**Encryption:**

Entered the Mode e: Encryption d:Decryption e

Mode chosen is E

Enter the Credit card number9999999999999999

Credit card number entered is = 9999999999999999

Credit card header digits = 99

Digits extracted in array are 9999999999999999

Credit card Issuer Identification number is 9999

Output maskL = 976 , maskR = 575

Loop counter 1 Fiestal input 575d Fiestal output 2279043591d,

Fiestal output 1 enc output 589663d enc output masked 3903401103d 143 out\_R1 863

Loop counter 2 Fiestal input 575d Fiestal output 3081829535d,

Fiestal output 2 enc output 589098d enc output masked 596309754d 762 out\_R1 298

Loop counter 3 Fiestal input 575d Fiestal output 71043986d,

Fiestal output 3 enc output 588996d enc output masked 2817867540d 788 out\_R1 196

Loop counter 4 Fiestal input 575d Fiestal output 1894017820d,

Fiestal output 4 enc output 589228d enc output masked 2417777276d 636 out\_R1 428

Loop counter 5 Fiestal input 575d Fiestal output 1393951532d,

Fiestal output 5 enc output 589606d enc output masked 1968702710d 246 out\_R1 806

Loop counter 6 Fiestal input 575d Fiestal output 2789326667d,

Fiestal output 6 enc output 589118d enc output masked 1103598d 750 out\_R1 318

Loop counter 7 Fiestal input 575d Fiestal output 376743245d,

Fiestal output 7 enc output 588932d enc output masked 945968980d 852 out\_R1 132

Loop counter 8 Fiestal input 575d Fiestal output 2227048522d,

Fiestal output 8 enc output 588869d enc output masked 4001953685d 917 out\_R1 69

Loop counter 9 Fiestal input 575d Fiestal output 4201472964d,

Fiestal output 9 enc output 589484d enc output masked 3967380860d 380 out\_R1 684

Loop counter 10 Fiestal input 575d Fiestal output 4222744662d,

Fiestal output 10 enc output 589211d enc output masked 1281803851d 587 out\_R1 411

Loop counter 11 Fiestal input 575d Fiestal output 36977527d,

Fiestal output 11 enc output 589719d enc output masked 1667038279d 71 out\_R1 919

Loop counter 12 Fiestal input 575d Fiestal output 386756359d,

Fiestal output 12 enc output 589226d enc output masked 3989848698d 634 out\_R1 426

Loop counter 13 Fiestal input 575d Fiestal output 2191257497d,

Fiestal output 13 enc output 589270d enc output masked 2153664006d 518 out\_R1 470

Loop counter 14 Fiestal input 575d Fiestal output 611834472d,

Fiestal output 14 enc output 589201d enc output masked 610787905d 577 out\_R1 401

Loop counter 15 Fiestal input 575d Fiestal output 4277621246d,

Fiestal output 15 enc output 589418d enc output masked 460873146d 442 out\_R1 618

Loop counter 16 Fiestal input 575d Fiestal output 4235340282d,

Fiestal output 16 enc output 589267d enc output masked 3591754243d 515 out\_R1 467

Fiestal output after N rounds is = 589267

Fiestal output after swap= 478783

Encrypted credit card number is 9999994787839999

**Decryption:**

Entered the Mode e: Encryption d:Decryption d

Mode chosen is D

Enter the Credit card number9999994787839999

Credit card number entered is = 9999994787839999

Credit card header digits = 99

Digits extracted in array are 9999994787839999

Credit card Issuer Identification number is 9999

Message to be Decrypted 478783

Output maskL = 467 , maskR = 575

Loop counter 1 Fiestal input 575d Fiestal output 2279043591d,

Fiestal output 1 enc output 589148d enc output masked 3903401103d 143 out\_R1 348

Loop counter 2 Fiestal input 575d Fiestal output 3081829535d,

Fiestal output 2 enc output 589609d enc output masked 596309754d 762 out\_R1 809

Loop counter 3 Fiestal input 575d Fiestal output 71043986d,

Fiestal output 3 enc output 589511d enc output masked 2817867540d 788 out\_R1 711

Loop counter 4 Fiestal input 575d Fiestal output 1894017820d,

Fiestal output 4 enc output 589743d enc output masked 2417777276d 636 out\_R1 943

Loop counter 5 Fiestal input 575d Fiestal output 1393951532d,

Fiestal output 5 enc output 589093d enc output masked 1968702710d 246 out\_R1 293

Loop counter 6 Fiestal input 575d Fiestal output 2789326667d,

Fiestal output 6 enc output 589629d enc output masked 1103598d 750 out\_R1 829

Loop counter 7 Fiestal input 575d Fiestal output 376743245d,

Fiestal output 7 enc output 589447d enc output masked 945968980d 852 out\_R1 647

Loop counter 8 Fiestal input 575d Fiestal output 2227048522d,

Fiestal output 8 enc output 589382d enc output masked 4001953685d 917 out\_R1 582

Loop counter 9 Fiestal input 575d Fiestal output 4201472964d,

Fiestal output 9 enc output 588975d enc output masked 3967380860d 380 out\_R1 175

Loop counter 10 Fiestal input 575d Fiestal output 4222744662d,

Fiestal output 10 enc output 589720d enc output masked 1281803851d 587 out\_R1 920

Loop counter 11 Fiestal input 575d Fiestal output 36977527d,

Fiestal output 11 enc output 589204d enc output masked 1667038279d 71 out\_R1 404

Loop counter 12 Fiestal input 575d Fiestal output 386756359d,

Fiestal output 12 enc output 589737d enc output masked 3989848698d 634 out\_R1 937

Loop counter 13 Fiestal input 575d Fiestal output 2191257497d,

Fiestal output 13 enc output 589781d enc output masked 2153664006d 518 out\_R1 981

Loop counter 14 Fiestal input 575d Fiestal output 611834472d,

Fiestal output 14 enc output 589714d enc output masked 610787905d 577 out\_R1 914

Loop counter 15 Fiestal input 575d Fiestal output 4277621246d,

Fiestal output 15 enc output 588905d enc output masked 460873146d 442 out\_R1 105

Loop counter 16 Fiestal input 575d Fiestal output 4235340282d,

Fiestal output 16 enc output 589776d enc output masked 3591754243d 515 out\_R1 976

Fiestal output after N rounds is = 589776

Fiestal output after swap= 999999

Decrypted credit card number is 9999999999999999