



About the `CODE`

Why JAVA ?

Portability

UNIX, WINDOWS...

Simplicity

Library, Graphical user interface, Server...

University

OOP, Team sync...



Our project :

Implementation :

Server

Graphical User Interface

Quantum Physics

Cryptography/BB84

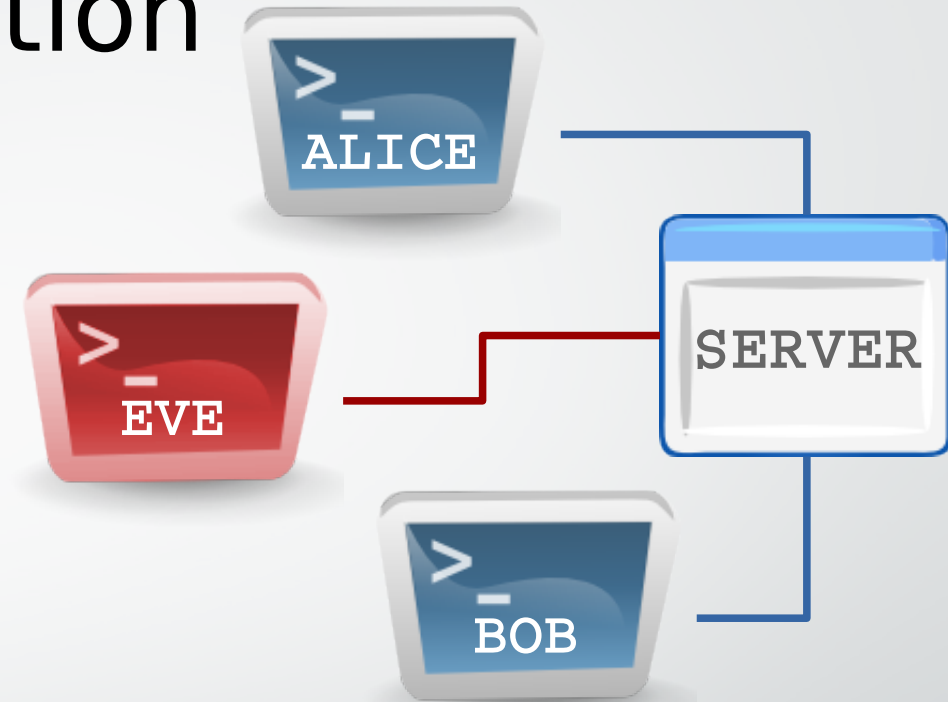
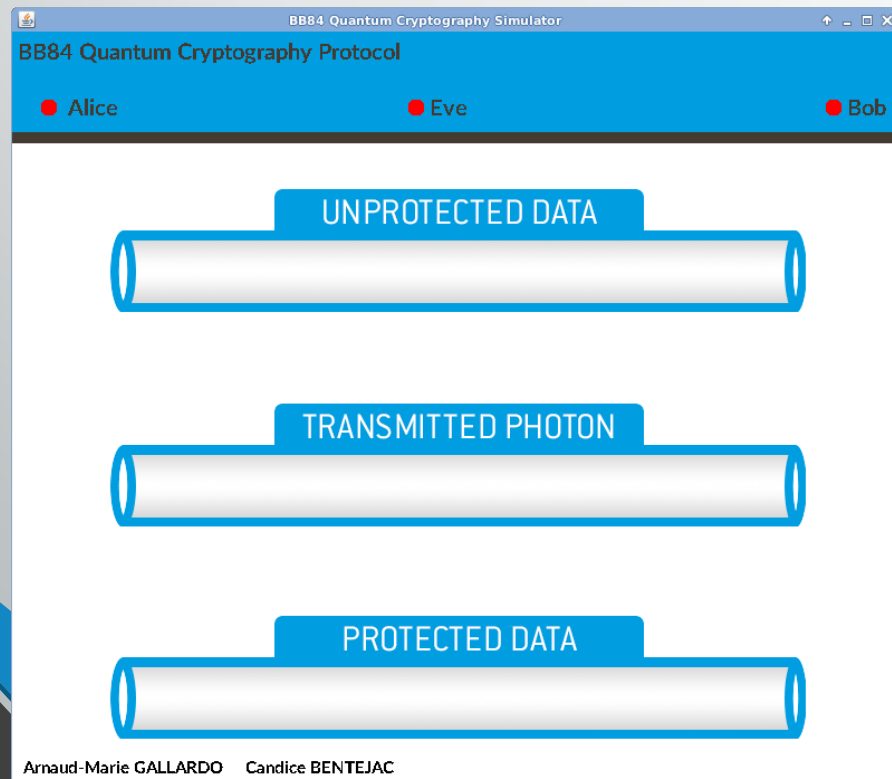
▼ Total Lines of Code	1618
▼ src	1618
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Quick explanation

