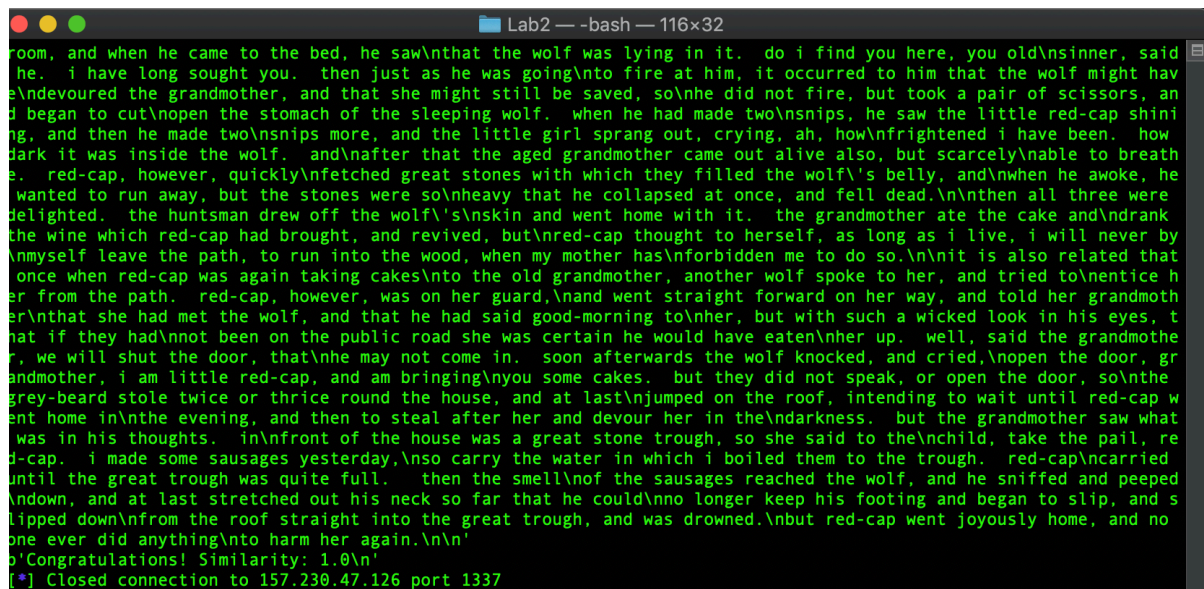


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Instructor's Name
13 February 2019

