

AC 2007-1339: MAKE A GLOBAL UNIVERSITY FOR SPECIAL SHORT COURSE WITH REMOTE EDUCATION SOFTWARE SYSTEM

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Make a global university for Special Short Course with Remote education software system (For Ministry of Energy PWUT implemented in Iran)

Abstract

This paper addresses the history of and basis for distance educational systems for Power and Water University of Technology considering the advantages and advanced facilities available in information technology. The main purpose and philosophy of distance educational systems has been employee training. The main and operational specifications of distance educational systems and present general specifications of web-based educations are also discussed. The Canadian government has placed implementation of electronic devices as the main goal of its activities. In this global modern system the integrity of electronic data in government and education are worthy of special attention.

Other subjects included in this paper are the classification for Virtual Education and Online Learning and their applications and the viability of virtual educations and defining the global standard of SCORM (Sharable Courseware Object Reference Model).

Objectives

1. What is Information Technology and Communications?
2. Fundamental definition of computer-based training (CBT – Computer Based Training)
3. The philosophy of the existence of distance education and its general definitions
4. The operational specifications of Distance Learning
5. The place of Web Base Distance Learning (WBDL) in the world
6. General specifications of web-based trainings
7. Electronic education and its place in the electronic government, opportunities, challenges and the future process
8. Defining the global standard of Web Based Distance Learning (distance education) SCORM

Characteristics: The remote education software system, implemented in Iran (for Ministry of energy PWUT)

Project view: Web Base

History of the Subject of Project: for educational substructure and lack of conformity of population growth and educational possibilities on Web basis, with full facilities in simulation of educational environment and multimedia via providing software systems that would match the speed of data transfer for existing networks.

Works that have been already performed:

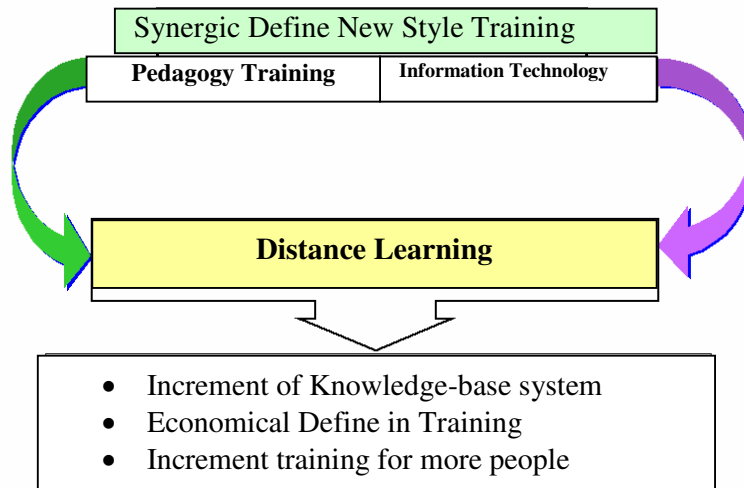
I have implemented remote education system software with full facilities in order to provide the needs mentioned above. The system consists of two general sections:

1. Procedure of education affairs (registration, schedule, tests)

2. Education section (simulation of class environment, mass media via aggregated synchronized multimedia)

The software has vast facilities for providing educational courses, particularly holding specialized courses for on-the-job-training for employees and being analyzed and initially designed based on the SCORM electronic education standards.

- A- To lower the need to establish educational spaces and at the same time, to obtain quantity development in education facilities
- B- Better use of professors and specialists in each profession
- C- Decrease in education cost per capita with respect to the centralized use of educational facilities
- D- Saving in costs and loss of time for in-bound and out-bound trips (trainers and instructors of the course)
- E- Decrease in depreciation of educational inputs and lowering welfare costs (accommodation, food, reception)
- F- Decrease in expenses for seminars and conferences
- G- Standardization of content of educational courses and tests, optimized use of educational equipment in relation to computers and optimized use of the trainees' times in participating in education courses



Social reasons for implementing software for remote education system

The global declaration of higher education, UNESCO's world meeting- Paris 1998: The Higher education institutes should be among the first institutes that would benefit from potential allowances and facilities of information and communication technology and in this line, to establish modern educational environment to coordinate information era and to determine abstract education systems.

The significant point is that developing countries, or in other words, in undeveloped countries:

- The social substructure facilities, of which the education system is a part of it, grows arithmetically multiplication (in best cases)
- In these societies, population grows geometrically
- This lack of conformity leads to social and individual abnormalities, for non-distribution of social sources occurs and, as a result, class struggles can lead to structural challenges.

Reasons for using multimedia tools in remote education system:

- The trainees learn 1060 items they read
- The trainees learn 2060 items they hear
- The trainees learn 3060 items they see
- The trainees learn 5060 items they see and hear
- The trainees learn 7060 items they experience
- The trainees learn 9560 items they teach others
-

These figures are compared to a few education points (of 1600 cases); however, the above-mentioned subjects are a case study in explaining status of educational technology.

Main advantages of implemented remote education system"

- Decrease in the need to establish educational spaces and, at the same time, quantity development of education
- Better use of professionals and specialists in each field as well as lowering educational cost per capita with respect to centralized use of educational facilities
- Saving in time and costs for in-bound and out-bound trips (instructors and lecturers of educational courses)
- To decrease depreciation of educational inputs, and to lower welfare costs (accommodation, food and reception)
- Standardization of the contents of educational courses and tests
- Generalization of education issue for great regions that lack any educational facilities.

Relative advantages of implemented remote education system

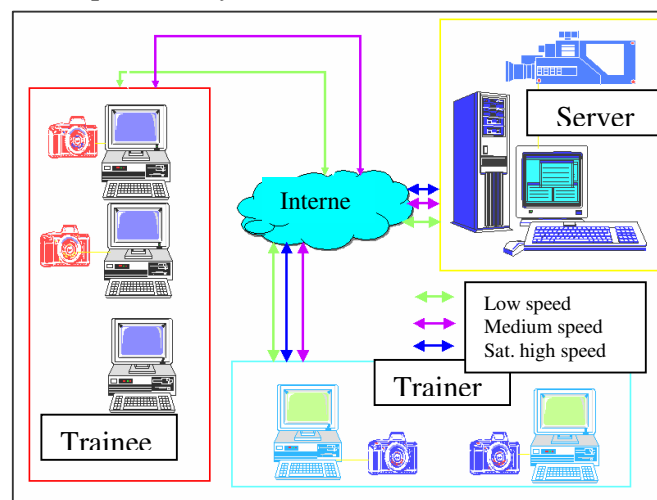
- A dynamic software environment created by 100 thousands lines of programming for the operator and server, for presenting short-term specialized courses.

The software system has been designed on **SCORM** standard base; thus, it is possible to communicate with different types of data base in this field.

- The application layer of the system has the ability to conform to any real time data base-Oracle, etc).
- The system has been designed in a way to enable different work groups (including 10 work team) including trainees, trainers, managerial forces, supervision and staff agents) to gather in the place and perform their activities
- To offer education courses including simulation of all educational, class and lab institutes in form of synchronized courses; in addition, the possibility to make non-synchronized educational course archives has been incorporated.
- The administrative layer of the system is a way that makes it possible to have a remote control in activities on the system via main server.
- The production method, transmission, multimedia section renovation and collaboration & comm. are designed in a way to enable a live (same time) communication with least volume of data transmission. This has become possible through using Vector Base for the Bitmap Base servers.

Dynamic educational planning in the form of an educational calendar of all courses together with their syllabus and topics is the main specification of the implemented remote control education system software.