1

Client/Server

We used a library named JEXXUS, based on the Java Sockets API

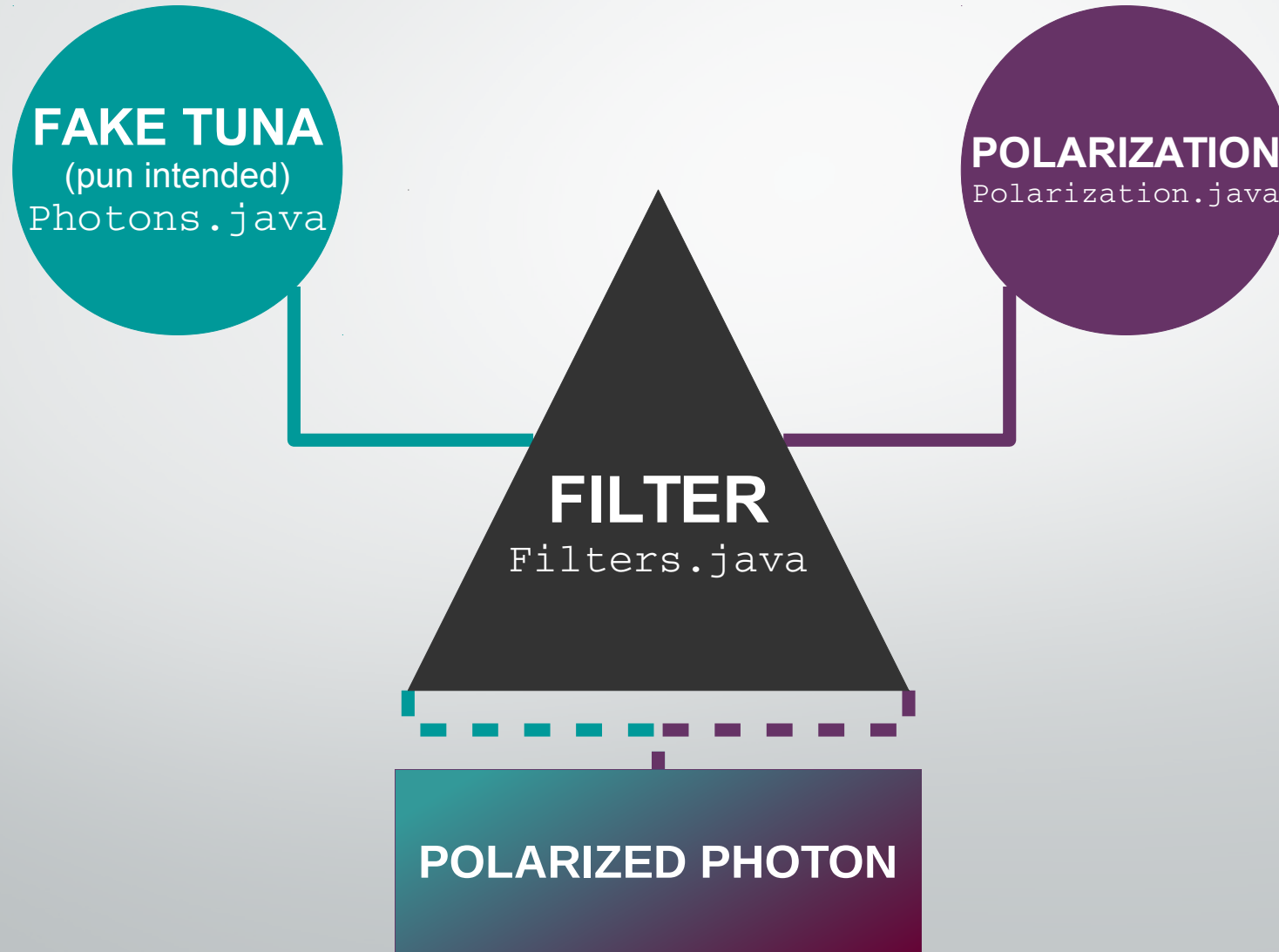


GUI (Graphical User Interface)

