

XOJO Web Easier Than PHP

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About Me

- Retired UK police officer
- Self taught - 'Citizen Developer'
- Used XOJO since 2010 for:
 - Client/Server databases
 - Event management system
 - 'SMS Manager' text messaging system
 - ODBC database system addons
- Program mainly for pleasure



The 'Rep' Role

- UK police officers have a 'staff association'
- Different to a union
- Representatives are serving officers
 - They are elected by colleagues
 - They have policing as their day job
 - Rep. role is additional to policing duties
 - Little emphasis on recognition



The Problem

- No accurate mechanism for recording work
- Paper records were cumbersome
- Email & 'spreadsheets' were 'hit and miss'
- Not everyone completed worksheets
- Poor accuracy and consistency
- Time consuming for rep and 'office'
- No real analysis without additional work
- New 'performance regime' introduced 2016



PHP

Notify Rep Work

Date:

Type:

General

Your Collar:

Officer Collar:

Time: (minutes)

Own Time:

Notes: (240 chars. max)

Update Office

Clear Form

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XOJO

RepTime v2.05

Date Assisted (DD-MM-YYYY)

26 01 2019 Today

Type Of Enquiry:

Fed. Rep. Officer Time(Minutes)

Own Time

Notes

Enter free text here up to 240 characters maximum

Submit Close

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Why XOJO Web?

- Not used XOJO web previously
- The project would be a good learning opportunity
- Transferable XOJO desktop skills
- Much easier than updating/customising PHP
- Endless expansion possibilities
- Easier to make more 'polished'
- Only negative - additional cost (Hosting)

Web Extra Steps

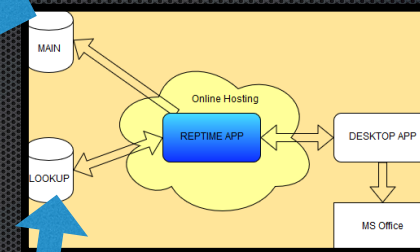
- Standalone or CGI
 - I chose to run app as .cgi
- Server OS
 - Using Linux On Serverwarp
- Getting files onto your server
 - Need additional software in Windows
 - WinSCP (<https://winscp.net>)
 - Set file/directory permissions
- Web apps behave differently to desktop apps



System Overview

MAIN DATABASE		
Name	Type	Length
ID	Int	8
Entered	DateTime	
Type	Varchar	6
Rep_Collar	Varchar	6
Officer_Collar	Varchar	
Time_Minutes	Double	
Notes	Varchar	255
Date_Advice	Date	
Imported	Enum	0 or 1
Own_Time	Enum	0 or 1
ForceCode	Int	11
QualControl	Date	
SenderDetail	Varchar	255

LOOKUP			TimesUsed		EmailAddress		
ForceID	Int	2	LastUsed	DateTime	Offline	Enum	
ForceName	Varchar	40	Expenses	Enum	0 or 1	Notifications	Enum
ForceKey	Varchar	10	MileageRate	Double	10	NoteEncrypt	Enum
							0 or 1



Web App Benefits



- Always accessible & cross platform
- Easy to use and quick data entry
- Better data consistency
- Easier to maintain than a script for each different branch than PHP
 - `Session.URLParameterCount` and `URLParameterName` are utilised to identify valid users and correctly 'link' their entries.

Identifying Valid Users



- Utilise a Dynamic DNS Service rather than convoluted I.P. address
- Each branch provided with a unique DNS link
 - Redirects with their access code
- Web `session.open` checks the URL
 - Checks validity
 - Checks branch settings
 - Continues to main page or not.



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Check Parameters



`session.open`

```
//get a force code=forceID key    if boo=false then
If Self.URLParameterCount > 0 Then
Session.forceID =                session.forceName="UNREGISTERED"
Val(Self.URLParameterName(0))    end if
    session.forceKey =            else
Self.URLParameter(CStr(Session.forceID))
    session.forceName="UNREGISTERED"
    end if
    If session.forceID=111 And
session.forceKey="###" Then
    //111=### admin access.
    webLogin.show
    End If
dim boo as boolean=false
boo=lookup_force(Session.forceID)
```

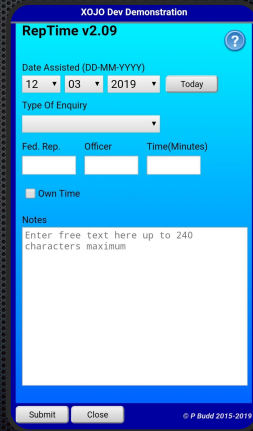
Lookup_Force() Method



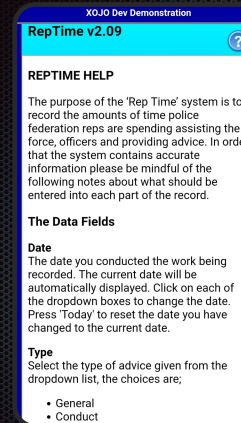
- Checks if force 'offline', if so returns false & message
- Checks note encryption flag - Yes/No (Legacy Version)
- Validates Key Provided
 - Loads the Full Organisation Name
 - Updates 'Last Used' date field
 - Updates 'Times Used' numeric field
- Returns true and then we continue

The Main Page

- Simple functional design
 - Minimalist
 - Effective
 - Loads quickly
 - Basic XOJO Controls
 - Less is sometimes more
 - <http://xdev2019.ddns.net>



Built In Help



- Easy to implement.
- HTML Viewer linked to server local HTML file.
- Hidden/Shown depending on status by clicking '?'
- Easily updated as required.

