

## Design and Realization of Intelligent Website Traffic Monitoring System

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**Abstract.** Through the analysis on the website traffic monitoring statistics technology, design and realize an intelligent website traffic monitoring system. The major modules have statistical generalization, latest visiting, source details, online statistics, page statistics, monthly statistics, second glance rate statistics, customer end statistics, calculator resetting, and exit management. This system reaches the pre-established requirements, which provides reference for the administrators to understand the website operation status promptly.

### Introduction

With the development of the internet, the website not only pursues the website traffic, but also analyzes the website traffic statistics [1]. The website traffic analysis refers that, under the situation of obtaining the basic data of the website traffic, the website traffic includes what major statistical indexes. Carry out statistics and analysis on the related data, find out the rules of the user to visit the websites, combine these rules with the network marketing strategy, and then identity the possible problems in the current network marketing activities, and provide evidence for modifying or re-establishing the network marketing strategy [2]. The intelligent website traffic monitoring system is a set of statistical analysis software of the website traffic volume. Through arranging the installation and operation on the website, it is feasible to intuitively make statistics on the daily, monthly and annual traffic volume, IP visiting, and page view ranking, as well as which searcher it comes from. The result from the statistical analysis is intuitive and accurate, which enables the administrators to promptly understand the website operation status and visiting status.

### Technical Realization

This software adopts B/S framework programming of ASP+ACCESS. The whole name is Active Server Pages, which is the development environment of WEB server terminal. It can generate and perform dynamic, interactive and high-performance WEB service application. ASP adopts VBscript (Java script) as its own developed language. ASP has strong compatibility, which is suitable for being applied in several browsers to view the pages. Besides, the language compatibility is high. ASP is compatible with all ActiveX Script language [3]. Except for combining with HTML, VBScript, Java Script, Active X server components, it can adopt “plug-in (component module)”, and use the language provided by other manufacturers (Third Party). The privacy and security are so high. ASP can easily connect different databases through ODBC (Open Database Connectivity), such as Access, Foxpro, dBase, Oracle, etc.

The database adopted for the software development is Microsoft Office Access, which is a database management system with the integration of the graphic user interface of the database engine and software development. The software developer and data architect can use Microsoft

Access to develop application software. "Senior User" can use it to construct the software application. Like other office application, ACCESS supports Visual Basic macro-language. It is a programming language facing the objects. It can cite various objects, including DAO (data access objects), ActiveX data objects, and many other ActiveX modules. The visible object is to display the statement [4]. Their method and attribute refer that, under VBA programming environment, VBA code module can state and invoke Windows operation system function.

## Installation Deployment

The software adopts B/S framework of ASP+ACCESS to make development. This system is deployed on Win2003 server, and it also needs to be allocated in IIS environment. Establish new stations on IIS, and allocate them. Firstly, it is necessary to fill in website to describe the website traffic statistics analysis system. IP address is IP and port number of the server. If the website domain name is applied, it is feasible to interpret DNS onto this IP address, and fill in DNS on the engine head of the website.

## System Structure

The major function modules of the software are: statistical generalization, latest visiting, source details, online statistics, page statistics, monthly statistics, second glance rate statistics, customer end statistics, calculator resetting, and exit management.

The statistical generalization displays the whole statistical information of the website, including the statistical date, statistical days, number of online people, total traffic volume, daily traffic volume, monthly traffic volume, average daily access statistics, etc.

Display the latest access record, including the visitor's IP, used operation system, browser, access time, etc.

Specify the users' source details, and display whether the users enter from other websites or directly input the websites through the browser, as well as PV quantity, IP quantity, visited IP address, the last access time, etc.

Online statistics is to make statistics on the information of the online users, including the IP of the visitors, used operation system, browser, the starting time of the access, the last access time, skip resource, visited pages, etc.

The page statistics is to make statistics on the view amount of each page, proportion and other information.

The annual statistics is to make statistics on the users' access information monthly.

The second glance rate is to make statistics on the users' second glance status [5].

The customer end statistics is to make statistics on the customer end situation adopted by the visitors, including the browser, operation system, screen resolution ratio, etc.

The counter resetting is to reset the single item or all statistics. After the data is cleared up, it will not be recovered. Instead, it is necessary to work carefully, and the deletion can be performed through inputting the password of the administrators.

