

استخدام شبكة (Hebbian) في التشفير Using Hebbian Network for Encryption

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Abstract

This research contains two parts, in the first part, a ciphering system is built using the classical Hebbian network to protect data against many expected threats during the transfer of the data. In the second part, deciphering has been built by using the Hebbian neural network.

The time has been calculate for both cipher and decipher. In the ciphering process, a Hebbian network has been developed through a qualitative primary weight which has large value. Then, an equation has been applied to minimize the weight matrix. Here, The idea of Stream Ciphering has been used so as to feed the network entries at the ciphering stage. The work has been applied by using (Visual Basic) language, issue (6.0) with the Object Oriented Programming (OOP) on a computer of the (P III, 600MHz) type.

(Hebbian)

.(Hebbian)

(Hebbian)

(6.0)

(Visual Basic)

.(PIII,600MHz)

.1

. [4]

(Hebbian)

.(Hebbian)

.2 **:Hebbian**

.1949 (Donald Hebb)

(Hebbian)

(Hebbian learning Rule)

(Hebb)

. [7][1]

(Hebbian)

(Hebbian)

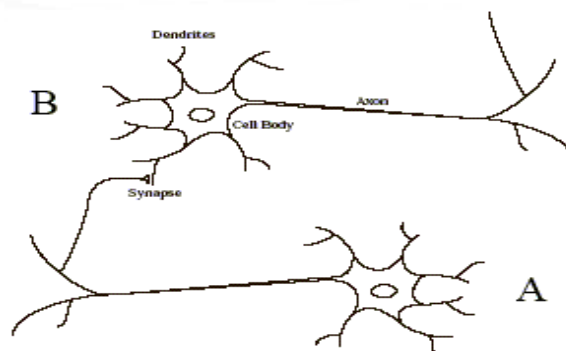
(B)

(A)

(B) (A)

(Learning from Memory)

. [10](1)



(1)

: (Hebbian)

(Hebbian)

. [9]

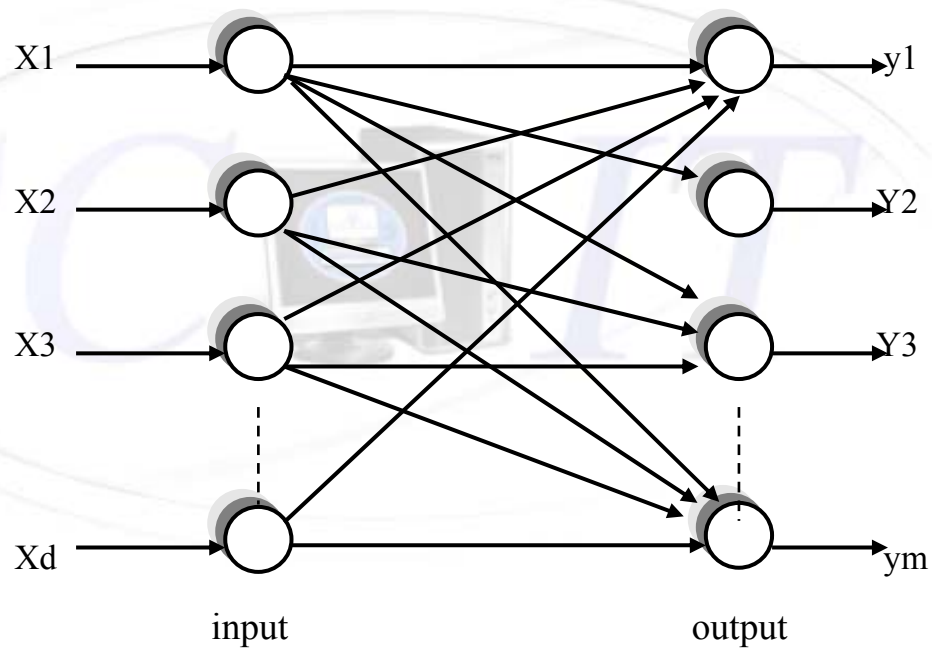
(Hebbian)

. [6]

:(Hebbian)

(Hebbian)

(2)



(2)

(Hebbian)

[3]:

.(Hebbian)

.(Hebbian)

(Hebbian)

