Avoiding DegreeWorks Localization Pitfalls: Programming Practices

Gabriel Tocci

04-OCT-2017 @ 11:15am - 12:15pm

Session ID # 703
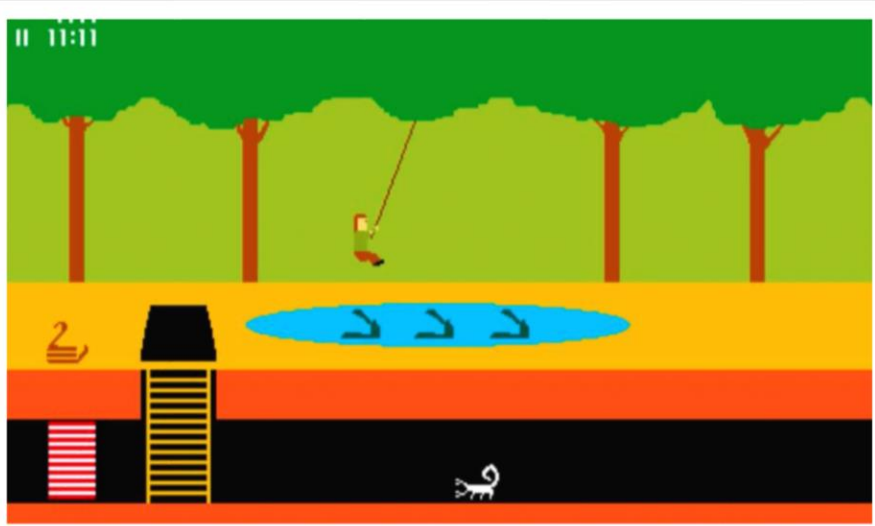
Session Format

❖ 60 minute time slot

     ❖ Q&A

❖ Conference Track: DegreeWorks & Technical

❖ Scribe?

   ❖ Un-uh. Sorry!

❖ Can you see REAL good?

❖ gabrieltocci.com/slides

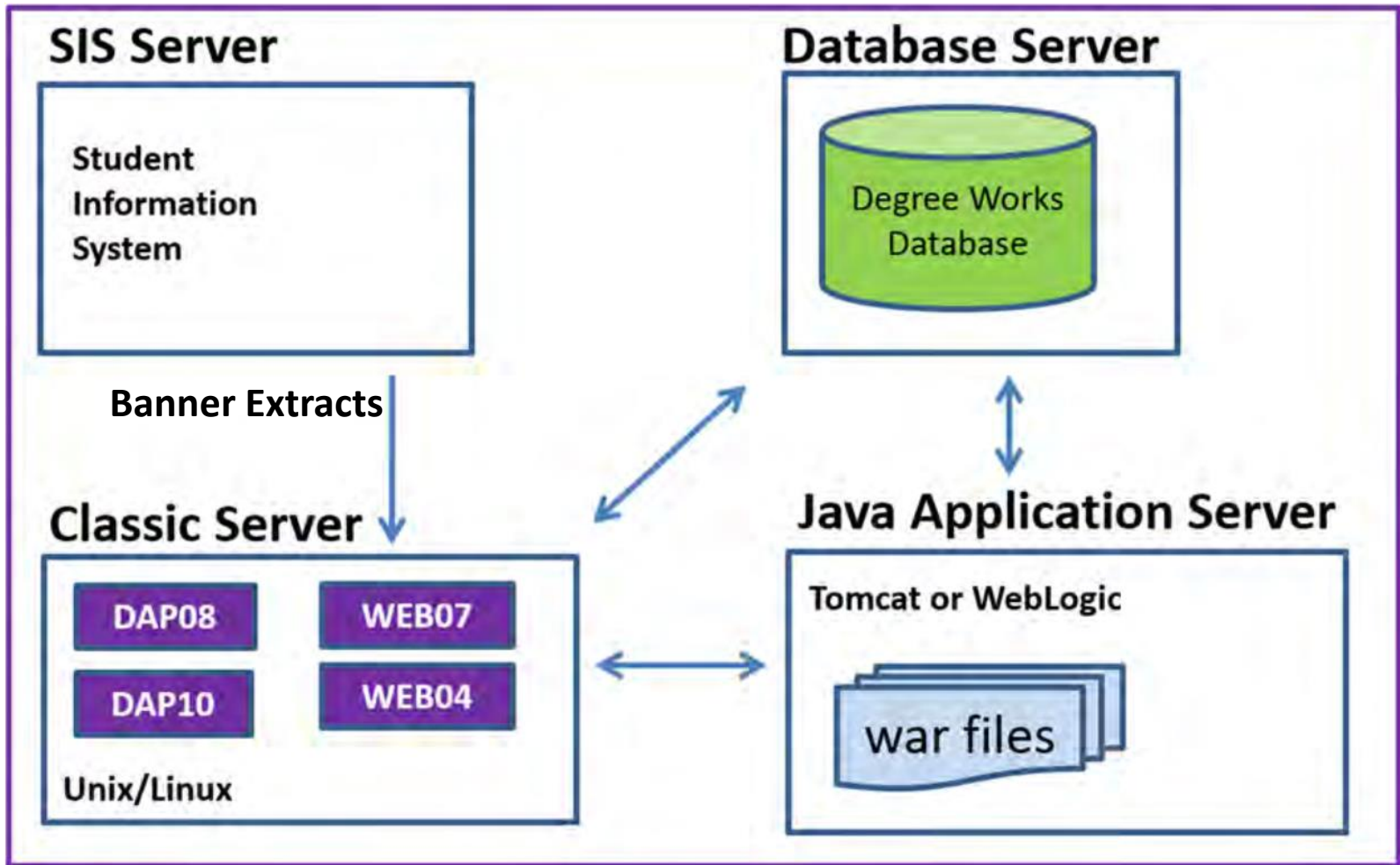# Avoid difficult pitfalls via code version control