Help Creation

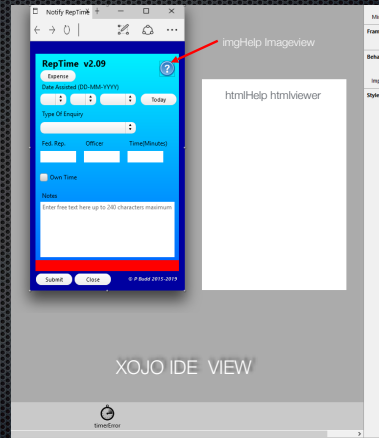
```

imgHelp.MouseDown()

Dim f As FolderItem
Dim htm as string
If DebugBuild Then
    f = GetFolderItem("").Parent.Child("help.html")
#else
    f = getFolderItem("help.html")
#Endif

Dim t as TextInputStream
t = TextInputStream.Open(f)
t.Encoding = Encodings.UTF8
htm = t.ReadAll
htmlHelp.LoadPage(htm)

if htmlHelp.Visible=false then
    htmlHelp.Left=rect1.Left
    htmlHelp.Width=rect1.Width
    htmlHelp.Visible=true
    btnExpenses.Visible=false //hide button
else
    htmlHelp.Visible=false
    htmlHelp.Left=311
    htmlHelp.Width=297
    if Session.expenses="1" then
        btnExpenses.Visible=true
    end if
end if
end if
    
```



Data Submissions

- Submit A Record
 - After checking all required data is present
 - Encrypts notes using a salt and other unique force item to ensure notes unique across all forces (MBS Plugin)
 - Uses prepared statements
 - Resets form values
 - Remains for further entries until 'Close'



Prepared Statements

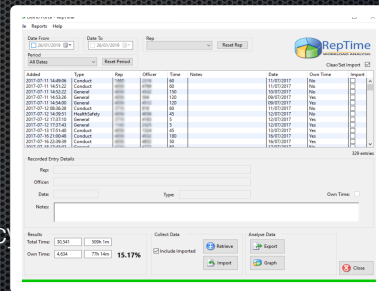
- They are important
- Don't be afraid of them
- Previously built SQL strings using concatenation
 - Inherent dangers with free text entry – SQL injection not least
- Prepared statements are easier to read
- More difficult to debug (you can't see/test the SQL) – unless someone knows different?

Addhandler Timers

- System utilises two in app.open event
 - for app update - *timerShutdown()*
 - every 5 seconds is server .cgi file present?
 - enables .cgi web app update
 - delete .cgi, app stops, upload new version
 - for email reminders - *timerAutosend()*
 - sent each 24 hrs to registered user

Desktop Application

- Microsoft Windows
- Utilises MS OFFICE
 - Excel
 - Graphing capability
 - Data export/analysis
 - MS Access
 - Import notes to legacy database
- XOJO Office Plugin very useful



Desktop Closeup

This close-up screenshot highlights specific features of the RepTime application. Red arrows point to the 'Date From' and 'Date To' fields, the 'Search Period Dropdown' menu, and a 'Notes' field containing text with an incorrect encryption key. The application title bar reads 'XDEV Demo - RepTime'.

Added	Type	Rep	Officer	Time	Notes	Date	Own Time	Import
2018-11-19 09:56:59	Equality	2664	0009	30		19/11/2018	No	<input type="checkbox"/>
2018-11-19 09:56:43	Conduct	2664	1845	30		19/11/2018	No	<input type="checkbox"/>
2018-11-20 15:51:24	General	2664	1845	60		20/11/2018	No	<input type="checkbox"/>
2018-11-20 15:52:07	General	2664	0009	45		20/11/2018	No	<input type="checkbox"/>
2018-11-29 11:52:39	Health and Safety	3304	2477	120		22/11/2018	No	<input type="checkbox"/>
2018-11-26 15:32:37	General	877	877	120		26/11/2018	No	<input type="checkbox"/>
2018-12-06 12:36:11	Conduct	2664	1845	30		06/12/2018	No	<input type="checkbox"/>
2018-12-07 19:06:55	Conduct	1708	1909	15		23/11/2018	No	<input type="checkbox"/>
2019-02-06 17:56:09	General	234	543	32	Some text	06/02/2019	Yes	<input type="checkbox"/>
2019-02-06 17:56:40	Health and Safety	234	332	221	Some more text	06/02/2019	No	<input type="checkbox"/>
2019-02-03 16:15:43	General	3214	3214	23	Other notes here.	03/02/2019	Yes	<input checked="" type="checkbox"/>
2019-02-03 16:15:05	General	3252	3252	23		03/02/2019	Yes	<input type="checkbox"/>

