

(Team details can be found at the end of the assignment)

Cipher Method: Substitution Cipher

Passcode: ciVs69Naml

Justification:

- i. At the first screen there was a trail thus we tried certain verbs like follow, climb and **climb** was the command.
- ii. On the next screen, text indicated something is written thus our first attempt was **read** which was the command.
- iii. Third screen asked to type command as **enter**.
- iv. Fourth screen directed towards the screen beside a closed door, thus command was **read**.
- v. First thoughts after seeing the cipher text was that either this is **Caesar Cipher** or **Substitution Cipher** as many words were repeating. We proceeded with Caesar Cipher and tried various shifts until we realized this isn't the one as none of the 26 shifts made sense.
- vi. Now, for Substitution Cipher we calculated frequencies of all the letters and then proceeded with the mappings.
- vii. From our initial analysis, z was the most occurring letter which we substituted with e. Also, viz was the most occurring word and z mapped to e so we made an assumption **viz ~ the**.
- viii. The word **zoyzsq** then reduced to **e_te_e_**
Which can only be '**entered**'.
- ix. There on other words were deduced as they started becoming obvious like **jue ~ you**.
- x. Mapping that we found is as below:
C - Cipher Alphabet, M – Mapped Alphabet

C	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
M	q			v	u	w	c	l	h	y	p	a	s	g	n	m	d	b	r		o	i		f	t	e

- xi. Thus, the deciphered command was: **ciVs92Naml**

- xii. Deciphered text said the digits are to be shifted by 6, thus we tried ***ciVs58Naml*** and ***ciVs36Naml*** as the commands but couldn't succeed.
- xiii. Now, we started looking for various word plays such as shifting the digits 6 places right to left & left to right.
- xiv. That's when we realized that digit 6 might be mapped to some other digit. So, we started iterating shifts from 0 to 9 and found the command to be: ***ciVs69Naml***

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