LAB-2

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	ROII NO. : CE 196
	Name; Shingald Shybham P.
	ID NO. : 19 CEU05159
*	AIM: Write a Program to implement
	1) Extended Engiden Alsozirthm por Finding
	multiplicative inverse
	2) martipicative ciphex
	3) Affine cipher.
116 55	Conductor of the state of States
)	Extended Eyaiden Algorithm
	benefit to be the control of the part of the control of the contro
	# include < io Stream?
	using namespace std;
	int Extended - Engiden (int a, int b) §
	int 9, 2, t, t1=0, t2=1, 12=6, 12=0;
	while (2,70) &
	9= 1/2;
	R= R1 - 982;
	2, = 22;
	$R_2 = R$;
	t= t, - 9*t2;
	t1 = t2;
	t2= t;
	A Comment of the comm

```
if ( &1 = = 1 ) $
       if (+1 <0)
      tl += b;
       getyen ti;
  con retirance;
   3h 1818 - reals put you specific.
      La ser ment - Avis in his ment
    int main () & main (2
      int alb ; and
        cout << " Enter two numbers: "<< end);
       cin >> a >> bind toler
         if ( int ans = Extended _ Eyeliden (a, b)) &
          cont << " maltiplicative inverse
          is " << ans;
         4
(definition else & shirt things of the
cont KI multiplicative inverse is
                 mat Possible";
         setism o;
```

→ ·	Test-case - 1: Imput: 2 4
	outfut: multipricatione inverse is not possible
	As a series of the series of t
	Test-case - 2: Input: 5 21
	outfut: multiplicative inverse is 17
	Cours are the control of the course were the first the course of the cou
>	Test-case - 3: Input: 11 7
	output: multiplicative inverse is 2
- 0 256	FROM AND
	A COMPANY OF RESTRICTIONS
2)	multiplicative cipher
	# include < io Stream)
	using namespace std;
- 7 (NOT 349)	bool gcd (int key, int nymber) &
· · · · · · · · · · · · · · · · · · ·	anie (keyro) E
	int temp = Key;
	Key = number 1. key
3 (4, 1) (3) 14	nymber = temp;
of welling	Participant of the contract of
7 2 (1915a)	if (nymber = = 1)
	Retyron trye;
	Return faise;
	The house the second of the se
	int mutipricottive Inverse (int el, int b) ?
	11 it is same as previous programs
	2 Extended - Endidean Function

```
String encrypt (string plain Text, int kg) ?
        string encrypt Text;
        int length = plain Teat length ()
        i, text map;
       for ( i=0; ix length; i++) is
             if (is supper (Plain Texa [i]))
              textMap = AcimText[i] - 'A';
             elsevision is now in the proper
                textmap = prain Toot [i] - a':
             encryPt Text += (text map * key) 1/26
                       STATE MATE
        retyrm encrypt Texts
  string decrypt (string encrypt Text, int key) ?
         int inverse key = multiplicative_inverse(
          the key 26);
         string decrypt Text;
         for (int i=0; i(encryptText, length(); it) {
             int text map = encrypt text [i] - 'A';
             text map = ( text map * Inverseker) 126;
              if (textmap <0)
               textmap + = 26;
              decrypt Text + = textmap + 'a';
          4
          retyrn decrypt Text;
```

```
int main () {
        string plain Text ; int key;
       cout << " Enter Plain Text: "
        ein >> Pain Text;
        cout << "menter Key:";
      ein >> Key;
        while ( 1 9cd ( Key, 26)) ₹
        cout « "Enter Key again:
  cin >7 Key;
           4
 String encryp Text = encrypt (painText,
      Cout << " Encrypt Text:" << encrypt Text

// Deckypt Text: " <</pre>
deckypt (encrypt Text, key);
   -> Test case - 1:
  Imput; shubham shingald key = 7
 onthit: encly Pt text: WXKHXACON'X ENQAZA
   decry pt teact: 5 hybram shingala
Input : hello Key = 4
    ontent: Enter key again: 9
     - PARCEY Pt TEXT : LKVVW
         decrypt Text , Hello
```

3) Appine ciphe? # include (iostream) 45 mg mespace stel; 1.3100 NOV > 1700 bool gcd Cin+ KEY, int ory-on bell) 11 is some as Previous code int multiplicative inverse (intel, int b) 11 is same as psevious code string enchypt (string PlainText, int keyl, int Key2) \$ string encrypt Text; Face (int i=0; ix prain Text. length(); itt) 5 int text Map = Phin Text [i]; if (isupper (text map)) -teachmap -= 'A'; else textmap - = ind'; encrypt Text += ((text map * Key)) + Key 2) % 26 + A'; setyem enchypt Text, susit year arrest

String decrypt (string encrypt Text, int key) , int keg 2) 5 string decrypt Text; int Inverse key1 = multiplicative_inverse (Key1, 26) 3 FOR (int i=0; ix encrypt Text. longth(); i++)? int textmap = encrypt Text[i]-'A'; textmop = ((textmap - key2)* Inverse Key1) 9 % 26 3 DITTERMED SIF (texting P · (0) +unio handle residence to the text text map + = 26; declypt Text + = textmap + a'; 3 Return decrypt Texas 3 int main () 5 string Pain Teat i COUL K " Enter plain Text: Vn"; ein >> PlainText; int keyl, Keyl; cout << " Forteg Key 1;"; cin >> Key/ cout << "Enter Key2:"; on >> Key 2 string encrypt Text = encrypt (Plain Text Keyl Key2) ;

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Test case -1:

Input: Shubham Shingald Key1=7 Key2=12

Pecrypt Text: IJWTJMSIJQZEMLM

Pecrypt Text: Shybkim shingala

Test case -2:

Imput: appine Cipher Kegz=17 Key2=9

Decky pt Text: CIFFINE CIPHER.