- [Degree Audit System](#)
  - ❖ Students and Courses / PROD -> DGWP
  - ❖ Curriculum / Scribe
  - ❖ Audit view / WebApp
  - ❖ Program Plans
    - ❖ Registration Integration
    - ❖ Argos Reports

- End Users
  - ❖ <u>Students</u>: Audits & Plans
  - ❖ <u>Advisors</u>: Audits, Plans, Notes, Exceptions
  - ❖ <u>Graduation Office</u>: Audits & Exceptions

Code That Changes: Git

❖ Banner Extracts
- ❖ User, Student, Staff, Courses
- ❖ User Roles
- ❖ BIF Document

❖ SureCode
- ❖ UCX Settings
- ❖ Ban080's

❖ SHP Scripts

❖ XML/FOP

❖ Dashboard
- ❖ SourceTree
- ❖ Gitlab-ci.yml

etsu 🔒

ETSU mods to DegreeWorks

| ⭐ Unstar | 1 | ⑂ Fork | 0 | SSH ▾ | git@git.etsu.edu:degreeworks/etsu | 📋 | ⬇ ▾ | ➕ ▾ | 🔔 Global ▾ |

Files (1.2 MB) Commits (26) Branches (2) Tags (0) Readme Add Changelog Add License Add Contribution guide Set up CI
