

APPENDIX A

CODE OF MICROCONTROLLER

```

$regfile = "m32def.dat"
$crystal = 1000000
Config Kbd = Portc
Config Lcd = 16 * 2
Config Porta = Output
Config Portb = Output
Config Lcdpin = Pin , Db4 = Portb.0 , Db5 = Portb.1 , Db6 = Portb.2 , Db7 =
Portb.3 , E = Portb.4 , Rs = Portb.5

Dim B1 As Byte
Dim Y(4) As Byte , Z As Byte , I As Integer
Dim X(4) As Byte           'device 1
Dim E(4) As Byte           'device 2
Dim G(4) As Byte           'device 3
Dim R(4) As Byte           'device 4
Dim S(4) As Byte           'device 5
Dim T(4) As Byte           'device 6
Dim U(4) As Byte           'device 7
Dim V(4) As Byte           'device 8
Dim W(4) As Byte           'device 9
Dim D As Integer
Dim B As Integer

'#####

Do

```

```

Cls
Lcd " Hellow"
Waitms 1000
'*****

Gosub Sd                                'select device
'*****

Gosub Lu                                'lock or unlock

Waitms 2000
Loop
'#####

Sd:                                     'select device
Z = 16
Cls
Lcd "Enter Dev Number "
While Z = 16
Z = Getkbd()
Waitms 1000
Wend
B1 = Lookup(z , Dta)
If B1 = 20 Then
Porta = 255
Portb.6 = 1
Goto Sd
End If
D = B1
Cls
Locate 1 , 1

```

Lcd " DEVICE"

Locate 1 , 8

Lcd D

Waitms 2000

Return

Lu: 'lock or unlock

Z = 16

Cls

Lcd "press lock/unlock Key "

While Z = 16

Z = Getkbd()

Waitms 1000

Wend

B1 = Lookup(z , Dta)

B = B1

If B = 24 Then Goto Enterpass 'lock

If B = 25 Then Goto Entercode ' unlock

Return

Entercode:

%%%%%%%%%%

If D = 1 Then

If Porta.0 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 2 Then

If Porta.1 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 3 Then

If Porta.2 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 4 Then

If Porta.3 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 5 Then

If Porta.4 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 6 Then

If Porta.5 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 7 Then

If Porta.6 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 8 Then

If Porta.7 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 9 Then

If Portb.6 = 1 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

'%%%

Cls

Lcd "Enter Code"

Waitms 1000

Cls

For I = 1 To 4

Z = 16

```

While Z = 16
Z = Getkbd()
Waitms 1000
Wend
B1 = Lookup(z , Dta)
If B1 = 21 Then Goto Entercode
Y(i) = B1
Lcd "*"
Waitms 2000
Next I
Gosub Compare
Return

```

```

'*****

```

```

Enterpass:

```

```

'%%%%%%%%%

```

```

If D = 1 Then

```

```

If Porta.0 = 0 Then

```

```

Cls

```

```

Lcd "error"

```

```

Waitms 1000

```

```

Goto Sd

```

```

End If

```

```

End If

```

```

If D = 2 Then

```

```

If Porta.1 = 0 Then

```

```

Cls

```

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 3 Then

If Porta.2 = 0 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 4 Then

If Porta.3 = 0 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 5 Then

If Porta.4 = 0 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 6 Then

If Porta.5 = 0 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 7 Then

If Porta.6 = 0 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 8 Then

If Porta.7 = 0 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

If D = 9 Then

If Portb.6 = 0 Then

Cls

Lcd "error"

Waitms 1000

Goto Sd

End If

End If

%%%

Cls

Lcd "create Password"

Waitms 1000

Cls

For I = 1 To 4

Z = 16

While Z = 16

Z = Getkbd()

Waitms 1000

Wend

B1 = Lookup(z , Dta)

If B1 = 21 Then Goto Enterpass

If D = 1 Then X(i) = B1

If D = 2 Then E(i) = B1

```
If D = 3 Then G(i) = B1
If D = 4 Then R(i) = B1
If D = 5 Then S(i) = B1
If D = 6 Then T(i) = B1
If D = 7 Then U(i) = B1
If D = 8 Then V(i) = B1
If D = 9 Then W(i) = B1
```

```
Lcd "*"