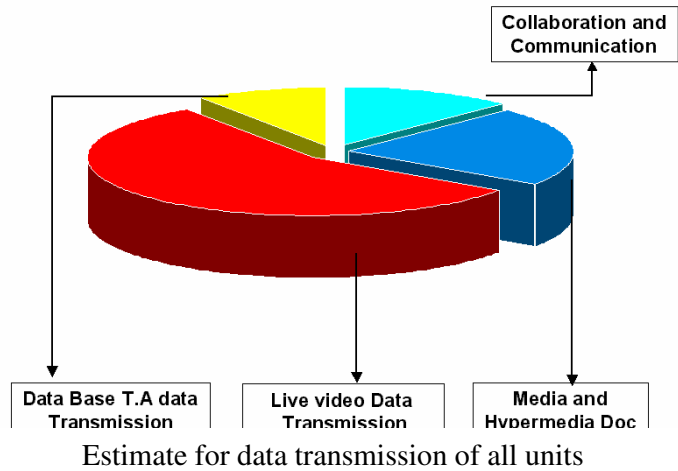
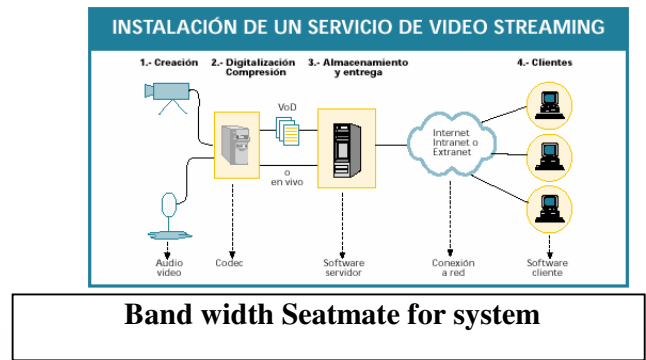
The educational management system (including all educational category) includes visual and sound transmission of the lecturer via a powerful data bank (in form of an abstract class) on the learner's side, educational environments such as electronic whiteboards, etc, the possibility of holding abstract labs and abstract visits, etc, the possibility of holding scientific conferences and educational staff sessions, a dynamic informative system, the possibility to use electronic sources and libraries as well as other facilities of a full educational system, a mechanism for supervision and evaluation of an overall system along with statistical summarized information, the use of an electronic education calendar and course brochures with the possibility to search, the possibility of holding highly secure test and financial system, payment for the course in form of credit card or bank voucher, a monitoring system and input of independent Persian information from the platform and synchronized admission of more than 1000 educational users at one time via the operating system and the possibility of holding several courses at the same time or at different times during one session, remote central administration of the system, the use of a graphic base for the user in educational multimedia to increase the power of system



Situation for Web based Distance learning unit (trainee/Teacher/admin)

Software implementation technology:

1. Use of UML tools production system with RUP method
2. Use of RDBMS powerful substructure
3. Use of ASP technology for developing WEB layer
4. Use of VBS language for the server side processes and JSP language for operator side processes
5. Use of special techniques for improving system safety
6. Use of Active X technology to improve system efficiency
7. Use of Applications made by Action Script for educational tools
8. Use of special server for vector multimedia facilities
9. Use of vector animation technology for user layer



Software Capabilities in Presenting Remote Education

Simulation tools of the education environment by vast facilities of real-time multimedia (the instructor's picture on the learner's side, vice versa, an electronic whiteboard, audio/visual dialogue, audio-pictorial and tens of unique facilities that can be accessed in least time, full implementation of real-time collaboration including:

- Courses presented as films in an effective way (simulation of live educational class between instructors and learners in multicast)

- Synchronized communication (audio-visual communication, white board and dialogue)
- Presentation of educational activities (live and asynchrony questions and answers, exercise, homework, research, quiz, tests and tens of other possibilities in this respect).
- The problem solving system and collective dialogues of learners and instructors
- Educational evaluation with the possibility to include in the overall records in form of educational and personal identity
- - Course archives presented in a way that would enable the person to participate in Async courses.

Operational Characteristics

- The download of documents
- Sign boards for library, educational news, catalogues, educational courses, personal subjects notes

Measures taken for implementation of applied layer

It should be noted that the applicable layer performs following cases in terms of the software life cycle: 1) capability to present applicable level, 2) communication of the end user layer via GUI and the defined relations and data base, while considering the interactions, 3) addition, edition and deletion of information defined in user's access level, 4) search of information for preparing reports and data for management tools (DDS) such as educational progress graphs of learners. 5) site administrative tools or system portal, 6) relationship with the course layers or course wares, 7) maintaining a log for files and technical users and systems events, 8) response to a few users without information interference, 9) storing information frequently times as an accessible permanent data base, 10) the possibility of defining activities and interactions which are used in the system analysis, 11) resistance against crackers and hackers, 12) speed and non-stop operation as defined by the system., 13) Persian system with no problem and error with no regard to the operation system and Persian converter in user's site (possibility to insert Persian, 14) the capability to perform all types of DDL, DCL and DML commands by observing the OLTP administration in users' interaction and data base free from error, 15) to obtain systemic statistics such as referral, and 16) solar Hijra that fits administrative activities.

Expression of Techniques used for presenting collaboration & communication tools:

To present special education software incorporated in the system, including:

1. Display and monitoring educational films and slides of courses
2. Abstract workshops and labs, texts and textbooks
3. Instructors and learners picture system, monitoring class and examination tests
4. Audio-visual dialogues and texts reading, implemented as follows:

Cases 1 and 2 from cold fusion-flash communication server and action script programming.

To determine remote education system from required hardware perspective

To discuss special issues of remote education system from data transfer view and web network

The discussion of data transmission on the web is a complicated issue in systems with real time interaction, in the information exchange of views on OLTP interactions and audio-

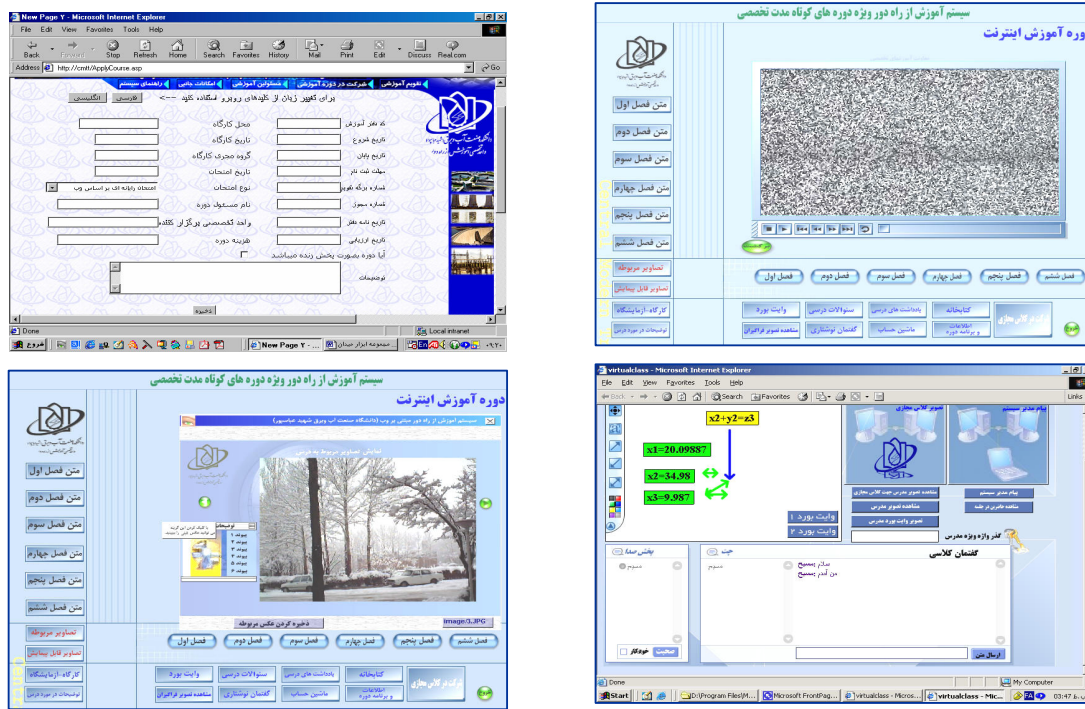
visual service activities; thus, since the software has the above-mentioned specifications; special cares should be performed in this respect.

Software architecture:

1. To lower the load and save in client/server data transfer through load balancing processing in the data interaction section, 2. using multi-media special server vector to prevent loss of efficiency with the ability of changing the picture to a unique vector formatting, lowering size of audio-visual data, use of powerful data base engine, oracle, planning and programming for preventing data and interactions increments.

