Dynamic File Maintenance using WebSpeed

– A FreeFramework Approach

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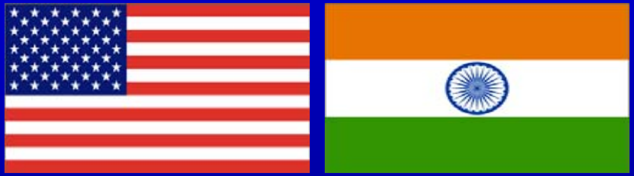


PUG CHALLENGE 2002

Special Thanks:

- **Steve Lichtenberg – Develop/Design**

  Safemasters Inc. (USA)

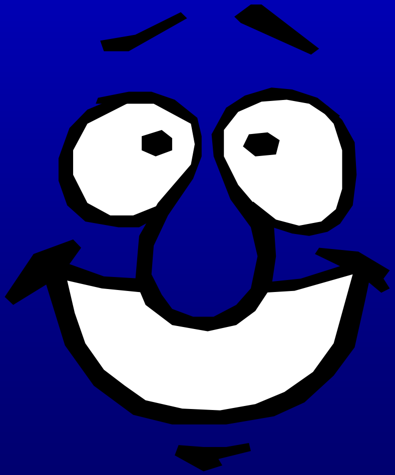
- **Geoff Crawford – Design**

  Innov8 Computer Software, LLC. (USA)

- **FreeFramework Project…**

  WebSpeed Experts!

  http://www.freeframework.org



I am not the "Guru" on this, but the "Disciple"…

Overview:

- ***Reasons for Development***
- ***Design Objectives***
- ***Development Methods***
- ***Why use this Method***
- ***Code Sampler***
- ***Demo***

Reasons for Development:

- **Create a *“Highly Flexible”* Web based environment**

- **Speed *“Future Development”* efforts**
- ***“Simplify”* File Maintenance tasks**

Design Objectives – Part I:

- **Initially *“Web”* based but expand the methods to other UI**

- ***“Single Code Source”* for all Reference Data Manipulation**

- **Use 4GL *“Dynamic”* capabilities to create a single code set for all Maintenance applications**

Design Objectives – Part II:

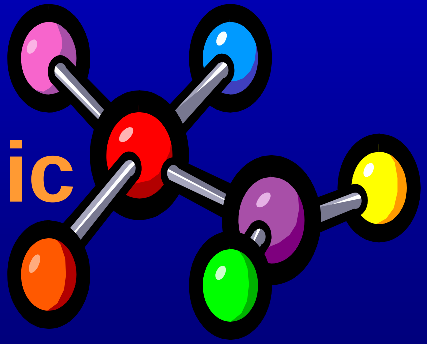
- Highly *"Customizable"*
- Use SUPER Procedures
- Build on *"proven"* methods for *"dynamic"* data manipulation and display
- Extend DataPump

  Progressions, Winter 2001 – Issue# 44

  http://www.innov8cs.com/downloads_code.asp

Development Methods – Part I:

- **Use proper *"Tiering"* of Application Layers**
- **ALL *"Data Access"* is Dynamically Generated**
- ***"Bottom Up"* Approach…Atomic**



- **Start at lowest *"Functional Unit"* and build up**

Development Methods – Part II:

- Dynamically *“Generate”* Web pages based on *“specific structure”* of data Record

- Develop *“Single Set”* of routines to work for ALL Database Tables

- Use SUPER Procedures for Displaying data Records – Customizable

Development Methods – Part III:

- Override DataPump SUPER Procedures for data Display… as needed

- ALL data buffers make use of 4GL "Dynamic Buffers"

- ALL data queries use 4GL "Dynamic Query" constructs

Development Methods – Part IV:

- Data Table and Key Field information are passed through Web Query Stream

- ALL requests are via *“POST”* Methods to Web Server

- *“Data Acceptor”* routine Collects all data and determines what procedures to Run…

Why use this Method – Overview:

- Faster Development
- *“Single Set”* of Routines for all Table Maintenance
- Easier Deployment
- Smaller Code Base