## Software code

```
<%Call ConnClose()%>
<!--#include file="znwzConn.Asp"-->
<!--#include file="znwzmyfunznwzcion.asp"-->
<%Aznwzcion=Request.QueryString("Aznwzcion")
Assort=Int(Request.QueryString("Assort"))
Tmp=HttpPath(2)
If Assort=1 Then
Sub CDGen_Reset()
LineCount = 0
CursorX = 0
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CursorY = 0
DirX = 0
DirY = 1
End Sub
Sub CDGen_Clear()
Dim i, j
ReDim Buf(nPixelHeight - 1, nCharCount * nPixelWidth - 1)
For j = 0 To nPixelHeight - 1
For i = 0 To nCharCount * nPixelWidth - 1
Buf(j, i) = 0
Next
Next
End Sub
Sub CDGen_PSet(X, Y)
Buf(Y, X) = 1
End Sub
Sub CDGen_Line(X1, Y1, X2, Y2)
Dim DX, DY, DeltaT, i
DX = X2 - X1
DY = Y2 - Y1
If Abs(DX) > Abs(DY) Then DeltaT = Abs(DX) Else DeltaT = Abs(DY)
For i = 0 To DeltaT
CDGen_PSet X1 + DX * i / DeltaT, Y1 + DY * i / DeltaT
Next
End Sub
Sub CDGen_FowardDraw(nLength)
nLength = Sgn(nLength) * Abs(nLength) * (1 - nLengthRandom / 100 + Rnd * nLengthRandom * 2 / 100)
ReDim Preserve Lines(3, LineCount)
Lines(0, LineCount) = CursorX
Lines(1, LineCount) = CursorY
CursorX = CursorX + DirX * nLength
CursorY = CursorY + DirY * nLength
Lines(2, LineCount) = CursorX
Lines(3, LineCount) = CursorY
LineCount = LineCount + 1
End Sub
Sub CDGen_SetDireznwzcion(nAngle)
Dim DX, DY
nAngle = Sgn(nAngle) * (Abs(nAngle) - nAngleRandom + Rnd * nAngleRandom * 2) / 180 * 3.1415926
DX = DirX
DY = DirY
DirX = DX * Cos(nAngle) - DY * Sin(nAngle)
DirY = DX * Sin(nAngle) + DY * Cos(nAngle)
End Sub
Sub CDGen_MoveToMiddle(nAznwzcionIndex, nPercent)
Dim DeltaX, DeltaY
DeltaX = Lines(2, nAznwzcionIndex) - Lines(0, nAznwzcionIndex)
DeltaY = Lines(3, nAznwzcionIndex) - Lines(1, nAznwzcionIndex)
CursorX = Lines(0, nAznwzcionIndex) + Sgn(DeltaX) * Abs(DeltaX) * nPercent / 100
CursorY = Lines(1, nAznwzcionIndex) + Sgn(DeltaY) * Abs(DeltaY) * nPercent / 100
End Sub
Sub CDGen_MoveCursor(nAznwzcionIndex)
CursorX = Lines(0, nAznwzcionIndex)
CursorY = Lines(1, nAznwzcionIndex)
End Sub
Sub CDGen_Close(nAznwzcionIndex)
ReDim Preserve Lines(3, LineCount)
Lines(0, LineCount) = CursorX
Lines(1, LineCount) = CursorY
CursorX = Lines(0, nAznwzcionIndex)

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CursorY = Lines(1, nAznwzcionIndex)
Lines(2, LineCount) = CursorX
Lines(3, LineCount) = CursorY
LineCount = LineCount + 1
End Sub
Sub CDGen_SetDireznwzcion(nAngle)
Dim DX, DY
nAngle = Sgn(nAngle) * (Abs(nAngle) - nAngleRandom + Rnd * nAngleRandom * 2) / 180 * 3.1415926
DX = DirX
DY = DirY
DirX = DX * Cos(nAngle) - DY * Sin(nAngle)
DirY = DX * Sin(nAngle) + DY * Cos(nAngle)
End Sub
Sub CDGen_MoveToMiddle(nAznwzcionIndex, nPercent)
Dim DeltaX, DeltaY
DeltaX = Lines(2, nAznwzcionIndex) - Lines(0, nAznwzcionIndex)
DeltaY = Lines(3, nAznwzcionIndex) - Lines(1, nAznwzcionIndex)
CursorX = Lines(0, nAznwzcionIndex) + Sgn(DeltaX) * Abs(DeltaX) * nPercent / 100
CursorY = Lines(1, nAznwzcionIndex) + Sgn(DeltaY) * Abs(DeltaY) * nPercent / 100
End Sub
Sub CDGen_MoveCursor(nAznwzcionIndex)
CursorX = Lines(0, nAznwzcionIndex)
CursorY = Lines(1, nAznwzcionIndex)
End Sub
Sub CDGen_Close(nAznwzcionIndex)
ReDim Preserve Lines(3, LineCount)
Lines(0, LineCount) = CursorX
Lines(1, LineCount) = CursorY
CursorX = Lines(0, nAznwzcionIndex)
CursorY = Lines(1, nAznwzcionIndex)
Lines(2, LineCount) = CursorX
Lines(3, LineCount) = CursorY
LineCount = LineCount + 1
End Sub
Sub CDGen_CloseToMiddle(nAznwzcionIndex, nPercent)
Dim DeltaX, DeltaY
ReDim Preserve Lines(3, LineCount)
Lines(0, LineCount) = CursorX
Lines(1, LineCount) = CursorY
DeltaX = Lines(2, nAznwzcionIndex) - Lines(0, nAznwzcionIndex)