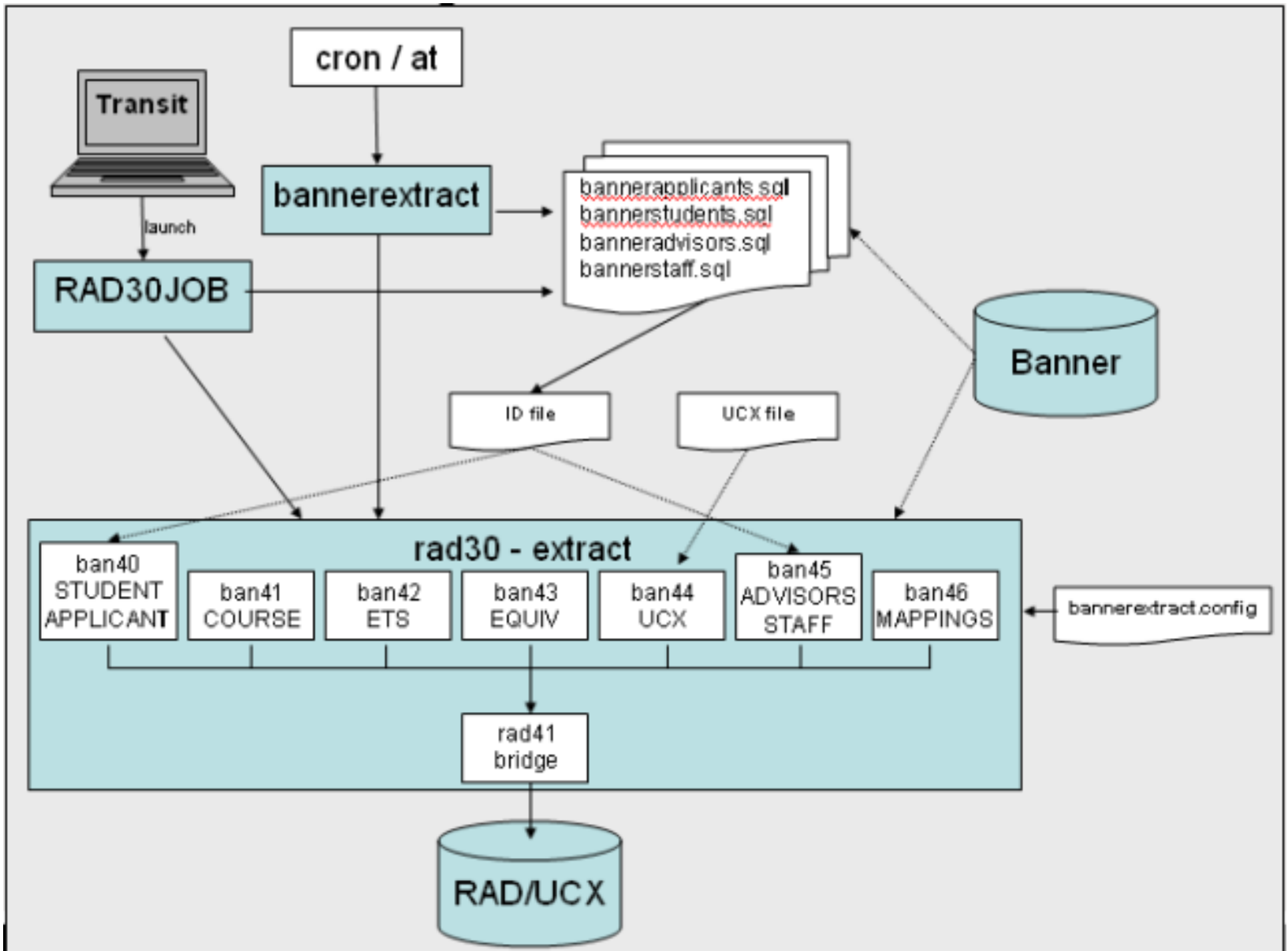
| master ▾ | etsu / | ➕ | History | 🔍 Find file | ⬇ ▾ |

removed sgbstdn beacuse its not alywas in sync w/sorlcur and sorlfos ...
Gabriel Tocci committed 6 months ago   c970b439 📋

Name	Last commit	Last Update
📁 Localization	Notes on localization made per screen from initial ...	a year ago
📁 ban080	TFS#771	7 months ago
📁 etsudas4	Fix Http Header to Allow luminis Frame	3 years ago
📁 etsudban	moved CLRK so it doesnt get stomped	2 years ago
📁 tess	4.1.6 localizations added	a year ago
📄 ETSU_Localizations_Worksheet.xls	Initial checking from:	3 years ago
📄 bannerextract.config	removed sgbstdn beacuse its not alywas in sync w/...	6 months ago
🖼 logo.png	common/logo.png	2 years ago
📄 readme.txt	cleaned up the formatting	3 years ago