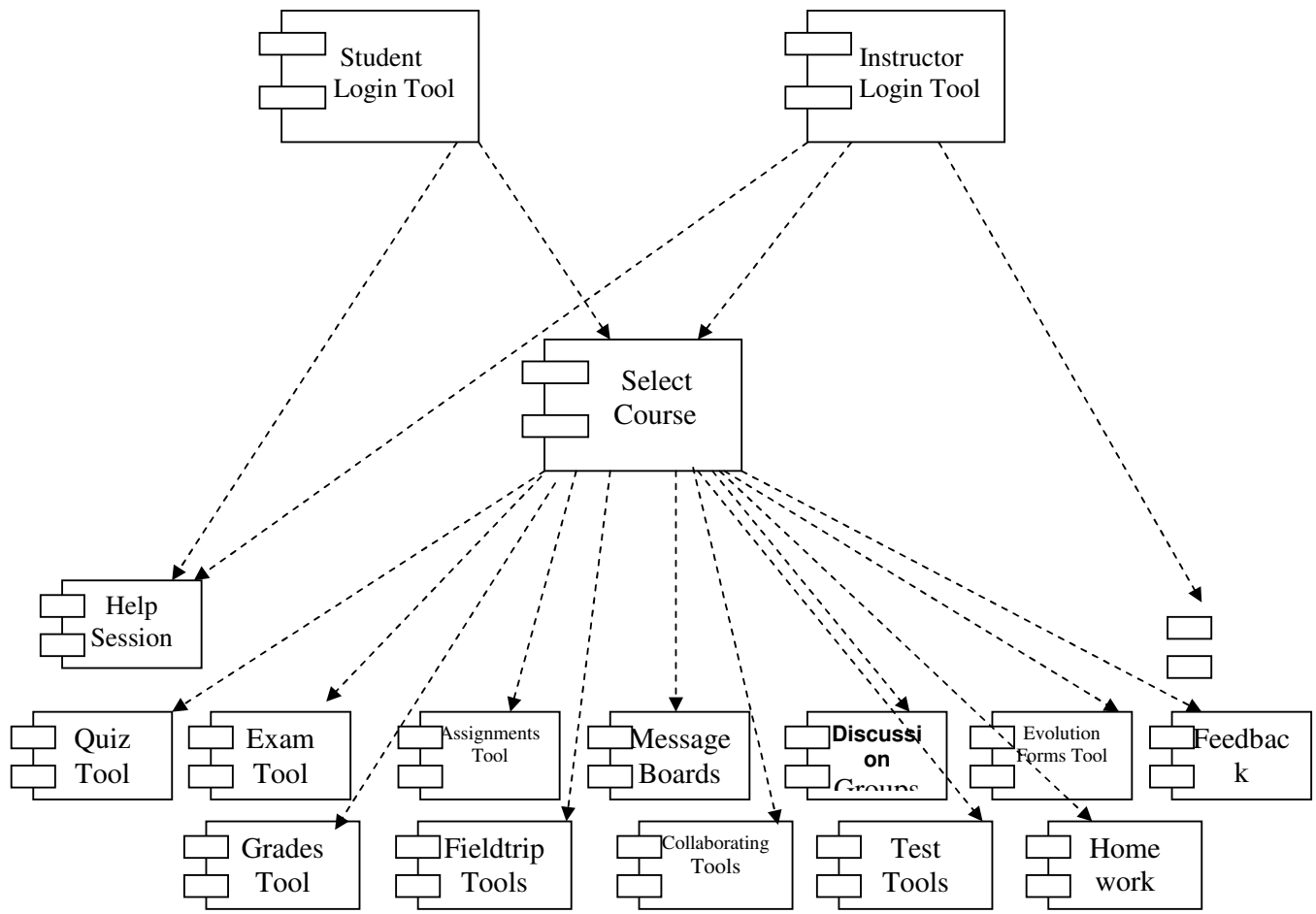
Hardware measures

1. To obtain dedicated server method with high hardware potential via improving cluster communicating
 To make necessary predictions for obtaining ADSL lines via server side programming with main section of data base



Schema of front web based Collaboration Course ware

Implementation Technology used for WBDL
 A Part of Modelling with UML Method



Conclusion

E-Learning and Distance Learning require us to re-think several aspects of the production and distribution of virtual content to make it more effective.

1. Noting the title of this paper, it can be concluded that considering the duration, depth and breadth of the Virtual University, it may be one of the most important pillars of electronic government, because education is the highest need and the longest process of the social life of individuals..

Thus, modern non-attending educational systems (in dynamic and interactive environments) may be regarded as a solution, with due attention to the duality of remote-learning and its position within the electronic government.

- production of multimedia content at low cost;
- interoperability. Learning content can be used in all location with different tool sets or platforms because content is independent of the LMS used to run it;
- reuse of didactic content.
- durability of didactic content. Learning content should not need to be significantly redesigned, reconfigured or reprogrammed to keep up with the evolution of technology;

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Appendix 1

A part of Programmin for implimentaion Admin Tools

```
<SCRIPT LANGUAGE="VBScript" RUNAT="Server">
</SCRIPT>
<%
    ' security
    Dim gblPassword
    gblPassword = NULL 'your password here
        '^^^----- NULL forces mandatory Windows login.

    Dim gblUpload 'Pick one: how to do upload?
    ' gblUpload = "Script" 'not working. do not use.

gblUpload = "ASPSimpleUpload"
    gblUpload = "SA-FILEUP"

    ' configuration
    Dim gblSiteName,gblSiteCode
    gblSiteName = Request.ServerVariables("SERVER_NAME")
    gblSiteCode = ""

    Dim gblNow 'server may not be local time
    gblNow = Now

    Dim gblFace,gblColor'needs three quotes
    gblFace = """"Arial, Helvetica, sans-serif""""
    gblColor = """"#000066""""

    Dim gblRed,gblReverse
    gblRed = """"#FF0000""""
    gblReverse = """"#E0E0E0""""

    ' global variables
    Dim gblTitle,gblPageText

    gblTitle = " * * * TITLE NOT SET * * * "
    gblPageText = "&nbsp;"

    ' global constants
    Dim gblScriptName,gblRoot
    gblScriptName = Request.ServerVariables("Script_Name")
    gblScriptName = Mid(gblScriptName,InstrRev(gblScriptName,"/") + 1)
    gblRoot = Replace(Request.ServerVariables("Script_Name"),"/" & gblScriptName,"")

'..
'StartHTML
Sub StartHTML
    response.write "<HTML><HEAD><TITLE>" & gblSiteName & " " & gblTitle &
"</TITLE>" & VBCRLF
```

```

    response.write "<META NAME=""description"" CONTENT=""AnyPortal"" " & gblTitle
& ". " & gblSiteName & ">" & VBCRLF
    response.write "<META NAME=""keywords"" CONTENT=""anyportal, " &
Lcase(gblTitle) & ", anyportal " & Lcase(gblTitle) & ", one file footprint,
www.anyportal.com, andmore, the ANDMORE Companies, Houston, Texas, active server
pages, ASP, asp, 100% ASP, 100% asp"">" & VBCRLF
    response.write "</HEAD>" & VBCRLF
    response.write "<BODY BGCOLOR=""#FFFFFF""><TABLE WIDTH=""100%"">" &
VBCRLF
    response.write "<TR><TD ALIGN=""RIGHT"" VALIGN=""BOTTOM""><FONT
COLOR=" & gblColor & " SIZE=3 FACE=" & gblFace & ">" & gblSiteName
    If Request.ServerVariables("LOGON_USER")="" Then
    Else
        response.write " (<FONT SIZE=1>USER:</FONT> " &
Request.ServerVariables("LOGON_USER") & ")"
    End If
    response.write "</FONT></TD></TR>" & VBCRLF
    response.write "<TR><TD ALIGN=""LEFT"" VALIGN=""BOTTOM"" BGCOLOR="
& gblColor & "><FONT FACE=" & gblFace & " SIZE=4
COLOR=""#FFFFFF""><B>&nbsp;" & gblTitle & "</B></FONT></TD></TR>" &
VBCRLF
    response.write "<TR><TD ALIGN=""LEFT"" VALIGN=""TOP""><FONT FACE=" &
gblFace & " SIZE=2>" & gblPageText & "</FONT></TD></TR>" & VBCRLF
    response.write "</TABLE>" & VBCRLF
    response.write "<" & "!" & "-- begin " & gblScriptName & " --" & ">" & VBCRLF
    response.write "<" & "!" & "-- -----" & ">"
& VBCRLF
End Sub 'StartHTML

'--
'EndHTML
Sub EndHTML
    response.write "<" & "!" & "-- -----" & ">"
& VBCRLF
    response.write "<" & "!" & "-- end " & gblScriptName & " --" & ">" & VBCRLF
    response.write "<HR><FONT SIZE=1 FACE=" & gblFace & "><FONT COLOR=" &
gblColor & " SIZE=3 FACE=" & gblFace & ">" & gblSiteName
    If Request.ServerVariables("LOGON_USER")="" Then
    Else
        response.write " (<FONT SIZE=1>USER:</FONT> " &
Request.ServerVariables("LOGON_USER") & ")"
    End If
    response.write "</FONT><BR>" & FormatDateTime(gblNow,1) & " &nbsp;" &
FormatDateTime(gblNow,3) & "" & VBCRLF

    response.write "<BR>AnyPortal " & gblTitle & " &copy; Copyright " & Year(gblNow)
& " by <A TITLE=""www.anyportal.com is a project of the ANDMORE Companies --
Houston, Texas""