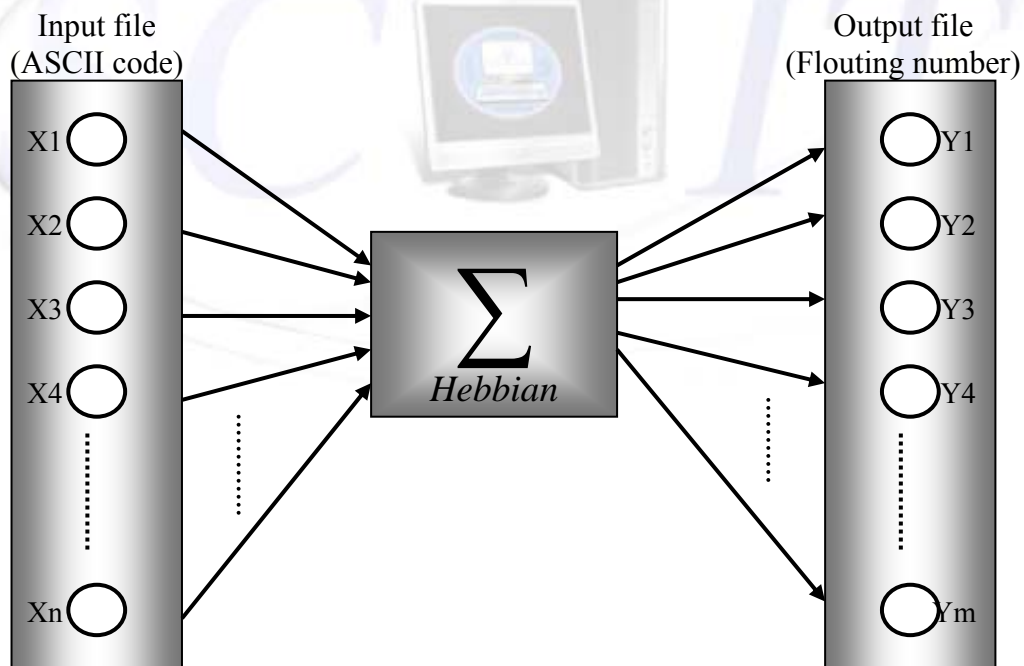
[10]

.[6]

. 3

-:[3]((3))

(Hebbian)