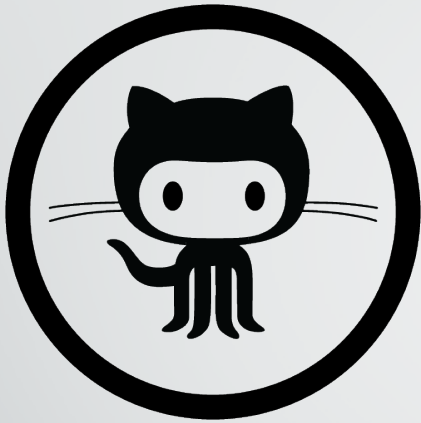
We used the Java Swing API

2

Quantum physics implementation



Team work



github
SOCIAL CODING

www.github.com/ArnaudGallardo/BB84

www.github.com/ArnaudGallardo/BB84-client

Benchmark



Apache POI - the Java API for Microsoft Documents

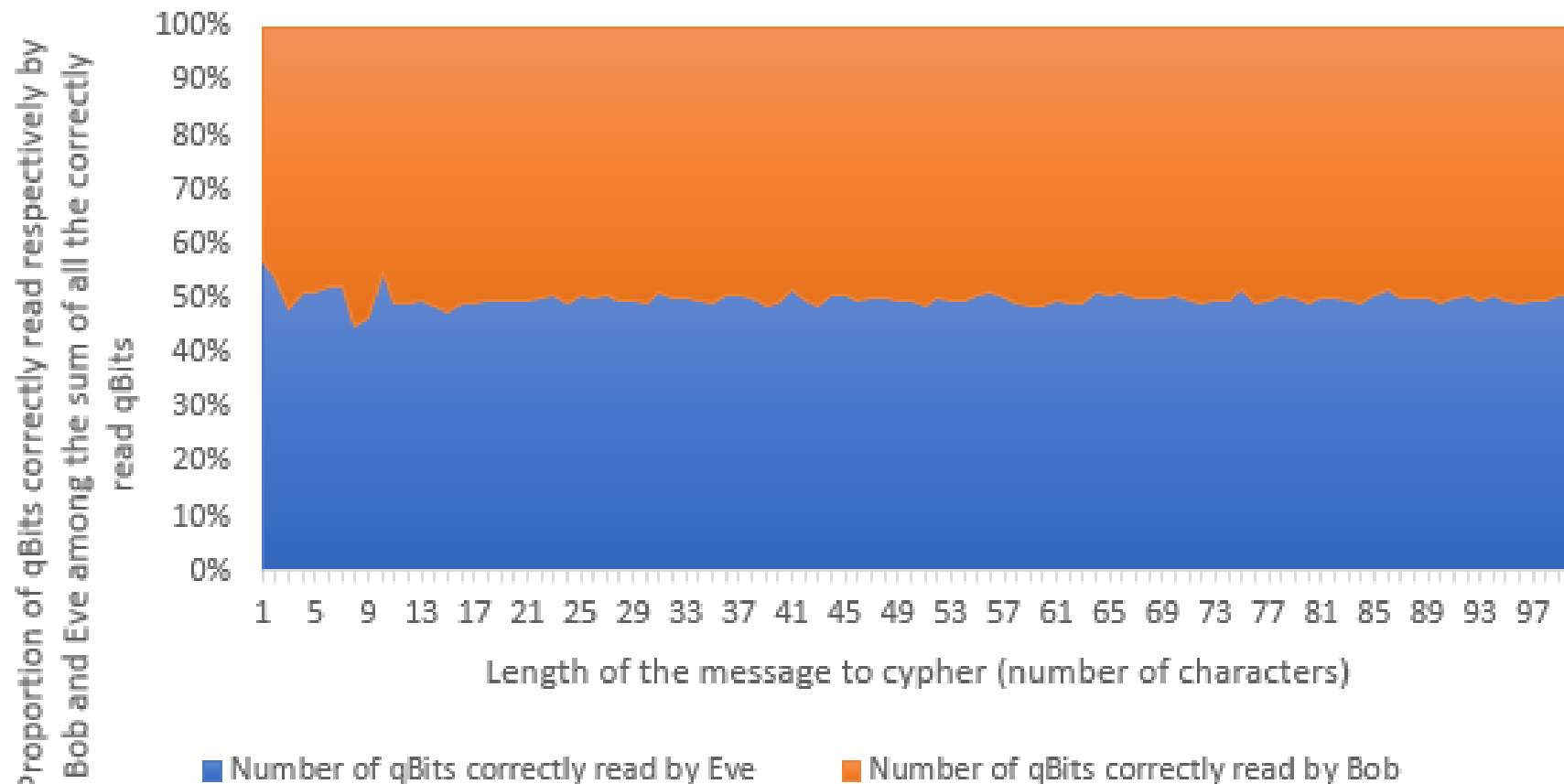
- Creating spreadsheets files
- Automatic simulation (21000 tests in 80 minutes with at the end more than 16 millions of photons simulated) and writing