```

```

HREF=""http://www.anyportal.com"">www.AnyPortal.com</A><BR></FONT>" &
VBCRLF
    response.write "</BODY></HTML>" & VBCRLF
    response.write VBCRLF
End Sub 'EndHTML

'--
' Authorize
Function Authorize
Dim a,i,pw
    If _
        (gblPassword="") OR _
        (Request.Cookies(gblSiteCode & gblScriptName)=Condensation(SStr(gblPassword)))
OR _
    Request.ServerVariables("LOGON_USER")<>"" _
    Then
        Authorize = TRUE
    Else
        If Request.QueryString("w")="y" AND
Request.ServerVariables("LOGON_USER")="" Then
            Response.Status = "401 Access Denied"
            StartHTML
            response.write "<BLOCKQUOTE><FONT FACE=" & gblFace & " SIZE=5>"

            response.write "<FONT COLOR=""#FF0000""><B>Access
denied.</B></FONT><FONT SIZE=2>"
            response.write "<BR>Sorry, but the username/password you supplied<BR> was
not recognized by the <A HREF=""http://" & gblSiteName & """">" & gblSiteName & "</A>
web site " & VBCRLF
            response.write "<P>Contact your web site administrator for more information." &
VBCRLF
            response.write "</FONT></FONT></BLOCKQUOTE>" & VBCRLF
            EndHTML
            Response.End
        End If
        Authorize = FALSE
        pw = Request.Form("password")
        a = Condensation(pw)
        If pw<>"" OR Request.Form("OK")<>"" Then
            If pw = gblPassword Then
                ' cookie expires when browser is closed...
                Response.Cookies(gblSiteCode & gblScriptName) = a
                ' set a permanent one to never see this page again
                If Request.Form("SAVE") = "on" Then Response.Cookies(gblSiteCode &
gblScriptName).Expires = gblNow+30
                Response.Redirect gblScriptName & "?d="
            Else
                gblPageText = gblPageText & "<FONT TITLE=""Sorry. That's not the
password. Try again."" COLOR=" & gblRed & "><B>Invalid password.</B></FONT>"
            End If
        End If
    End If
End Function

```

```

End If
If Request.ServerVariables("SERVER_SOFTWARE")>="Microsoft-IIS/4.0" Then
  StartHTML
  response.write "<FORM METHOD=""POST"" ACTION="" & gblScriptName
& """"><BLOCKQUOTE><TABLE CELLPADDING=5>" & VBCRLF
  response.write "<TR>" & VBCRLF
  response.write "<TD><FONT TITLE=""The password method uses cookies to
secure this site. For the correct password, contact the web site administrator."" FACE=" &
gblFace & " SIZE=1>PASSWORD:</FONT>" & VBCRLF
  response.write "<INPUT TYPE=""PASSWORD"" SIZE=17
NAME=""Password""></TD>" & VBCRLF
  response.write "<TD BGCOLOR=" & gblReverse & "><FONT FACE=" &
gblFace & " SIZE=1 TITLE=""Check this box to save a cookie in the browser of this
machine. You won't have to log-in again for the next 30 days.""> &nbsp; SAVE
COOKIE?</FONT>" & VBCRLF
  response.write "<INPUT TYPE=""CHECKBOX"" NAME=""SAVE""></TD>"
& VBCRLF
  response.write "<TD><INPUT TYPE=""SUBMIT"" NAME=""OK""
VALUE=""ENTER""></TD>" & VBCRLF
  response.write "</TR>" & VBCRLF
  response.write "<TR><TD COLSPAN=3>"
  response.write "<FONT FACE=""Wingdings"" SIZE=6 COLOR=""#000000"">"
& chr(255) & "</FONT><FONT TITLE=""The login method uses your Windows username
and password to secure this site."" FACE=" & gblFace & " SIZE=3> Use Windows <A
HREF="" & gblScriptName & "?w=y"">login</A></FONT></TR>" & VBCRLF
  response.write "</TABLE></BLOCKQUOTE></FORM>" & VBCRLF
  response.write VBCRLF
Else
  gblPageText = "Your web server identified itself as """" &
Request.ServerVariables("SERVER_SOFTWARE") & """"."
  StartHTML

  response.write "<BLOCKQUOTE><FONT FACE=" & gblFace & "
SIZE=5><B>Sorry.</B><P>" & VBCRLF
  response.write "AnyPortal " & gblTitle & " requires Microsoft NT/2000 Internet
Information Server (IIS) 4.0 or greater." & VBCRLF
  response.write "</FONT></BLOCKQUOTE>" & VBCRLF
End If
EndHTML
End If
End Function 'Authorize

'..
' Condensation
Function Condensation(s)
  a = 0
  For i = 1 to len(s)
    a = (ASC(mid(s,i,1))+a*2) Mod 77411
  Next i

```

```

    Condensation = Right("00000" & Cstr(a),5) & Right("00000" &
Cstr((len(s)*23)+25433),5)
End Function 'Condensation(s)

```

```
'_--
```

```
' CreateImageTag
```

```
Function CreateImageTag(fn,altstr,align,border)
```

```
Dim f,fso,pn
```

```
Dim tstr,alignstr,borderstr
```

```
Dim chars,hw,width,height
```

```
    If border="" Then
```

```
        borderstr = " BORDER=0"
```

```
    Else
```

```
        borderstr = " BORDER=" & Cstr(border)
```

```
    End If
```

```
    If align="" Then
```

```
        alignstr = ""
```

```
    Else
```

```
        alignstr = " ALIGN="""
```

```
        Select Case UCase(left(align,1))
```

```
        Case "L"
```

```
            tstr = "LEFT"
```

```
        Case "R"
```

```
            tstr = "RIGHT"
```

```
        Case "C"
```

```
            tstr = "CENTER"
```

```
        Case Else
```

```
        End Select
```

```
        alignstr = " ALIGN=""" & tstr & """"
```

```
    End If
```

```
Set fso = CreateObject("Scripting.FileSystemObject")
```

```
pn = Server.MapPath(fn)
```

```
tstr = ""
```

```
Set f = fso.OpenTextFile(pn)
```

```
Select Case UCase(Right(fn,4))
```

```
Case ".GIF",".JPG"
```

```
    If NOT f.AtEndOfStream Then
```

```
        If UCase(Right(fn,4))=".GIF" Then 'always works
```

```
            chars = f.read(10)
```

```
            width = asc(mid(chars,8,1))*256 + asc(mid(chars,7,1))
```

```
            height = asc(mid(chars,10,1))*256 + asc(mid(chars,9,1))
```

```
            hw = " WIDTH=" & width & " HEIGHT=" & height
```

```
        Else 'usually works
```

```
            chars = f.read(200)
```

```
            height = asc(mid(chars,164,1))*256 + asc(mid(chars,165,1))
```

```
            width = asc(mid(chars,166,1))*256 + asc(mid(chars,167,1))
```

```
            If (height>600) OR (height<3) OR (WIDTH<3) OR (WIDTH>600) Then
```



```

        ' could be wrong height, width... forget 'em
    Else
        hw = " WIDTH=" & width & " HEIGHT=" & height
    End If
End If
End If
tstr = "<IMG SRC=""" & Replace(Replace(fn, "\", "/"), " ", "%20") & """" & hw &
borderstr & alignstr & " ALT=""" & altstr & """">"
End Select
f.Close
Set f = Nothing
Set fso = Nothing

```

```

    CreateImageTag = tstr
End Function 'CreateImageTag

```

```

'--

```

```

' DetailPage
Sub DetailPage
Dim chars,fstr,hw,height,width
Dim IsTextFile,pathname
Dim fsize,fdatecreated,fdatelastmodified

```

```

    pathname = Lcase(fsDir & fn)
    If right(pathname,1)="\" Then pathname = Left(pathname,len(pathname)-1)

```

```

    If fso.FolderExists(pathname) Then
        response.redirect gblScriptName & "?d=" & URLSpace(pathname) & "\"
    End If

```

```

' create if you gotta
If fso.FileExists(pathname) Then
Else
    Select Case UCase(Request.QueryString("T"))

```

```

    Case "D" 'create document
        Set f = fso.CreateTextFile(pathname)
        f.Close
        Set f= Nothing
    Case "F" 'create folder

```

```

        Set f = fso.CreateFolder(pathname)
        pathname = pathname & "\"
        response.redirect gblScriptName & "?d=" & URLSpace(pathname)
    End Select
End If