Commit 80db0a0f 🗐 authored 2 years ago by 🎅 Gabriel Tocci

moved CLRK so it doesnt get stomped

git-tfs-id: [http://etsutfs:8080/tfs/ISCollection]$/Dev/Banner/DegreeWorks;C2157

⚯ parent de9addfc ⑂ master …

Showing **1 changed file ▾** with **8 additions** and **8 deletions**

Hide whitespace changes   Inline   Side-by-side

▾ 🗎 **etsudban/sql/etsu_roles.sql** 🗐   💬   View file @ 80db0a0f

```
...    ...    @@ -34,14 +34,6 @@ update dwschema.shp_user_mst dgw_roles
 34     34              from oitetsu.etsu_dgw_roles@tsth.etsu.edu banner)
 35     35          and dgw_roles.shp_filter in ('CLRK','ADVX','ADVT','ADV','REG','ATHL');
 36     36
 37        -    -- set CLRK
 38        -    update dwschema.shp_user_mst dgw_roles
 39        -        set dgw_roles.shp_filter = 'CLRK'
 40        -      where trim( dgw_roles.shp_access_id ) in
 41        -           (select banner.enumber
 42        -              from oitetsu.etsu_dgw_roles@tsth.etsu.edu banner
 43        -             where banner.dgw_role = 'CLRK');
 44        -
 45     37      -- set ADVX
 46     38      update dwschema.shp_user_mst dgw_roles
 47     39          set dgw_roles.shp_filter = 'ADVX'
...    ...    @@ -74,6 +66,14 @@ update dwschema.shp_user_mst dgw_roles
 74     66              from oitetsu.etsu_dgw_roles@tsth.etsu.edu banner
 75     67             where banner.dgw_role = 'ADVT');
 76     68
        69    +    -- set CLRK
        70    +    update dwschema.shp_user_mst dgw_roles
        71    +        set dgw_roles.shp_filter = 'CLRK'
        72    +      where trim( dgw_roles.shp_access_id ) in
```

Surecode

❖ Surecode? Yuk!
  ❖ Export to File
    ❖ Version Control
    ❖ Import
❖ BAN080
  ❖ Do as much as possible with SQL

Field	Value
Key *	GPAINST:COLUMN
Value 1	SHRLGPA_LEVL_CODE || ',' ||
Value 2	to_char(trunc(SHRLGPA_GPA,3),9.999)
Value 3	
Value 4	
Status	
Client Reserve	

```
≡ SureCode-BAN080.txt ✕

 1    BAN080ACSTANDING:COLUMN          SHRTTRM_ASTD_CODE_END_OF_TERM
 2    BAN080ACSTANDING:REPORT          stvastd
 3    BAN080ACSTANDING:TABLE           SHRTTRM a
 4    BAN080ACSTANDING:WHERE_1         a.SHRTTRM_term_code = (SELECT MAX          (b.SHRTTRM_term_code)
 5    BAN080ELS_CODE:COLUMN            SORTEST_TESC_CODE
 6    BAN080ELS_CODE:TABLE             SORTEST
 7    BAN080ELS_CODE:WHERE_1           sortest_tesc_code in ('CTOE','ITO1','ITO2','ITO3','ITO5','T02','IEL1','
 8    BAN080GPAINST:COLUMN             SHRLGPA_LEVL_CODE || ',' || SHRLGPA_GPA
 9    BAN080GPAINST:REPORT
10    BAN080GPAINST:TABLE              SHRLGPA
11    BAN080GPAINST:WHERE_1            shrlgpa_gpa_type_ind = 'I'
12    BAN080INTGRAD:COLUMN             SHRDGMR_DEGS_CODE
13    BAN080INTGRAD:TABLE              SHRDGMR
14    BAN080INTGRAD:WHERE_1            SHRDGMR_DEGS_CODE in ('SO','PN','AW')
15    BAN080PREVDEGREE:COLUMN          SORDEGR_DEGC_CODE
16    BAN080PREVDEGREE:CUSTOM          NONE
17    BAN080PREVDEGREE:TABLE           SORDEGR trans_degr, SGBSTDN stu
18    BAN080PREVDEGREE:WHERE_1         stu.sgbstdn_term_code_eff =          (select max(s2.sgbstd
19    BAN080PREVDEGREE:WHERE_2         where s2.sgbstdn_pidm = stu.sgbstdn_pidm)          and (trans_degr.sorde
20    BAN080TBR_DEGR:COLUMN            SORDEGR_DEGC_CODE
21    BAN080TBR_DEGR:TABLE             SORDEGR trans_degr, SGBSTDN stu
22    BAN080TBR_DEGR:WHERE_1           stu.sgbstdn_term_code_eff =          (select max(s2.sgbstd
```