Security Lab 2

Cipher Breaking

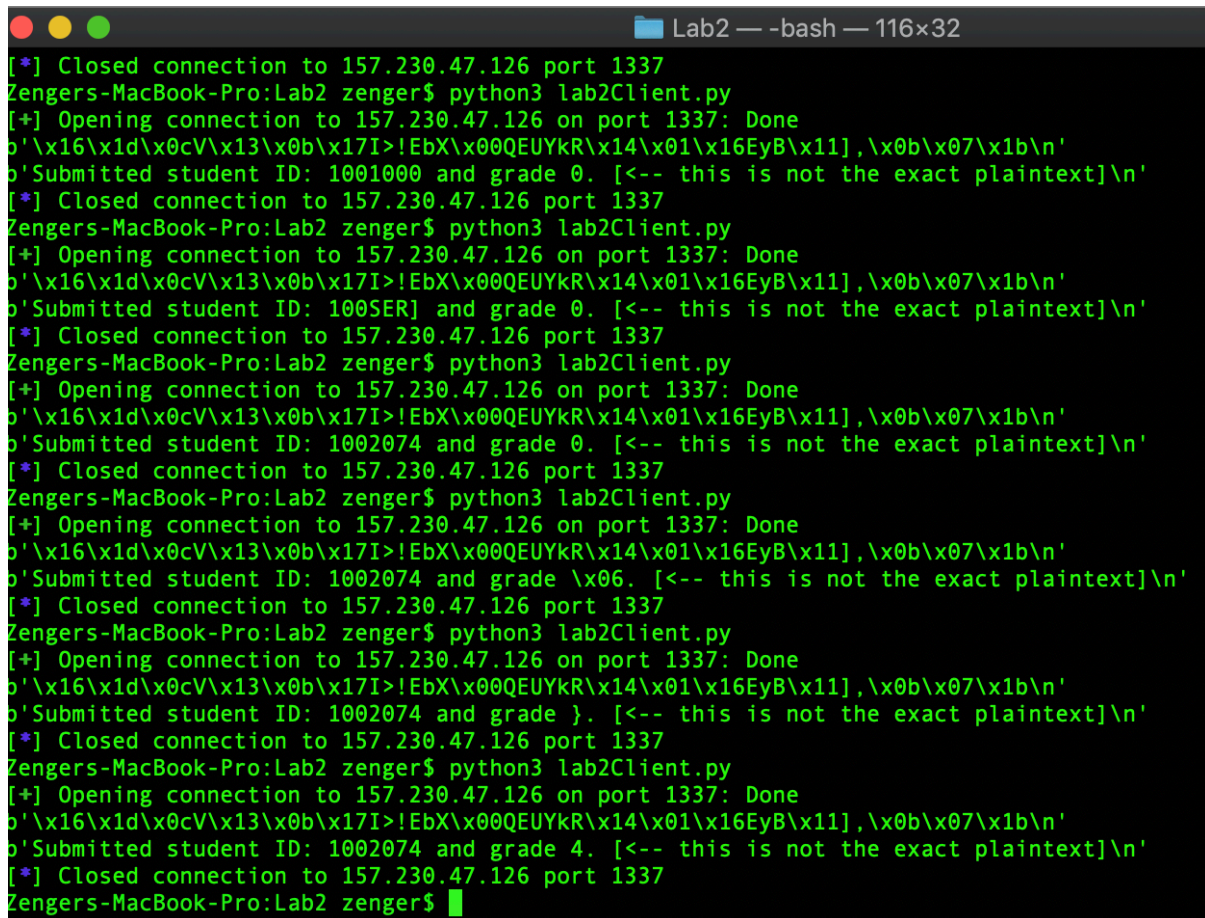
1. Frequency Analysis



```
Lab2 — -bash — 116x32
room, and when he came to the bed, he saw\nthat the wolf was lying in it. do i find you here, you old\nsinner, said
he. i have long sought you. then just as he was going\ninto fire at him, it occurred to him that the wolf might hav
e\ndevooured the grandmother, and that she might still be saved, so\nhe did not fire, but took a pair of scissors, an
d began to cut\nopen the stomach of the sleeping wolf. when he had made two\nsnips, he saw the little red-cap shini
ng, and then he made two\nsnips more, and the little girl sprang out, crying, ah, how\nfrightened i have been. how
dark it was inside the wolf. and\nafter that the aged grandmother came out alive also, but scarcely\nable to breath
e. red-cap, however, quickly\nfetched great stones with which they filled the wolf\'s belly, and\nwhen he awoke, he
wanted to run away, but the stones were so\nheavy that he collapsed at once, and fell dead.\n\nthen all three were
delighted. the huntsman drew off the wolf\'s\nskin and went home with it. the grandmother ate the cake and\ndrank
the wine which red-cap had brought, and revived, but\nred-cap thought to herself, as long as i live, i will never by
\nmyself leave the path, to run into the wood, when my mother has\nforbidden me to do so.\n\nit is also related that
once when red-cap was again taking cakes\ninto the old grandmother, another wolf spoke to her, and tried to\nentice h
er from the path. red-cap, however, was on her guard,\nand went straight forward on her way, and told her grandmoth
er\nthat she had met the wolf, and that he had said good-morning to\nher, but with such a wicked look in his eyes, t
hat if they had\nnot been on the public road she was certain he would have eaten\nher up. well, said the grandmothe
r, we will shut the door, that\nhe may not come in. soon afterwards the wolf knocked, and cried,\nopen the door, gr
andmother, i am little red-cap, and am bringing\nyou some cakes. but they did not speak, or open the door, so\nthe
grey-beard stole twice or thrice round the house, and at last\njumped on the roof, intending to wait until red-cap w
ent home in\nthe evening, and then to steal after her and devour her in the\ndarkness. but the grandmother saw what
was in his thoughts. in\nfront of the house was a great stone trough, so she said to the\nchild, take the pail, re
d-cap. i made some sausages yesterday,\nso carry the water in which i boiled them to the trough. red-cap\nncarried
until the great trough was quite full. then the smell\nof the sausages reached the wolf, and he sniffed and peeped
\ndown, and at last stretched out his neck so far that he could\nno longer keep his footing and began to slip, and s
lipped down\nfrom the roof straight into the great trough, and was drowned.\nbut red-cap went joyously home, and no
one ever did anything\ninto harm her again.\n\n
b'Congratulations! Similarity: 1.0\n'
[*] Closed connection to 157.230.47.126 port 1337
```