```

```

StartHTML

```

```
response.write "<P><FONT FACE=""Andale Mono, Monotype.com, Courier New,
Courier, sans-serif"" SIZE=4><B>" & pathname & "</B><BR>" & VBCRLF
response.write "<A HREF="" & webbase & fn & "">" & webbase & fn &
"</A><BR></FONT>" & VBCRLF
```

```
If fso.FileExists(pathname) Then
' fetch Window's file information
Set f = fso.GetFile(pathname)
fsize = f.size
fdatecreated = f.datecreated
fdatelastmodified = f.datelastmodified
response.write "<PRE>" & VBCRLF
response.write " file size: " & FormatNumber(fsize,0) & " characters" & VBCRLF
response.write " file created: &nbsp;<B>" & FormatDateTime(fdatecreated,1) & "
</B>&nbsp;<B>" & FormatDateTime(fdatecreated,3) & VBCRLF
response.write "last modified: &nbsp;<B>" & FormatDateTime(fdatelastmodified,1)
& " </B>&nbsp;<B>" & FormatDateTime(fdatelastmodified,3) & VBCRLF
response.write "</PRE>" & VBCRLF
Set f = Nothing
End If
```

```
response.write "<FORM ACTION="" & gblScriptName & "" METHOD=""POST"">"
& VBCRLF
response.write "<INPUT TYPE=""HIDDEN"" NAME=""fsDIR"" VALUE="" & fsDir
& "">" & VBCRLF
```

```
IsTextFile = FALSE
Select Case UCase(Right(fn,4))
Case ".GIF", ".JPG"
tstr = CreateImageTag(basedir & fn, fn & " (" &
FormatNumber(Int(fsize/1024*10+.05)/10,1) & " Kb)", "", 0)
response.write "<TABLE CELLPADDING=2 BGCOLOR=" & gblReverse &
"><TR><TD><FONT SIZE=1 FACE=" & gblFace & ">CUT AND PASTE THIS IMG
TAG</FONT><BR><TEXTAREA ROWS=4 COLS=60>"
response.write Server.HTMLEncode(tstr) &
"</TEXTAREA></TD></TR></TABLE><BR>" & tstr & "<BR CLEAR=""ALL"">" &
VBCRLF
Case ".URL"
Set f = fso.OpenTextFile(pathname)
If NOT f.AtEndOfStream Then tstr = f.ReadAll
f.Close
Set f = Nothing
response.write "<FONT COLOR=""#3333FF"" FACE=""Andale Mono,
Monotype.com, Courier New, Courier, sans-serif"" SIZE=2>" & VBCRLF
```

```
response.write Replace(Server.HTMLEncode(tstr), VBCRLF, VBCRLF & "<BR>")
response.write "</FONT>" & VBCRLF
Case Else
```

```

    If IsEditable(fn) Then
        'read the file
        Set f = fso.OpenTextFile(pathname)
        If NOT f.AtEndOfStream Then fstr = f.readall
        f.Close
        Set f = Nothing
        Set fso = Nothing
        IsTextFile = TRUE
        response.write "<TABLE BGCOLOR=" & gblReverse & "><TR><TD>" &
VBCRLF
        response.write "<FONT TITLE=""Use this text area to view or change the
contents of this document. Click [SAVE] to store the updated contents to the web server.""
FACE=" & gblFace & "SIZE=1><B>DOCUMENT CONTENTS</B></FONT><BR>" &
VBCRLF
        response.write "<TEXTAREA NAME=""FILEDATA"" ROWS=18 COLS=70
WRAP=""OFF"">" & Server.HTMLEncode(fstr) & "</TEXTAREA>" & VBCRLF
        response.write "</TD></TR></TABLE>" & VBCRLF
    End If
End Select
response.write VBCRLF & "<BR><BR>" & VBCRLF

    If IsTextFile Then
        response.write "<INPUT TYPE=""TEXT"" SIZE=48 MAXLENGTH=255
NAME=""PATHNAME"" VALUE="" & pathname & "">" & VBCRLF
        response.write "<INPUT TYPE=""RESET"" VALUE=""RESET""> <INPUT
TYPE=""SUBMIT"" NAME=""POSTACTION"" VALUE=""SAVE"">" & VBCRLF
        response.write "<INPUT TYPE=""SUBMIT"" NAME=""POSTACTION""
VALUE=""CANCEL""><BR>" & VBCRLF
    Else
        response.write "<INPUT TYPE=""HIDDEN"" NAME=""PATHNAME"" VALUE="" &
pathname & "">" & VBCRLF
        response.write "<INPUT TYPE=""SUBMIT"" NAME=""POSTACTION""
VALUE=""BACK""><BR>" & VBCRLF
    End If
    response.write "<HR><FONT TITLE=""Check OK and click [DELETE] to delete this
document from the web server. (Cannot be undone.)"" FACE=" & gblFace &
"SIZE=1><B>OK TO DELETE "" & UCase(fn) & ""? </B></FONT>" & VBCRLF
    response.write "<INPUT TYPE=""CHECKBOX"" NAME=""DELETEOK"">" &
VBCRLF
    response.write "<INPUT TYPE=""SUBMIT"" NAME=""POSTACTION""
VALUE=""DELETE"">" & VBCRLF
    response.write "</FORM>" & VBCRLF
EndHTML
End Sub 'DetailPage

'..
' DisplayCode
Sub DisplayCode
Dim fn,fso,f
Dim code,tstr

```

Dim a,arr,i

```
fn = Request.QueryString("c")
response.write "<HTML><HEAD><TITLE>" & fn & "</TITLE></HEAD><BODY>"
& VBCRLF
```

```
response.write "<STYLE>" & VBCRLF
response.write "<!--" & VBCRLF
response.write "SPAN{color:Navy;background-color:Yellow}" & VBCRLF
response.write "--" & ">" & VBCRLF
response.write "</STYLE>" & VBCRLF
```

```
If Instr(fn,fsroot)=1 Then
    Set fso = CreateObject("Scripting.FileSystemObject")
    Set f = fso.OpenTextFile(fn, 1, 0, 0)
    If f.AtEndOfStream Then
        code = ""
    Else
        code = f.ReadAll
    End If
```

```
response.write "<TABLE WIDTH=""100%"" BGCOLOR=" & gblColor &
"><TR><TD><FONT COLOR=""#FFFFFF"" FACE=""Andale Mono, Monotype.com,
Courier New, Courier, sans-serif"" SIZE=5><B>" & VBCRLF
response.write "&nbsp;" & fn & "</B></FONT></TD></TR></TABLE>" &
VBCRLF
```

```
' quickly format code for readability...
' could be smarter, but it sure is simple!
```

```
tstr = Server.HtmlEncode(code)
tstr = Replace(tstr,chr(9)," ")
```

```
gblTitle = gblTitle & " (Detail Page)"
gblPageText = "Use this page to view, modify or delete a single document on this
web site."
    DetailPage
End If
End If
%>
```

A Part of Video Server For Collaboration Tools

```
#initclip 1
//
function FCAVPresenceClass() {
    this.init();
}
```

```

//
FCAVPresenceClass.prototype = new MovieClip();
//
Object.registerClass("FCAVPresenceSymbol", FCAVPresenceClass);
//
FCAVPresenceClass.prototype.init = function() {
    this.name = (this._name == null ? "_DEFAULT_" : this._name);
    this.prefix = "FCAVPresence." + this.name + ".";
};

/
    this.so.changeUsername = function (newName) {
        this.owner.username_txt.text = newName;
    };

    //
    this.so.connect(this.nc);

    this.nc.call(this.prefix + "connect", null);
};
//
FCAVPresenceClass.prototype.close = function() {

    this.nc.call(this.prefix + "close", null);
    //
    this.so.owner = null;
    delete this.so.owner;
    delete this.so.onSync;
    this.so.close();
    this.so = null;
    //
    this.nc.FCAVPresence[this.name] = null;
    this.nc = null;
};
//
FCAVPresenceClass.prototype.setUserID = function (newID) {

    this.userID = newID;

    if ( this.username != null && this.needPublish != null && this.needPublish ) {
        delete this.needPublish;
        this.startPublish();
    }
}
//
FCAVPresenceClass.prototype.setUsername = function(newName) {
    this.username = newName;
};