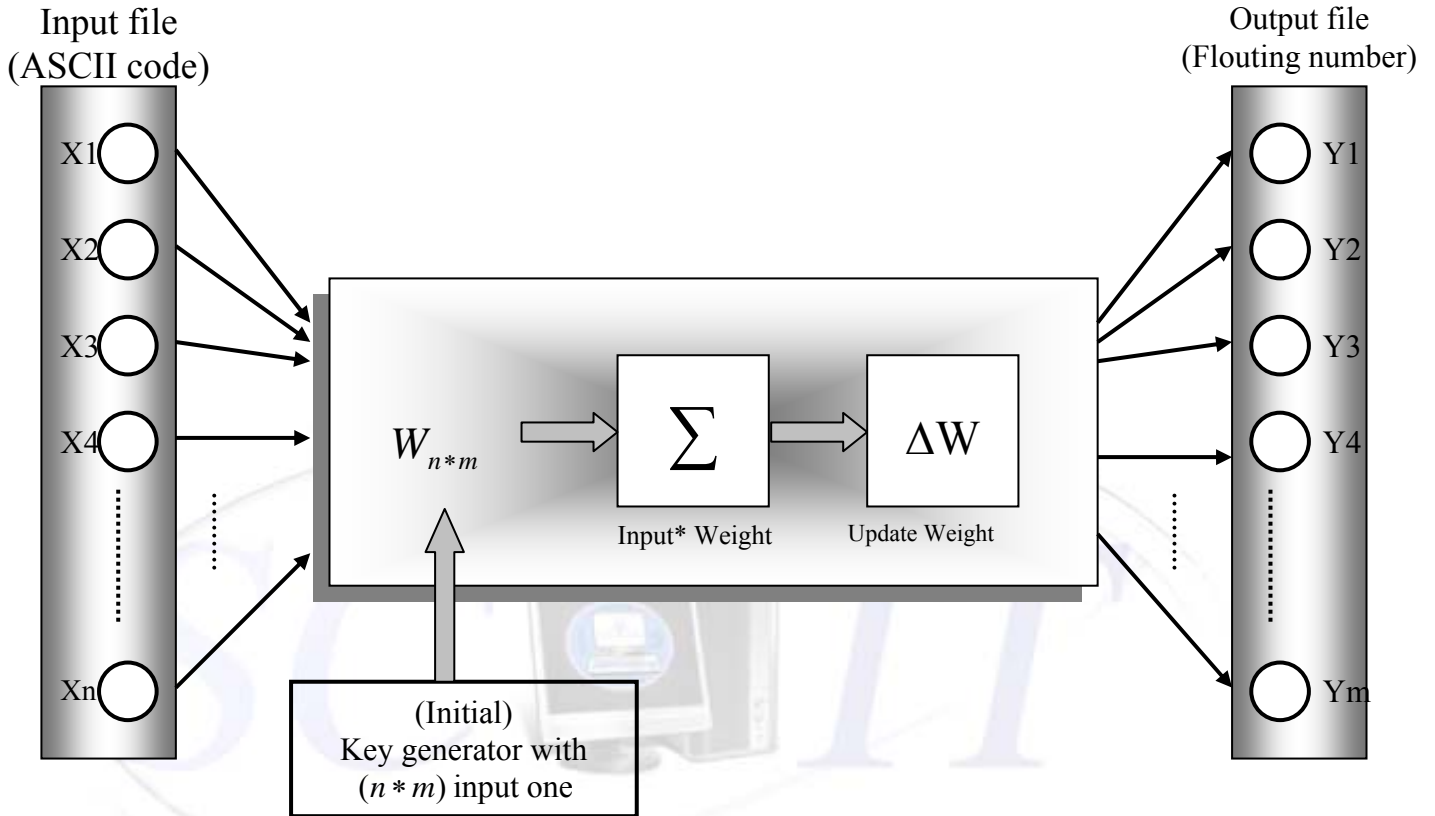


(3)

(Hebbian)

-1
-2
-3

.(4))



(4)

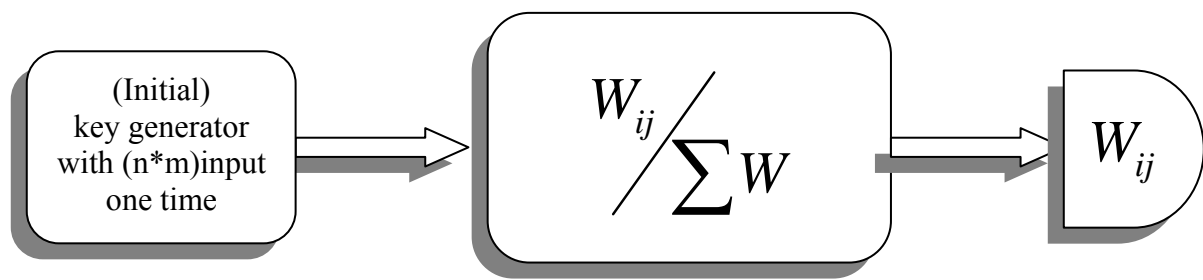
(Hebbian)

(Normalization)