TFS#771

git-tfs-id: [http://etsutfs:8080/tfs/ISCollection]$/Dev/Banner/DegreeWorks;C3675

```
-○- parent 70a1f9c1  ⑂ master  …
```

Showing **4 changed files ▾** with **8 additions** and **3 deletions**

Hide whitespace changes   Inline   Side-by-side

▸ 🖼 **ban080/INTGRAD.jpg** deleted 100644 → 0   📋   View file @ `70a1f9c1`

This diff is collapsed. Click to expand it.

▸ 🖼 **ban080/PREVDEGREE.jpg** deleted 100644 → 0   📋   View file @ `70a1f9c1`

This diff is collapsed. Click to expand it.

▸ 📄 **ban080/SureCode-BAN080.txt** 📋   💬 View file @ `70f6f667`

This diff is collapsed. Click to expand it.

▾ 📄 **ban080/SureCode-SCR002.txt** 📋   💬 View file @ `70f6f667`

		@@ -3,9 +3,11 @@ SCR002DSPM	Dev Math		R323	R322
3	3	SCR002DSPR	Dev Reading	R323	R322EVDSPR
4	4	SCR002DSPW	Dev Writing	R323	R322EVDSPW
5	5	SCR002ELS_CODE	English Learner Student Code	R323	R322EVELS_CODE
	6	+ SCR002GPAIN	ETSU GPA	R323	R322EVGPAIN
6	7	SCR002GPAINST	ETSU GPA	R323	R322EVGRAINST

```
shrlgpa_gpa number(23,9) => 3.420914525

SHRLGPA_LEVL_CODE || ',' || to_char(trunc(SHRLGPA_GPA,3),9.999)
```

```
681  <Report Code="GPAINST" Value="DS,   .000"/>
682  <Report Code="GPAINST" Value="GR, 3.683"/>
683  <Report Code="GPAINST" Value="UG, 3.420"/>
684  <Report Code="GPAOV" Value="3.683"/>
685  <Report Code="GRADTERM" Value="CISC-BS,200810"/>
686  <Report Code="GRADTERM" Value="CSCI-MS,201310"/>
```

```
468        <td class="StuTableData">
469          <xsl:for-each select="/Report/Audit/Deginfo/Report[@Code='GRADTERM']">
470            <xsl:if test="substring-before(@Value,',') = /Report/Audit/Deginfo/Goal[@Code='PROGRAM']/@Value">
471                  <xsl:value-of select="substring-after(@Value,',')" />
472            </xsl:if>
473          </xsl:for-each>
474        </td>
```

Other Customizable Assets on Back End

❖ SHP Scripts
 ❖ Dynamic Webpage Content
  ❖ Permission Based
 ❖ Web04 Job Builds Webpages
❖ Apache-fop

Front End Localizations

❖ UCX Configuration
  - ❖ SureCode: RPT036, CFG020, SCR001
    - ❖ WebUI and Manual Available
    - ❖ Requires Webrestart
  - ❖ Java WebApps
    - ❖ Dashboard
    - ❖ TESS
    - ❖ Admin Apps: Dwshell, webscribe, etc?