```

```

if ( this.userID != null && this.needPublish != null && this.needPublish ) {
    delete this.needPublish;
    this.startPublish();
}

if (_global.broadcasting && this.so.data.speakerID == this.userID) {
    //this.username_txt.text = newName;
    this.so.send("changeUsername", this.username);
}
if (this.username != null && this._currentframe == 1) {
    this.gotoAndStop("ready");
}

FCAVPresenceClass.prototype.stopReceive = function() {

this.ns.close();

    this.seat_video.attachVideo(null);
    this.seat_video.clear();
    this.gotoAndStop(this.username != null ? "ready" : "open");
};

FCAVPresenceClass.prototype.startPublish = function() {

if ( this.userID == null || this.username == null ) {
    this.needPublish = true;
    return;
}

if (!this.so.data.broadcast && !_global.broadcasting && this.username != null) {
    // trace("Broadcasting");
    this.username_txt.text = this.username;
    _global.broadcasting = true;
    if (gFlashCom.quality != null) {

        this.local_cam = Camera.get();
        this.local_mic = Microphone.get();

        gFlashCom.quality.manage( this.local_mic, this.local_cam, 1 );
    } else {

        this.local_cam = Camera.get();

        this.local_mic = Microphone.get();
        this.local_cam.setMode(this.vidWidth, this.vidHeight, this.vidFps);
        this.local_cam.setQuality(this.vidBandwidth, this.vidQuality);
    }
    this.local_cam.setLoopback(false);
    this.micInterval = setInterval(this.micOnActivity, 100, this);
this.seat_video.attachVideo(this.local_cam);
}

```

```

        this.ns.attachVideo(this.local_cam);
        this.ns.attachAudio(this.local_mic);
        this.ns.publish(this.soName);
        this.nc.call(this.prefix + "startPublish", null, this.prefix + this.soName);
        this.gotoAndStop("publishing");
    }
};

```

```

FCAVPresenceClass.prototype.stopPublish = function() {
    if (this.so.data.broadcast && this.so.data.speakerID == this.userID) {
        this.username_txt.text = "(Open)";
        _global.broadcasting = false;
        this.nc.call(this.prefix + "stopPublish", null);
        this.ns.publish(false);
        this.ns.close();
        this.seat_video.attachVideo(null);
        this.seat_video.clear();
        this.attachAudio(null);
        gFlashCom.quality.unmanage( this.local_mic, this.local_cam );

        delete this.local_cam;
        delete this.local_mic;
        clearInterval(this.micInterval);
        this.data.level = 1;
        this.level.mask._height = 1;
        this.gotoAndStop("ready");
    }
};

```

```

FCAVPresenceClass.prototype.micOnActivity = function(me) {
    me.level.mask._height = me.local_mic.activityLevel * .875;
    me.so.data.level = Math.round(me.local_mic.activityLevel * .875);
};

```

```

FCAVPresenceClass.prototype.toggleAudio = function() {
    if (this.so.data.broadcast && this.so.data.speakerID == this.userID) {

        if (!this.audioMuted) {
            this.micBtn_mc.gotoAndStop("disabledOver");
            this.micBtn_mc.muted = true;
            this.audioMuted = true;
            this.ns.attachAudio(null);
            clearInterval(this.micInterval);
            this.so.data.level = 1;
        } else {
            this.micBtn_mc.gotoAndStop("enabledOver");
            this.micBtn_mc.muted = false;
            this.audioMuted = false;
            this.ns.attachAudio(this.local_mic);
        }
    }
};

```

```

        this.micInterval = setInterval(this.micOnActivity, 100, this);
    }
} else if (this.so.data.broadcast) {
    if (!this.audioMuted) {
        this.audBtn_mc.gotoAndStop("disabledOver");
        this.audBtn_mc.muted = true;
        this.audioMuted = true;
        this.ns.receiveAudio(false);
    } else {
        this.audBtn_mc.gotoAndStop("enabledOver");
        this.audBtn_mc.muted = false;
        this.audioMuted = false;

        this.ns.receiveAudio(true);
    }
}
};

```

```

FCAVPresenceClass.prototype.toggleVideo = function() {
    if (this.so.data.broadcast && this.so.data.speakerID == this.userID) {

        if (!this.videoMuted) {
            this.camBtn_mc.gotoAndStop("disabledOver");
            this.camBtn_mc.muted = true;
            this.videoMuted = true;
            this.seat_video.attachVideo(null);
            this.ns.attachVideo(null);
        } else {
            this.camBtn_mc.gotoAndStop("enabledOver");
            this.camBtn_mc.muted = false;
            this.videoMuted = false;
            this.seat_video.attachVideo(this.local_cam);
            this.ns.attachVideo(this.local_cam);
        }
    } else if (this.so.data.broadcast) {
        // This user is receiving
        if (!this.videoMuted) {
            this.vidBtn_mc.gotoAndStop("disabledOver");
            this.vidBtn_mc.muted = true;
            this.videoMuted = true;
            this.ns.receiveVideo(false);
        } else {
            this.vidBtn_mc.gotoAndStop("enabledOver");
            this.vidBtn_mc.muted = false;
            this.videoMuted = false;
            this.ns.receiveVideo(true);
        }
    }
};
//

```



```

#endinitclip
// B-)
stop();
//
this.audioMute_mc._visible = false;
this.videoMute_mc._visible = false;
#initclip
//

function FCChatClass() {
    this.init();
}
//

//
FCChatClass.prototype.setUsername = function(newName) {
    this.username = newName;
    //trace(newName != null);
    this.sendButton._visible = ( newName != null );
    this.message_txt._visible = ( newName != null );
this.inputBg_mc._visible = ( newName != null );
}
//
FCChatClass.prototype.connect = function(nc) {
    this.history_txt.htmlText = "";

    this.nc = nc;

    if ( this.nc.FCChat == null )
        this.nc.FCChat = {};
    this.nc.FCChat[this.name] = this;

    this.so = SharedObject.getRemote( this.prefix + "message", this.nc.uri, false);
    this.so.owner = this;
    this.so.message = function( mesg ) { this.owner.receiveMessage(mesg); }
    this.so.clearHistory = function( mesg ) { this.owner.receiveHistory([]); }
    this.so.connect(this.nc);

    this.nc.call( this.prefix + "connect", null );
};
//
FCChatClass.prototype.close = function() {
    var fullName = "FCChat." + this.name;

    this.nc.call( this.prefix + "close", null );

    this.so.owner = null; delete this.so.owner;
    delete this.so.message;
    this.so.close();
    this.so = null;
}

```

```

        this.nc.FCChat[this.name] = null;
        this.nc = null;
    }
    //
    FCChatClass.prototype.clearHistory = function() {
        this.nc.call( this.prefix + "clearHistory", null );
    }
    //
    FCChatClass.prototype.receiveHistory = function(h) {
        var history;
        for ( var i = 0; i < h.length; i++ )
            history += h[i];

        this.history_txt.htmlText = history;
        this.history_txt.scroll = this.history_txt.maxscroll;
    };
    //
    FCChatClass.prototype.receiveMessage = function( mesg ) {
        this.history_txt.htmlText += mesg;
        this.history_txt.scroll = this.history_txt.maxscroll;
    }
    //
    FCChatClass.prototype.sendMessage = function(mesg) {
        this.nc.call( "FCChat." + this.name + ".sendMessage", null, this.message_txt.text );
        this.message_txt.text = "";
    };
    //
    FCChatClass.prototype.setSize = function(newWidth, newHeight) {

        ._yscale = 100;

        this.message_txt._y = newHeight - this.message_txt._height;
        this.message_txt._width = newWidth - this.sendButton._width - 6;

        this.inputBg_mc._y = this.message_txt._y - 1.4;
        this.inputBg_mc._width = this.message_txt._width;

        this.chat_sb._x = newWidth - this.chat_sb._width;

        mysize = (newHeight - this.sendButton._height - 6);

        //trace("mysize:"+mysize);
        //trace("mysize:"+this.chat_sb._width);

        this.history_txt._x = 0;
        this.history_txt._y = 0;

        this.history_txt._width = newWidth - this.chat_sb._width;