-4

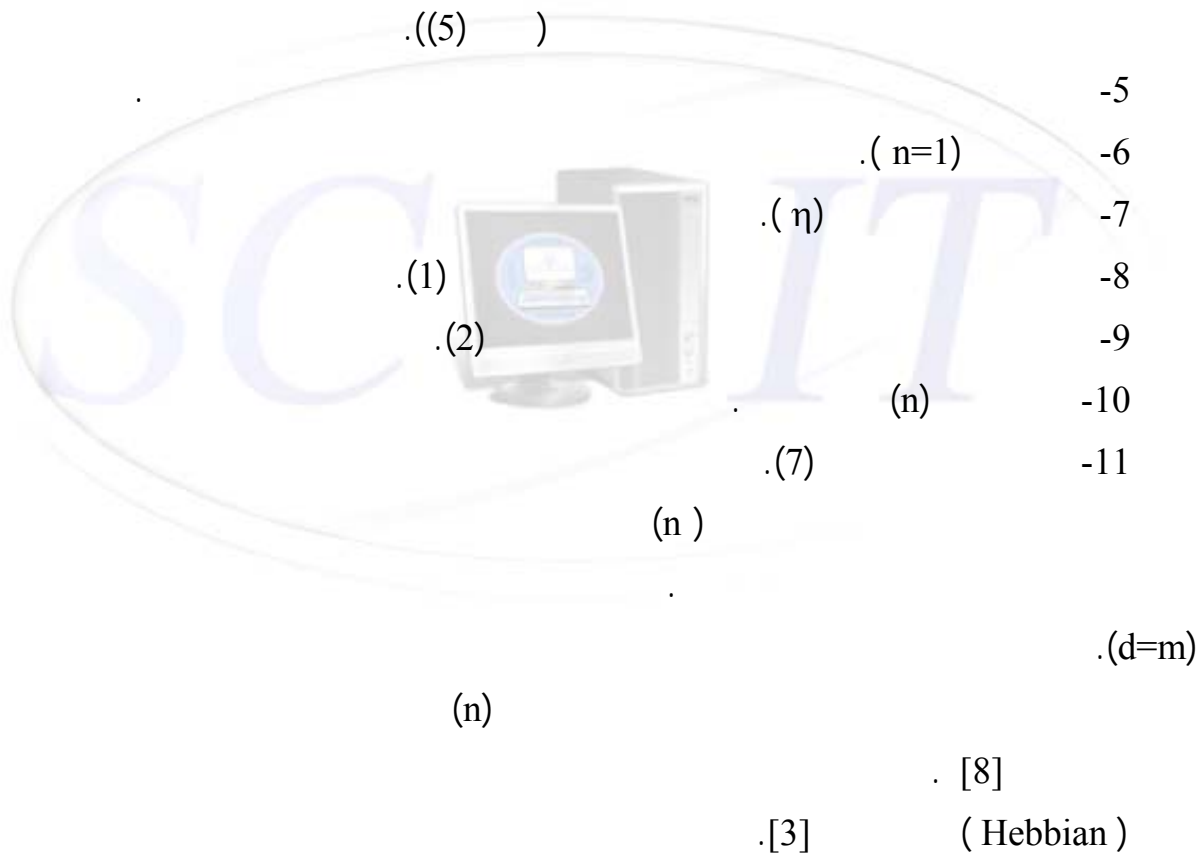
:

$$W_{ij} = \frac{W_{ij}}{\sum W} \dots\dots (3)$$



(5)

(Normalization)



: .4

(Hebbian)

:-[3]((6))