Search Period Dropdown

```

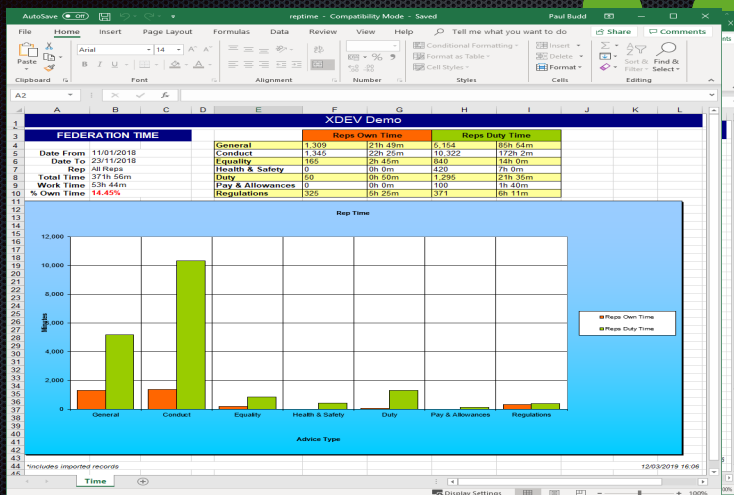
Select case popPeriod.text
case "All Dates" // do nothing
case "Current Month"
  sql1=sql1+" AND MONTH(Entered) =
MONTH(DATE_SUB(CURDATE(), INTERVAL 0
month)) AND YEAR(Entered) =
YEAR(DATE_SUB(CURDATE(), INTERVAL 0
YEAR)) " _
case "Previous Month"
  sql1=sql1+" AND MONTH(Entered) =
MONTH(DATE_SUB(CURDATE(), INTERVAL 1
month)) AND YEAR(Entered) =
YEAR(DATE_SUB(CURDATE(), INTERVAL 0
YEAR)) " _
case "Previous Year"
  sql1=sql1+" AND YEAR(Entered) =
YEAR(DATE_SUB(CURDATE(), INTERVAL 1
YEAR)) " _
case "Current Year"
  sql1=sql1+" AND YEAR(Entered) =
YEAR(DATE_SUB(CURDATE(), INTERVAL 0
YEAR)) " _
case "Last 30 Days"
  sql1=sql1+" AND Entered BETWEEN
(CURDATE() - INTERVAL 30 DAY) AND
CURDATE()"
case "Last 3 Months"
  sql1=sql1+" AND Entered BETWEEN
(CURDATE() - INTERVAL 3 MONTH) AND
CURDATE()"
case "Last 6 Months"
  sql1=sql1+" AND Entered BETWEEN
(CURDATE() - INTERVAL 6 MONTH) AND
CURDATE()"
case "Last 12 Months"
  sql1=sql1+" AND Entered BETWEEN
(CURDATE() - INTERVAL 12 MONTH) AND
CURDATE()"
end select
end if
  
```

*MySQL sql

Excel Templates

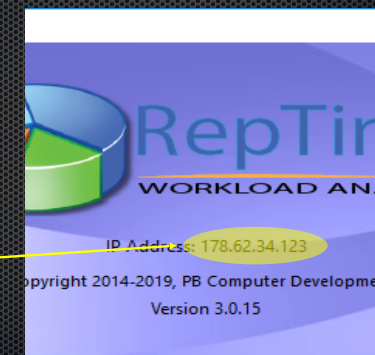
- Prebuild spreadsheets as templates, very easy!
- Create graph and tables in advance on spreadsheet
- Save the sheets alongside the executable
- Populate with data from XOJO App using Office Automation plugin
- The filled template, can be easily printed and modified.
- Saves a lot of additional programming work

TEMPLATE EXAMPLES



Direct DB Connection

- Considered bad practice - BUT
- Small data sets
- Quick download
- Whitelisted IP address
- Easy to implement



About – I.P. Address



Desktop: win_about.open

```
//update the version text using the details stored within the app
txtversion.text="Version "+app.ShortVersion

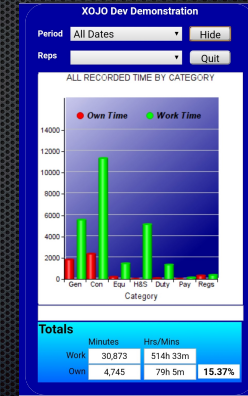
//get ip address of system
Dim http As New HTTPSocket
Dim ip as string=""

http.yield=true

ip=http.Get("https://api.ipify.org", 30)
label1.text="IP Address: "+ip
```

The Future Is Here

- Web analysis
 - Chartdirector for graphs
- XOJO console app monitors service 'SMS texts' issues to me
 - SMS new admin user requests
- Desktop System Manager
 - Reset admin passwords,
 - Email users
 - Disable branch access etc.



Q & A

Thank you.



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