```

```

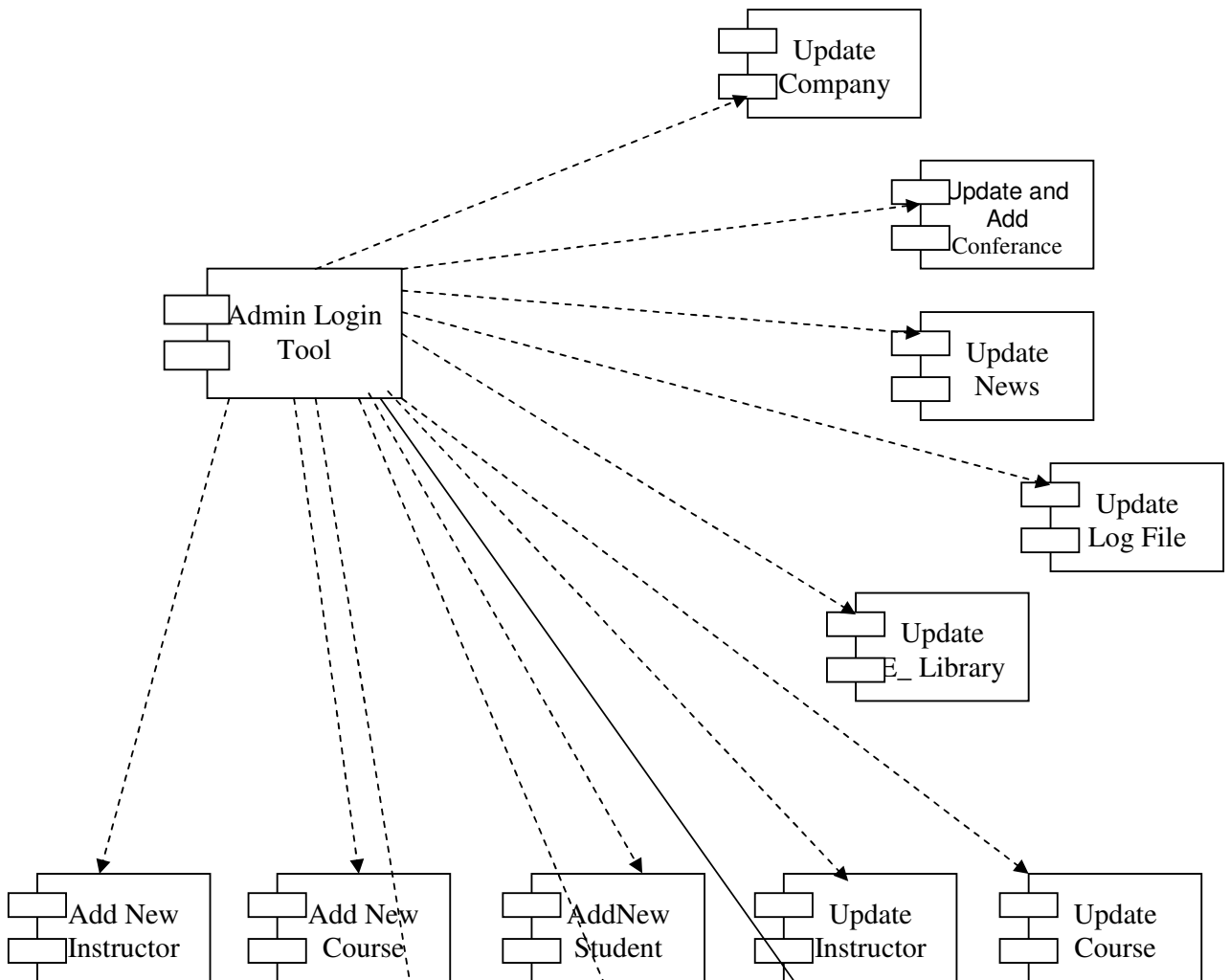
this.history_txt._height = mysize;

this.chat_sb.setSize(mysize);
}
//
#endinitclip

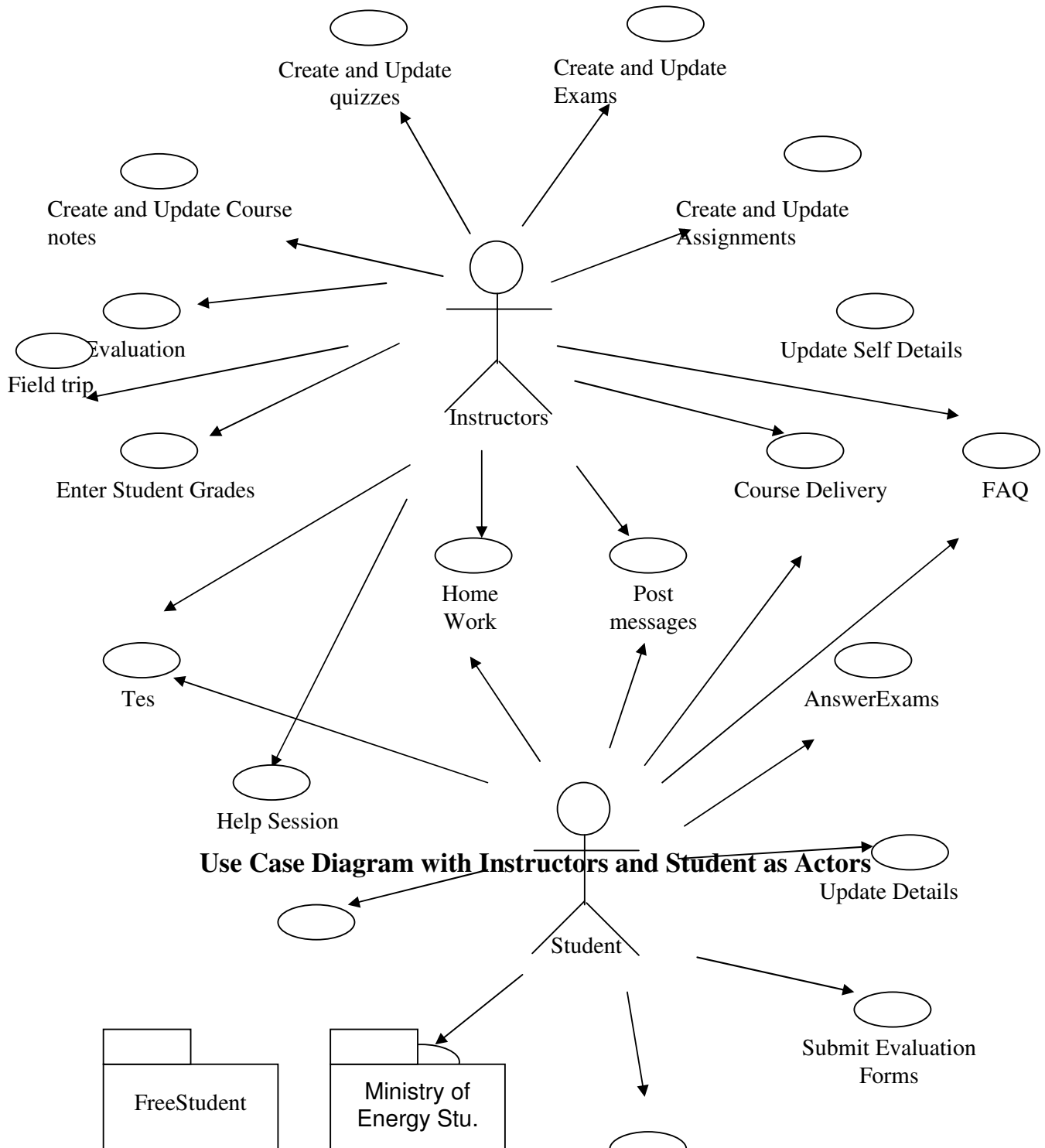
this.sendButton._visible = ( this.username != null );
this.message_txt._visible = ( this.username != null );
this.inputBg_mc._visible = ( this.username != null );

this.setSize(this._width,this._height);

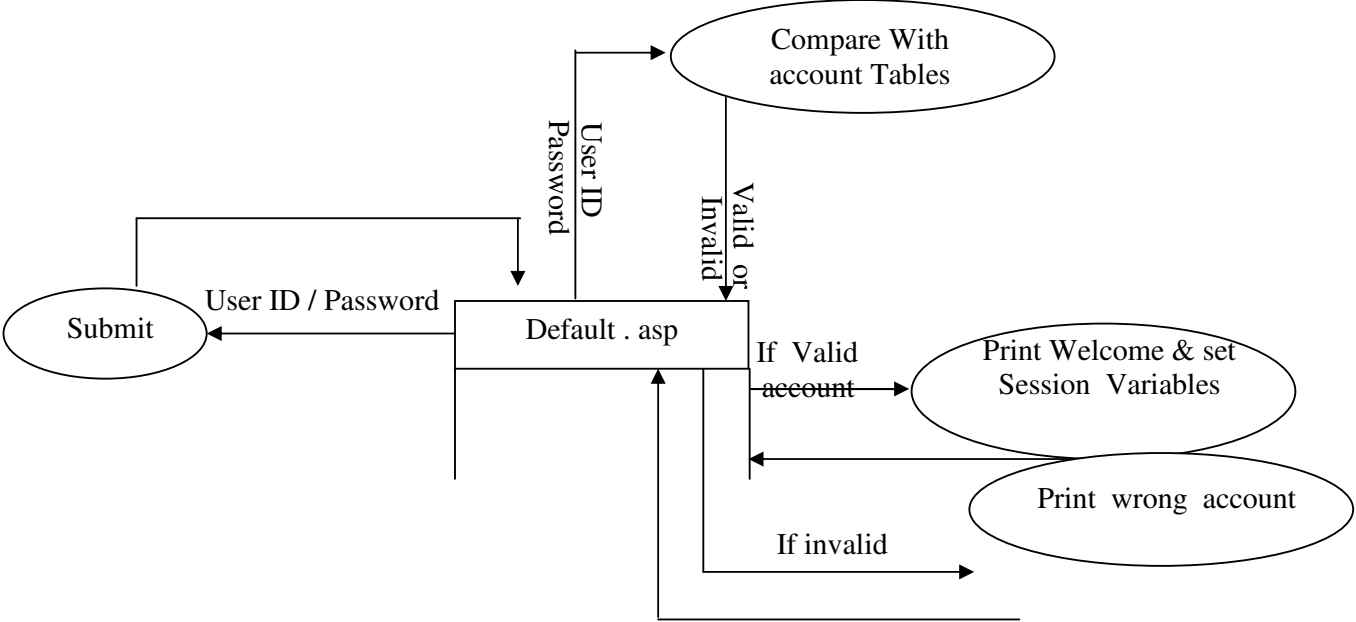
```