DeltaY = Lines(3, nAznwzcionIndex) - Lines(1, nAznwzcionIndex)
CursorX = Lines(0, nAznwzcionIndex) + Sgn(DeltaX) * Abs(DeltaX) * nPercent / 100
CursorY = Lines(1, nAznwzcionIndex) + Sgn(DeltaY) * Abs(DeltaY) * nPercent / 100
Lines(2, LineCount) = CursorX
Lines(3, LineCount) = CursorY
LineCount = LineCount + 1
End Sub
Sub CDGen_Flush(X0, Y0)
Dim MaxX, MinX, MaxY, MinY
Dim DeltaX, DeltaY, StepX, StepY, OffsetX, OffsetY
Dim i
MaxX = MinX = MaxY = MinY = 0
For i = 0 To LineCount - 1
If MaxX < Lines(0, i) Then MaxX = Lines(0, i)
If MaxX < Lines(2, i) Then MaxX = Lines(2, i)
If MinX > Lines(0, i) Then MinX = Lines(0, i)
If MinX > Lines(2, i) Then MinX = Lines(2, i)
If MaxY < Lines(1, i) Then MaxY = Lines(1, i)
If MaxY < Lines(3, i) Then MaxY = Lines(3, i)
If MinY > Lines(1, i) Then MinY = Lines(1, i)

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If MinY > Lines(3, i) Then MinY = Lines(3, i)
Next
DeltaX = MaxX - MinX
DeltaY = MaxY - MinY
If DeltaX = 0 Then DeltaX = 1
If DeltaY = 0 Then DeltaY = 1
MaxX = MinX
MaxY = MinY
If DeltaX > DeltaY Then
StepX = (nPixelWidth - 2) / DeltaX
StepY = (nPixelHeight - 2) / DeltaX
OffsetX = 0
OffsetY = (DeltaX - DeltaY) / 2
Else
StepX = (nPixelWidth - 2) / DeltaY
StepY = (nPixelHeight - 2) / DeltaY
OffsetX = (DeltaY - DeltaX) / 2
OffsetY = 0
End If
For i = 0 To LineCount - 1
Lines(0, i) = Round((Lines(0, i) - MaxX + OffsetX) * StepX, 0)
If Lines(0, i) < 0 Then Lines(0, i) = 0
If Lines(0, i) >= nPixelWidth - 2 Then Lines(0, i) = nPixelWidth - 3
Lines(1, i) = Round((Lines(1, i) - MaxY + OffsetY) * StepY, 0)
If Lines(1, i) < 0 Then Lines(1, i) = 0
If Lines(1, i) >= nPixelHeight - 2 Then Lines(1, i) = nPixelHeight - 3
Lines(2, i) = Round((Lines(2, i) - MinX + OffsetX) * StepX, 0)
If Lines(2, i) < 0 Then Lines(2, i) = 0
If Lines(2, i) >= nPixelWidth - 2 Then Lines(2, i) = nPixelWidth - 3
Lines(3, i) = Round((Lines(3, i) - MinY + OffsetY) * StepY, 0)
If Lines(3, i) < 0 Then Lines(3, i) = 0
If Lines(3, i) >= nPixelHeight - 2 Then Lines(3, i) = nPixelHeight - 3
CDGen_Line Lines(0, i) + X0 + 1, Lines(1, i) + Y0 + 1, Lines(2, i) + X0 + 1, Lines(3, i) + Y0 + 1
Next
End Sub
Sub CDGen_Blur()
Dim i, j
For j = 1 To nPixelHeight - 2
For i = 1 To nCharCount * nPixelWidth - 2
If Buf(j, i) = 0 Then
If ((Buf(j, i - 1) Or Buf(j + 1, i)) And 1) <> 0 Then
Buf(j, i) = 2
End If
End If
Next
Next
End Sub
Sub CDGen_NoisyDot()
Dim i, j, NoisyDot, CurDot
For j = 0 To nPixelHeight - 1
For i = 0 To nCharCount * nPixelWidth - 1
If Buf(j, i) <> 0 Then
NoisyDot = Int(Rnd * Rnd * nMaxSaturation)
Seleznwz Case nColorNoisyDotOdds
Case 0
CurDot = nMaxSaturation
Case 1
CurDot = 0
Case Else
CurDot = NoisyDot

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End Seleznwz
If Rnd < nColorNoisyDotOdds Then Buf(j, i) = CurDot Else Buf(j, i) = nMaxSaturation
Else
NoisyDot = Int(Rnd * nMaxSaturation)
Seleznwz Case nBlankNoisyDotOdds
Case 0
CurDot = 0
Case 1
CurDot = nMaxSaturation
Case Else
CurDot = NoisyDot
End Seleznwz
If Rnd < nBlankNoisyDotOdds Then Buf(j, i) = CurDot Else Buf(j, i) = 0
End If
Next
Next
End Sub

```

## Conclusion

Through deploying installing and operating the intelligent website traffic monitoring system, it is feasible to intuitively make statistics on the daily, monthly and annual traffic volume, IP visiting, and page view ranking, as well as which searcher it comes from. The result from the statistical analysis is intuitive and accurate, which enables the administrators to promptly understand the website operation status and visiting status.

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