

Plaintext Alphabet	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
Plaintext Value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

**Vernam Cipher:** type of substitution cipher used for data encryption. The Vernam cipher was devised in 1918 by Gilbert S. Vernam.

**Ex1: Try to encrypt the following plaintext using Vernam cipher system:**

**Plaintext = VERNAMCIPHER**

**Key= 76 48 16 82 44 3 58 11 60 5 48 88**

<b>Plaintext</b>	V	E	R	N	A	M	C	I	P	H	E	R
<b>Letter Value</b>	21	4	17	13	0	12	2	8	15	7	4	17
<b>Key</b>	76	48	16	82	44	3	58	11	60	5	48	88
<b>Sum +</b>	97	52	33	95	44	15	60	19	75	12	52	105
<b>Mod 26</b>	19	0	7	17	18	15	8	19	23	12	0	1
<b>Cipher</b>	T	A	H	R	S	P	I	T	X	M	A	B

Plaintext Alphabet	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
Plaintext Value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

**Ex2: Try to decrypt the following ciphertext using Vernam cipher system:**

**Ciphertext= t a h r s p i t x m a b**

<b>Cipher</b>	<b>T</b>	<b>A</b>	<b>H</b>	<b>R</b>	<b>S</b>	<b>P</b>	<b>I</b>	<b>T</b>	<b>X</b>	<b>M</b>	<b>A</b>	<b>B</b>
<b>Letter Value</b>	<b>19</b>	<b>0</b>	<b>7</b>	<b>17</b>	<b>18</b>	<b>15</b>	<b>8</b>	<b>19</b>	<b>23</b>	<b>12</b>	<b>0</b>	<b>1</b>
<b>Key</b>	<b>76</b>	<b>48</b>	<b>16</b>	<b>82</b>	<b>44</b>	<b>3</b>	<b>58</b>	<b>11</b>	<b>60</b>	<b>5</b>	<b>48</b>	<b>88</b>
<b>Sub -</b>	<b>78</b>	<b>52</b>	<b>26</b>	<b>104</b>	<b>52</b>	<b>26</b>	<b>78</b>	<b>26</b>	<b>78</b>	<b>26</b>	<b>52</b>	<b>104</b>
	<b>76</b>	<b>48</b>	<b>16</b>	<b>82</b>	<b>44</b>	<b>3</b>	<b>58</b>	<b>11</b>	<b>60</b>	<b>5</b>	<b>48</b>	<b>88</b>
<b>Sum +</b>	<b>2</b>	<b>4</b>	<b>10</b>	<b>22</b>	<b>8</b>	<b>23</b>	<b>20</b>	<b>15</b>	<b>18</b>	<b>21</b>	<b>4</b>	<b>16</b>
	<b>19</b>	<b>0</b>	<b>7</b>	<b>17</b>	<b>18</b>	<b>15</b>	<b>8</b>	<b>19</b>	<b>23</b>	<b>12</b>	<b>0</b>	<b>1</b>
<b>Mod 26</b>	<b>21</b>	<b>4</b>	<b>17</b>	<b>39</b>	<b>26</b>	<b>38</b>	<b>28</b>	<b>34</b>	<b>41</b>	<b>33</b>	<b>4</b>	<b>17</b>
	<b>21</b>	<b>4</b>	<b>17</b>	<b>13</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>8</b>	<b>15</b>	<b>7</b>	<b>4</b>	<b>17</b>
<b>Plaintext</b>	<b>V</b>	<b>E</b>	<b>R</b>	<b>N</b>	<b>A</b>	<b>M</b>	<b>C</b>	<b>I</b>	<b>P</b>	<b>H</b>	<b>E</b>	<b>R</b>