.1

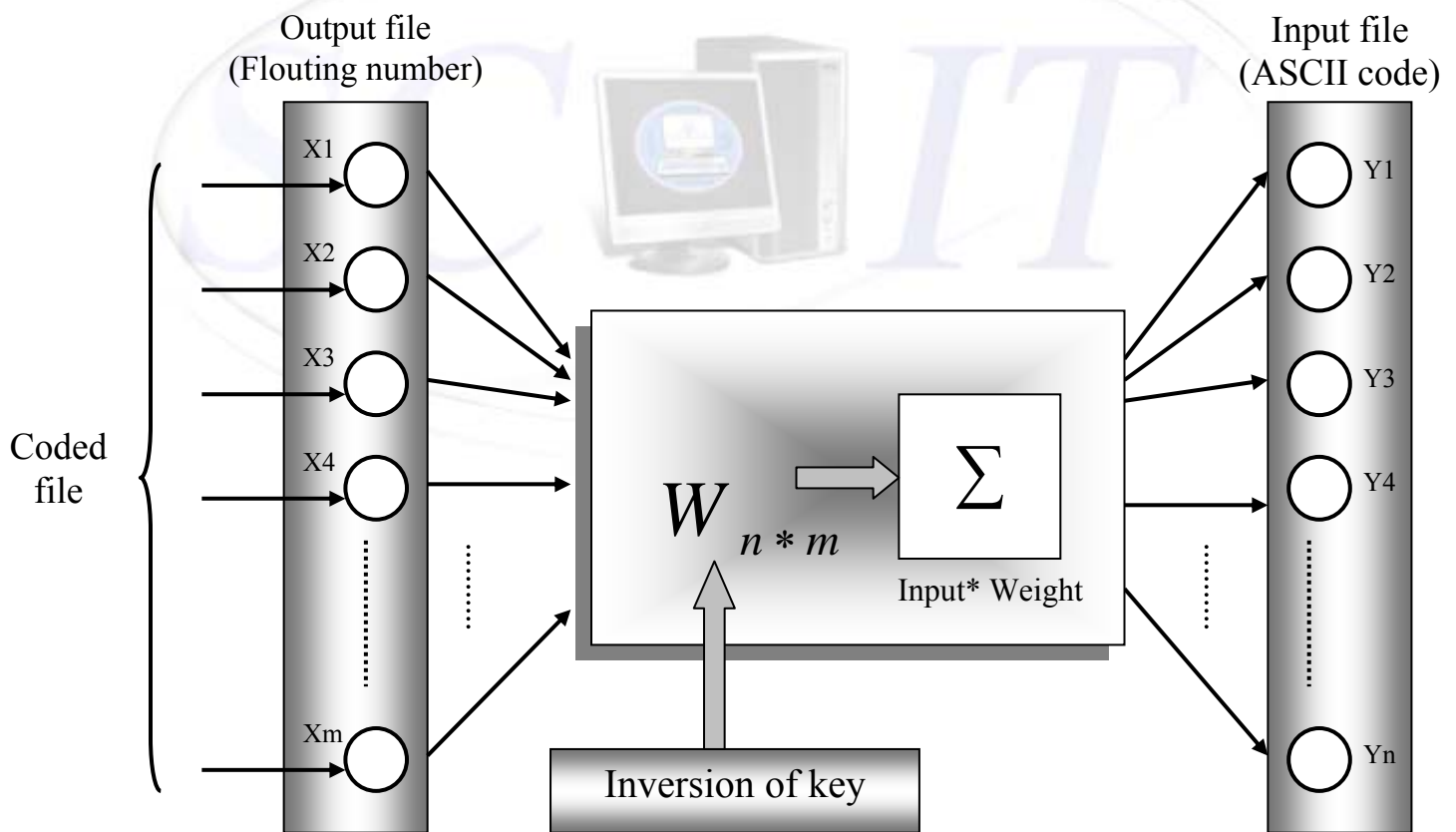
.2

) .3

(2)

.(1) .4

.5



(6)

(Hebbian)

(Hebbian)

[3]

: 5

[3]:

.(/)

.1

.2

.(/)

.3

:

()

.4

.()

-() =

(8)

.6

:

[5][2]Visual Basic 6.0

.7

(7)

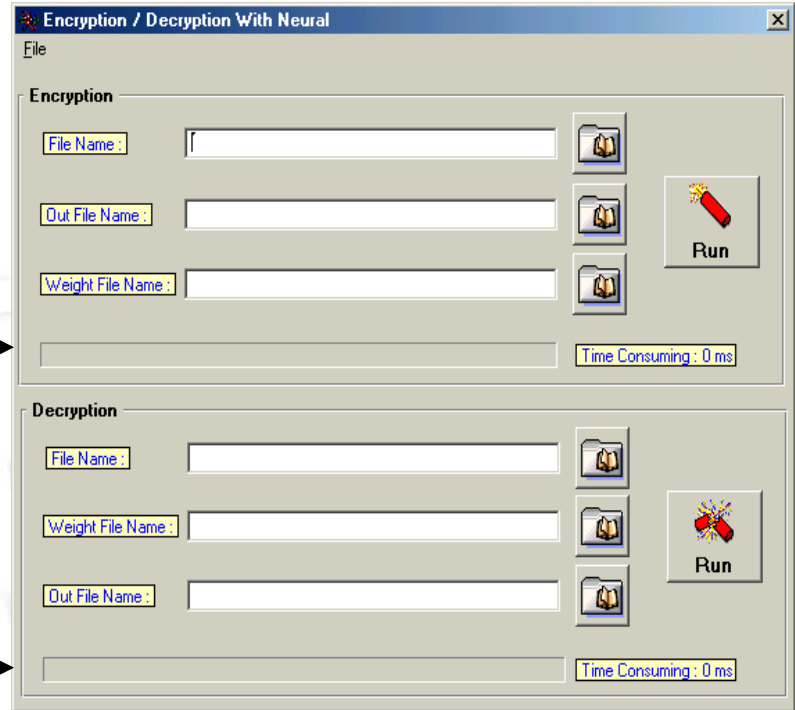
:

:

:

الجزء الاعلى

الجزء الاسفل

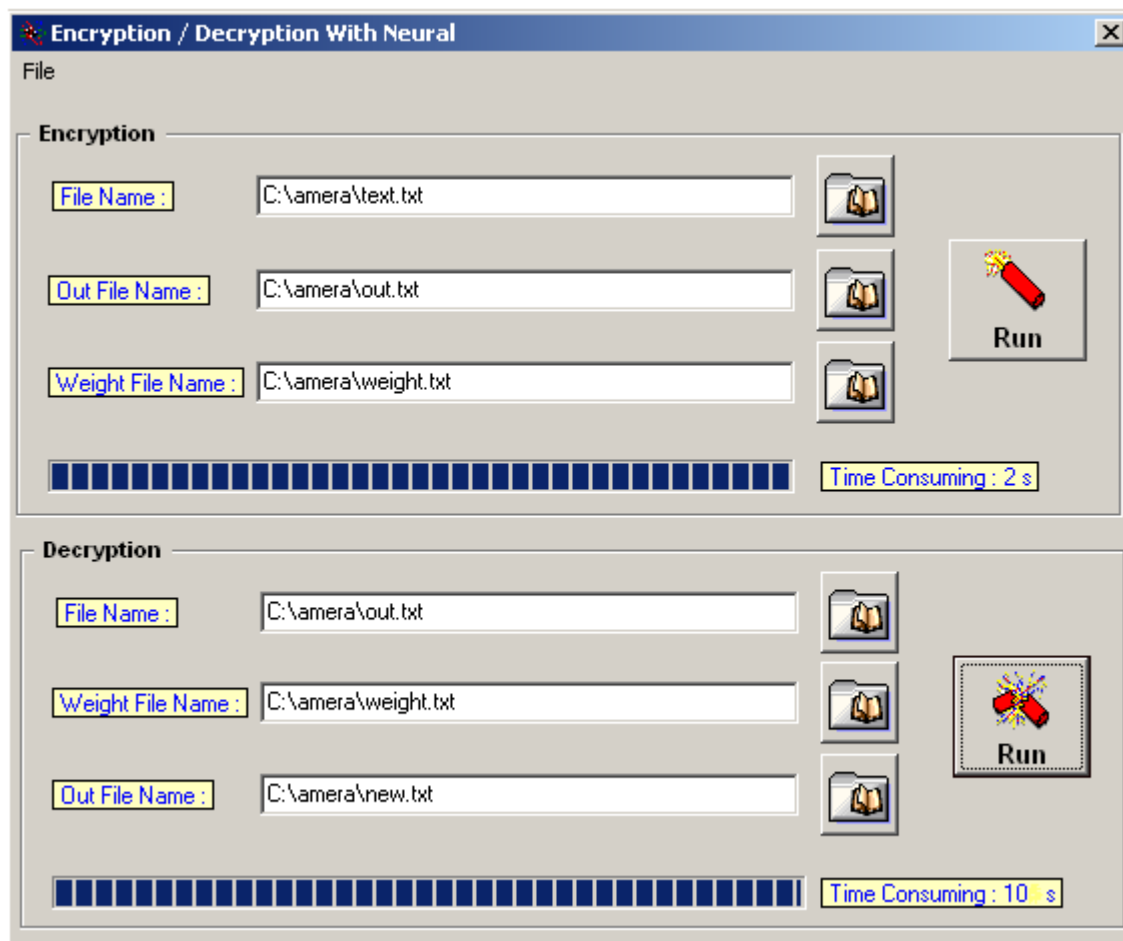


(7)

2s

10s

(8)



(8)

: .8

: ___ ❖

: (Test.txt) •
Microsoft Corporation

: (Output.txt) •

229472	270831	350196	224732	316244	366492	232854
277980	229456	295496	171597	280570	277579	276161
304861	294848	317306	298337	347712	332726	282559

: (New.txt)
Microsoft Corporation

.(Hebbian)

(Hebbian)

() () .

()

(%100)



() .

()

(Hebbian)

(Hebbian)

)

.6

(Backprobagation)

1. " " : (2000)
2. "Visual basic 5.0 " : (1997)
3. " (Hebbian) " : (2003)
4. Np- (GA-Hf) " : (2002)
"problem (TSMP)
5. " Visual basic 6.0 " : (1999)

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9. WWW.csse.monash.edu.au/~app/L01.pdf.
10. WWW.cs.hmc.edu/courses/ch07-pres.pdf.