Benchmark

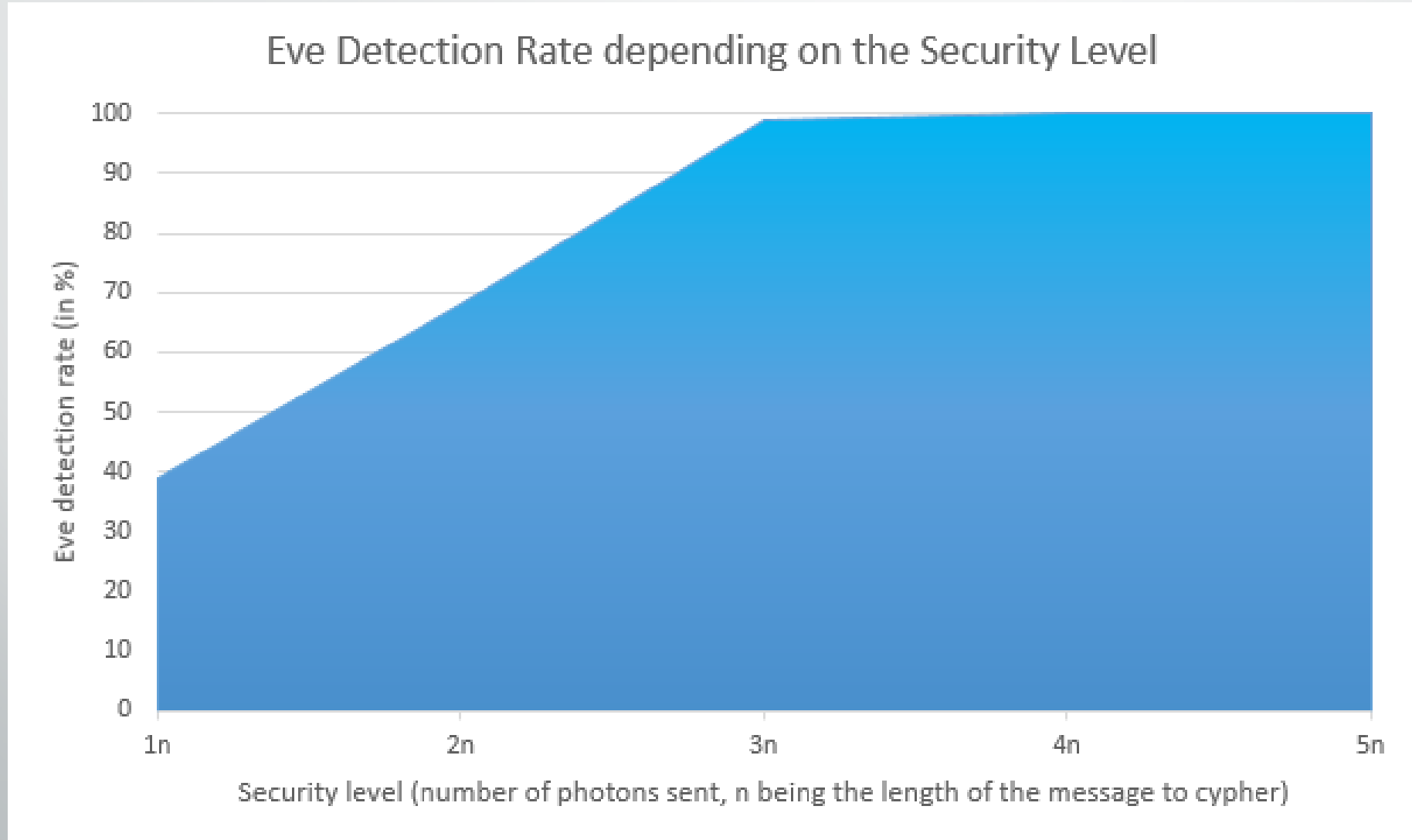
Length of the message	Number of Qbits sent by Alice	Number of Qbits correctly read by Eve	Number of Qbits correctly read by Bob	Number of sacrificed photons	Eve's detection
1	16	7	7	1	0
2	32	13	22	6	1
3	48	27	25	1	0
4	64	29	27	1	0
5	80	38	31	1	1
6	96	51	44	1	0
7	112	62	66	10	1
8	128	60	61	1	1
9	144	85	71	1	0
10	160	89	75	1	0
11	176	91	95	7	1
12	192	93	86	1	1
13	208	111	108	4	0
14	224	122	124	12	1
15	240	125	129	9	1
16	256	124	129	1	1
17	272	134	137	1	1
18	288	142	136	1	0
19	304	178	156	4	1
20	320	160	157	1	1
21	336	160	169	1	0
22	352	165	163	1	0
23	368	173	179	1	1
24	384	179	187	1	1
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Benchmark

Comparison between the qBits correctly read by Eve and the qBits correctly read by Bob



Benchmark



Benchmark

