Alice's sample. The Classical Medium already has Alice's sample, so it gives it to him.

```
127.0.0.1 - - [19/Jul/2022 10:08:26] "GET /get_sample HTTP/1.1" 200 -
```

Alice is requesting for Bob's decision on whether to proceed with the key or start the process of resending another key.

But Bob hasn't sent his decision yet, so she waits.

```
127.0.0.1 - - [19/Jul/2022 10:08:26] "GET /status HTTP/1.1" 200 -
```

Bob is sending his decision on whether to proceed with the key or start the process of resending another key.

```
127.0.0.1 - - [19/Jul/2022 10:08:28] "POST /status HTTP/1.1" 200 -
```

Alice is requesting for Bob's decision on whether to proceed with the key or start the process of resending another key.

The Classical Medium already has Bob's decision, so it gives it to her.

```
127.0.0.1 - - [19/Jul/2022 10:08:33] "GET /status HTTP/1.1" 200 -
```

"alice.py":

```
PS C:\Users\amukh\Desktop\QKD\BB84_1> python .\bob.py
```

```
Hi! This is Bob!
```

```
match = 100.0%
```

```
Success
```

```
key length = 929
```

```
key =
```

```
01000110101101111111100101110110110100011110001001010100001101011001110111111111101000
0000101110101010011100010101011100110010111110000100110011010010110111100000100111
000111110010011011111001001110110001011001010010011110010010111011101101101000111
0011010110111110100001001101101001101000100011000010100011011011100011101110011110
100000110111000000010100111010000100110011111101110100011110010011111101110110110
0000011010100101101111010110110100100010000000101101001000000110001101011000101000
0100110010110001100000110101010011010111010101011110010000100110100111000111111111
1110011111101011101101110101001111111111011101111101001001011011011001100111001
1100111100101000110100100111100001111111111001011011000000100101101011111010001100
11000000110110000001111001101100010111001001010111111000111011101110110111111001
0000110111001100011100011100100001110110110010110000000100110101011111011100000000
100111010111001111100001101
```

"bob.py":

When Eve intercepts:

"classicalMedium.py":

```
PS C:\Users\amukh\Desktop\QKD\BB84_1> python .\classicalMedium.py
* Serving Flask app 'classicalMedium' (lazy loading)
* Environment: production
* Debug mode: on
* Restarting with stat
* Debugger is active!
* Debugger PIN: 108-787-847
* Running on http://localhost:5000/ (Press CTRL+C to quit)
```

Alice sent her bases and is requesting for Bob's bases. But Bob hasn't sent his bases yet, so she waits.

```
127.0.0.1 - - [19/Jul/2022 10:02:28] "POST /get_bob_bases HTTP/1.1" 200 -
```

Alice sent her bases and is requesting for Bob's bases. But Bob hasn't sent his bases yet, so she waits.

```
127.0.0.1 - - [19/Jul/2022 10:02:51] "POST /get_bob_bases HTTP/1.1" 200 -
```

Alice sent her bases and is requesting for Bob's bases. But Bob hasn't sent his bases yet, so she waits.

```
127.0.0.1 - - [19/Jul/2022 10:03:13] "POST /get_bob_bases HTTP/1.1" 200 -
```

Bob sent his bases and is requesting for Alice's bases. The Classical Medium already has Alice's bases, so it gives it to him.

```
127.0.0.1 - - [19/Jul/2022 10:03:35] "POST /get_alice_bases HTTP/1.1" 200 -
```

Alice sent her bases and is requesting for Bob's bases. The Classical Medium already has Bob's bases, so it gives it to her.

```
127.0.0.1 - - [19/Jul/2022 10:03:36] "POST /get_bob_bases HTTP/1.1" 200 -
```

Bob is requesting for Alice's sample. But Alice hasn't sent her sample yet, so he waits.

```
127.0.0.1 - - [19/Jul/2022 10:03:37] "GET /get_sample HTTP/1.1" 200 -
```

Alice sent her sample.

```
127.0.0.1 - - [19/Jul/2022 10:03:38] "POST /send_sample HTTP/1.1" 200 -
```

Bob is requesting for Alice's sample. The Classical Medium already has Alice's sample, so it gives it to him.

```
127.0.0.1 - - [19/Jul/2022 10:03:40] "GET /get_sample HTTP/1.1" 200 -
```

Alice is requesting for Bob's decision on whether to proceed with the key or start the process of resending another key.

But Bob hasn't sent his decision yet, so she waits.

```
127.0.0.1 - - [19/Jul/2022 10:03:40] "GET /status HTTP/1.1" 200 -
```

Bob is sending his decision on whether to proceed with the key or start the process of resending another key.

```
127.0.0.1 - - [19/Jul/2022 10:03:42] "POST /status HTTP/1.1" 200 -
```

Alice is requesting for Bob's decision on whether to proceed with the key or start the process of resending another key.

The Classical Medium already has Bob's decision, so it gives it to her.

```
127.0.0.1 - - [19/Jul/2022 10:03:47] "GET /status HTTP/1.1" 200 -
```

"eve.py":

```
PS C:\Users\amukh\Desktop\QKD\BB84_1> python .\eve.py
Hi! This is Eve!
completed eavesdropping!
```

"alice.py":

```
PS C:\Users\amukh\Desktop\QKD\BB84_1> python .\alice.py
Hi! This is Alice!
sample length = 375
Eve Detected, mission abort!
```

"bob.py":

```
PS C:\Users\amukh\Desktop\QKD\BB84_1> python .\bob.py
Hi! This is Bob!
match = 59.46666666666667%
Eve Detected, mission abort!
```