```

```
Waitms 2000

```

```
Next I

```

```
If D = 1 Then Porta.0 = 0
If D = 2 Then Porta.1 = 0
If D = 3 Then Porta.2 = 0
If D = 4 Then Porta.3 = 0
If D = 5 Then Porta.4 = 0
If D = 6 Then Porta.5 = 0
If D = 7 Then Porta.6 = 0
If D = 8 Then Porta.7 = 0
If D = 9 Then Portb.6 = 0

```

```
Return

```

```
*****

```

```
Compare:

```

```
If D = 1 Then Goto Dev1
If D = 2 Then Goto Dev2
If D = 3 Then Goto Dev3
If D = 4 Then Goto Dev4

```

```
If D = 5 Then Goto Dev5
If D = 6 Then Goto Dev6
If D = 7 Then Goto Dev7
If D = 8 Then Goto Dev8
If D = 9 Then Goto Dev9
Return
```

Dev1:

```
If Y(1) = X(1) Then
If Y(2) = X(2) Then
If Y(3) = X(3) Then
If Y(4) = X(4) Then
Porta.0 = 1
Else
Cls
Lcd "ERROR"
Portb.7 = 1
Waitms 1000
Portb.7 = 0
End If
```

```
Else
Cls
Lcd "ERROR"
Portb.7 = 1
Waitms 1000
Portb.7 = 0
End If
```

```
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000  
Portb.7 = 0  
End If
```

```
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000  
Portb.7 = 0  
End If  
Return
```

```
Dev2:  
If Y(1) = E(1) Then  
If Y(2) = E(2) Then  
If Y(3) = E(3) Then  
If Y(4) = E(4) Then  
Porta.1 = 1  
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1
```

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Return

Dev3:

If Y(1) = G(1) Then

If Y(2) = G(2) Then

If Y(3) = G(3) Then

If Y(4) = G(4) Then

Porta.2 = 1

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Return

Dev4:

If Y(1) = R(1) Then

If Y(2) = R(2) Then

If Y(3) = R(3) Then

If Y(4) = R(4) Then

Porta.3 = 1

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Return

Dev5:

If Y(1) = S(1) Then

If Y(2) = S(2) Then

If Y(3) = S(3) Then

If Y(4) = S(4) Then

```
Porta.4 = 1  
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000  
Portb.7 = 0  
End If
```

```
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000  
Portb.7 = 0  
End If
```

```
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000  
Portb.7 = 0  
End If
```

```
Else  
Cls  
Lcd "ERROR"
```

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Return

Dev6:

If Y(1) = T(1) Then

If Y(2) = T(2) Then

If Y(3) = T(3) Then

If Y(4) = T(4) Then

Porta.5 = 1

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

```
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000  
Portb.7 = 0  
End If
```

```
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000  
Portb.7 = 0  
End If  
Return
```

```
Dev7:  
If Y(1) = U(1) Then  
If Y(2) = U(2) Then  
If Y(3) = U(3) Then  
If Y(4) = U(4) Then  
Porta.6 = 1  
Else  
Cls  
Lcd "ERROR"  
Portb.7 = 1  
Waitms 1000
```

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Return

Dev8:

If Y(1) = V(1) Then

If Y(2) = V(2) Then

If Y(3) = V(3) Then

If Y(4) = V(4) Then

Porta.7 = 1

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Return

Dev9:

If Y(1) = W(1) Then

If Y(2) = W(2) Then

If Y(3) = W(3) Then

If Y(4) = W(4) Then

Portb.6 = 1

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Else

Cls

Lcd "ERROR"

Portb.7 = 1

Waitms 1000

Portb.7 = 0

End If

Return

Dta:

Data 20 , 21 , 0 , 22 , 23 , 3 , 2 , 1 , 24 , 6 , 5 , 4 , 25 , 9 , 8 , 7