Why use this Method – Comparison Part I:

- Traditional Method
  - ✓“Roll Your Own”
  - ✓Each Table Requires it's own Procedure
  - ✓Deploy MANY Routines
  - ✓Problems with Layout Consistency
- Dynamic Creation
  - ✓Pre-Written API
  - ✓Single Set of Procedures for ALL Tables
  - ✓Deploy Single Set of Routines
  - ✓One Display Routine – Consistent Layout

Why use this Method – Comparison Part II:

- **Traditional Method**
  - ✓ Apply GLOBAL changes to MANY Routines
  - ✓ Inflexible
  - ✓ Avg. Development Time: 4 - 6 Hours (1 - 2 with Templates)

- **Dynamic Creation**
  - ✓ Apply GLOBAL changes ONCE only
  - ✓ Flexible through SUPERs
  - ✓ Avg. Development Time: 0 Hours

Why use this Method – Comparison Part III:

- <u>Traditional Method</u>
  - ✓ Application Navigation and Deployment can be difficult
  - ✓ Must be connected to Database for Compiling

- <u>Dynamic Creation</u>
  - ✓ Navigation issues reduced
  - ✓ No Database necessary for Compiling – Deployment of .r code is possible

Code Sampler
– Data Acceptor:

```
CREATE BUFFER hfieldBuf FOR TABLE filNm.

CASE i-Mode:
   /* i-mode is the variable used to tell the Routine what to do */
   WHEN “doDelete”:U THEN
      DO:
         /* Generic DELETE routine for all Table deletes */
         RUN deleteRec.p (INPUT filNm,
                          INPUT keyFld " = " reqNum)
                         NO-ERROR.
         <... ERROR PROCESSING...>
      END. /* WHEN “doDelete” */

   WHEN “goAdd”:U THEN
      DO:
         /* DISPLAY Add/Update Frame or RUN DB Table Update */
         RUN dispAddUpd (INPUT “add”:U,
                         INPUT filNm,
                         INPUT keyFld,
                         INPUT "",
                         INPUT hfieldBuf,
                         INPUT prevCnt,
                         INPUT nextCnt).
         RETURN.  /* Prevents Run of Display List */
      END. /* WHEN “goAdd” */
```

Code Sampler
– Display Run Statement:

```
...

RUN baseRun.p (INPUT filNm,
               INPUT keyFld,
               INPUT whereCl,
               INPUT i-Mode,
               INPUT nextCnt,
               INPUT prevCnt,
               INPUT maxReturn,
               INPUT returnCnt)
              NO-ERROR.

...
```

Demo – Traditional Method:

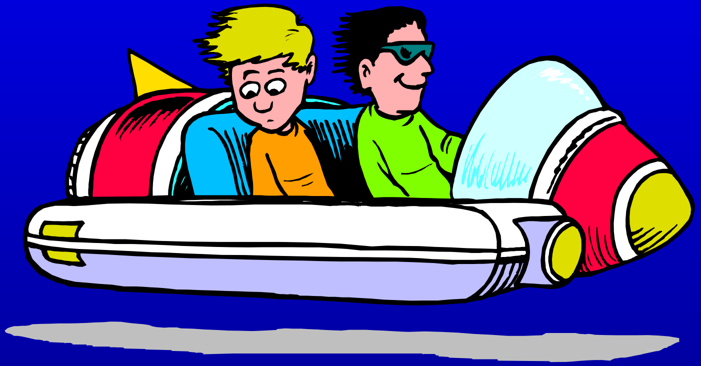
***** DEMO *****

Demo
– Dynamic Creation:

** DEMO **

Future Directions:

- **UI – Modifications for Interfaces…**
  - ✓WebClient
  - ✓GUI Client/Server
  - ✓XML and XSLT
  - ✓DWP
  - ✓WAP



- **BL – Enhanced Hooks for inserting Business Logic…**

Questions?

Additional Information and Downloads…

www.freeframework.org

“WebSpeed Complete”

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