Answer screenshot of part I

3.2 OTP messages Integrity



```
Lab2 — -bash — 116x32
[*] Closed connection to 157.230.47.126 port 1337
Zengers-MacBook-Pro:Lab2 zenger$ python3 lab2Client.py
[+] Opening connection to 157.230.47.126 on port 1337: Done
b'\x16\xd\x0cV\x13\x0b\x17I>!EbX\x00QEUYkR\x14\x01\x16EyB\x11],\x0b\x07\x1b\n'
b'Submitted student ID: 1001000 and grade 0. [<-- this is not the exact plaintext]\n'
[*] Closed connection to 157.230.47.126 port 1337
Zengers-MacBook-Pro:Lab2 zenger$ python3 lab2Client.py
[+] Opening connection to 157.230.47.126 on port 1337: Done
b'\x16\xd\x0cV\x13\x0b\x17I>!EbX\x00QEUYkR\x14\x01\x16EyB\x11],\x0b\x07\x1b\n'
b'Submitted student ID: 1005ER] and grade 0. [<-- this is not the exact plaintext]\n'
[*] Closed connection to 157.230.47.126 port 1337
Zengers-MacBook-Pro:Lab2 zenger$ python3 lab2Client.py
[+] Opening connection to 157.230.47.126 on port 1337: Done
b'\x16\xd\x0cV\x13\x0b\x17I>!EbX\x00QEUYkR\x14\x01\x16EyB\x11],\x0b\x07\x1b\n'
b'Submitted student ID: 1002074 and grade 0. [<-- this is not the exact plaintext]\n'
[*] Closed connection to 157.230.47.126 port 1337
Zengers-MacBook-Pro:Lab2 zenger$ python3 lab2Client.py
[+] Opening connection to 157.230.47.126 on port 1337: Done
b'\x16\xd\x0cV\x13\x0b\x17I>!EbX\x00QEUYkR\x14\x01\x16EyB\x11],\x0b\x07\x1b\n'
b'Submitted student ID: 1002074 and grade \x06. [<-- this is not the exact plaintext]\n'
[*] Closed connection to 157.230.47.126 port 1337
Zengers-MacBook-Pro:Lab2 zenger$ python3 lab2Client.py
[+] Opening connection to 157.230.47.126 on port 1337: Done
b'\x16\xd\x0cV\x13\x0b\x17I>!EbX\x00QEUYkR\x14\x01\x16EyB\x11],\x0b\x07\x1b\n'
b'Submitted student ID: 1002074 and grade }. [<-- this is not the exact plaintext]\n'
[*] Closed connection to 157.230.47.126 port 1337
Zengers-MacBook-Pro:Lab2 zenger$ python3 lab2Client.py
[+] Opening connection to 157.230.47.126 on port 1337: Done
b'\x16\xd\x0cV\x13\x0b\x17I>!EbX\x00QEUYkR\x14\x01\x16EyB\x11],\x0b\x07\x1b\n'
b'Submitted student ID: 1002074 and grade 4. [<-- this is not the exact plaintext]\n'
[*] Closed connection to 157.230.47.126 port 1337
Zengers-MacBook-Pro:Lab2 zenger$
```

Answer screenshot of part II