Component Diagram With Administrators Sub System
WBDL System



Component Diagram of the Whole System

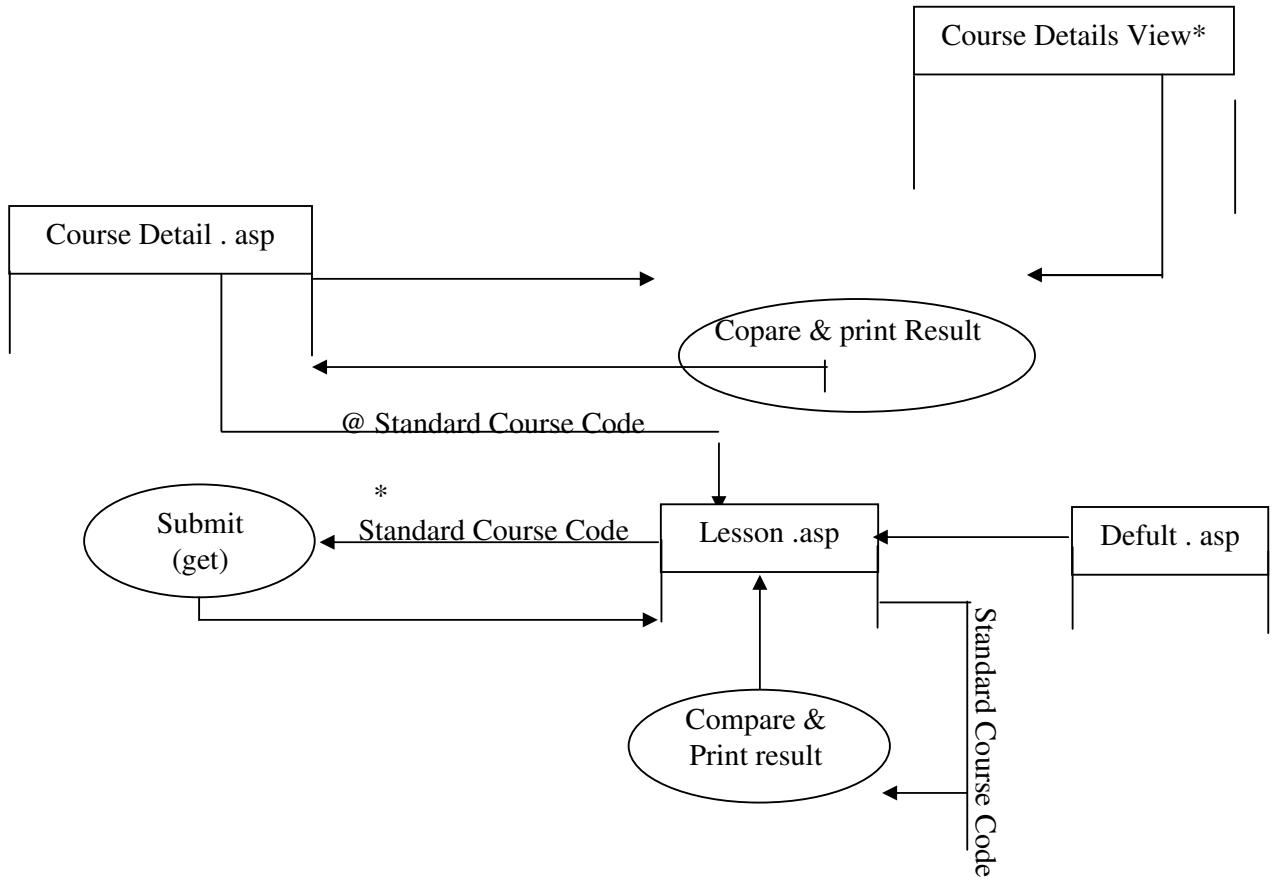


User account Student
 User account Teacher

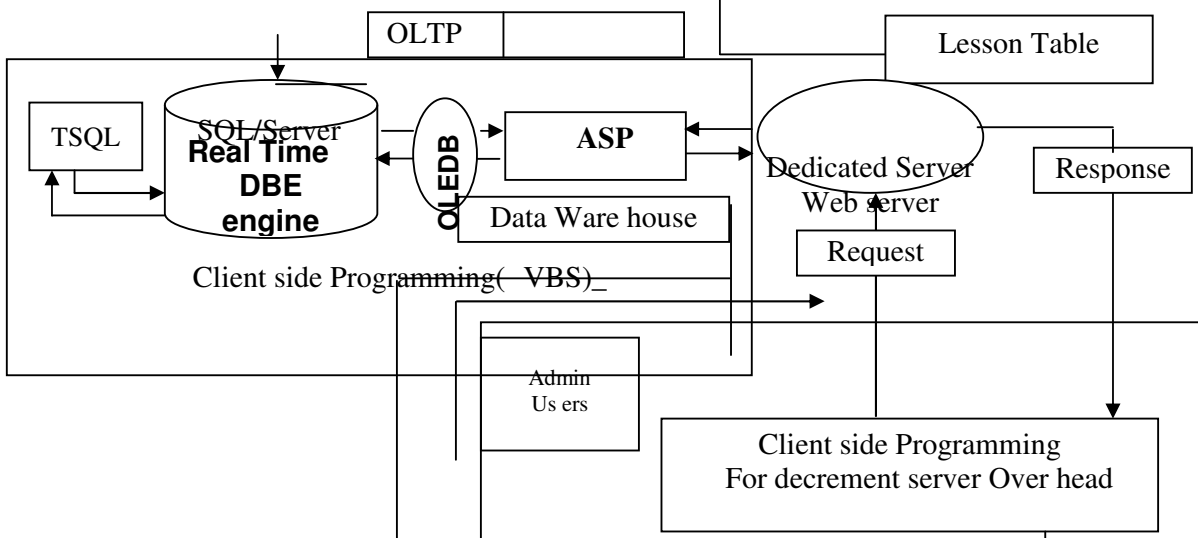
Account Tables * :

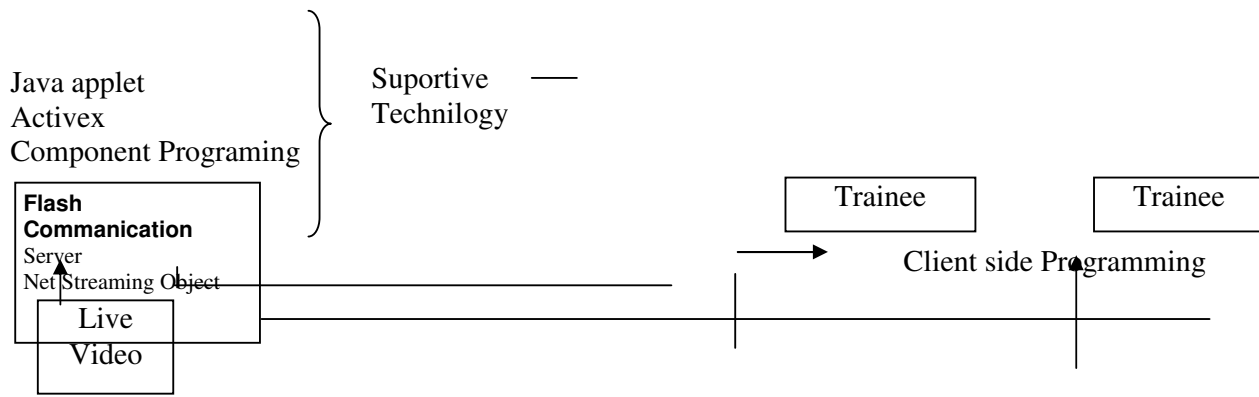
Courseware Analyze

3)



Systematic Workflow in Implemented WBDL





A modul of Implimented WBDL Software