dashboard 🔒

★ Unstar 1   ⑂ Fork 0   SSH ▾ git@git.etsu.edu:degreeworks/dash 📋 ⬇ ▾ + ▾ 🔔 Global ▾

Files (49.8 MB)   Commits (9)   Branches (3)   Tags (0)   CI configuration   Add Changelog   Add License   Add Contribution guide

master ▾   dashboard / +   History   🔍 Find file   ⬇ ▾

> **updated per ellucian Case #01561218**
> Gabriel Tocci committed 6 months ago   ✅ ca726f60 📋

Name	Last commit	Last Update
📁 Images_DG2	Adding missing header images.	11 months ago
📁 META-INF	Baseline 4.1.6	11 months ago
📁 WEB-INF	updated per ellucian Case #01561218	6 months ago
📁 common	ETSU Mods	11 months ago
📁 css	Baseline 4.1.6	11 months ago
📁 errors	Baseline 4.1.6	11 months ago
📁 help	Baseline 4.1.6	11 months ago
📁 js	Baseline 4.1.6	11 months ago
📁 jsp	Baseline 4.1.6	11 months ago
📄 .gitlab-ci.yml	Collapsing yum commands in CI.	11 months ago

Some Dashboard Servlet Files

❖ XSLT Stylesheets
- ❖ DGW_Report.xsl
- ❖ AuditSEP.xsl
- ❖ DGW_Registration.xsl
- ❖ AuditExceptions.xsl
- ❖ AuditTranscript.xsl
- ❖ AuditDisclaimer.xml

❖ CSS: DGW_Style.css

❖ Image Files

❖ HTML
- ❖ SD_HeaderFrame.html
- ❖ SD_ ExpHeader.html

❖ JS: DGW_Functions.js

DGW_Report.xsl

Find Student ID ◄ ◄ Name ► ► | Degree | Major | Level | Classification | Last Audit | Last Refresh

🔍 ****   Ludlow, Constantine ▼   B.S. ▼   Math & Comp & Stat   U   Sophomore   09/18/2008   06/10/2008 at 2:33 p.m   ◎

| Worksheets | Planner | Notes | Petitions | Exceptions | GPA Calc | Admin |

Worksheets ❯

Format: Student View ▼   View   Process New

☑ Include **in-progress** classes
☑ Include **preregistered** classes   **Class History**

History

What If

Look Ahead

Student View AA036941 as of 09/18/2008 at 22:50			
Student	Ludlow, Constantine M 20033	Level	Undergraduate School
ID	****	College	College of Science
Advisor 1	Powers, Peter K.	Degree	BACHELOR OF SCIENCE
Advisor 2		Major	Math & Comp & Stat
Overall GPA	2.973	Classification	Sophomore

Degree Progress

Requirements	30%

Units	309%

■ Major in Mathematics	Academic Year: 2005-2006 Units Required: 68
	GPA: 3.100 Units Applied: 210

☐ Banner test rule	Still Needed:	**10** Classes in **LAW** 6792 or **MUSC** 5 or **SOCI** 201 or **RELS** 2000			
☐ Banner test rule - with attributes	Still Needed:	**10** Units in **ARTS** 400 or **B70T** R0005 or **EC** 103 or **EN** 091 or **SP** 207			
☑ Banner test rule - with prereqs	ENGL 1001	Expository Writing I	A	4	Fall 2000
	Satisfied by	EN 105 - Napier University			
	ENGL 1001	Expository Writing I	A	4	Fall 2000
	Satisfied by	EN 105 - Napier University			
	ENGL 1005	Literature & Composition I	B	3	Fall 2000
	Satisfied by	EN 108 - Napier University			
☐ Banner test rule - with sections	Still Needed:	**10** Units in **ASTR** 503 or **GEOL** 1031 or 1041 or **GERM** 321 or **HERB** 500			
☐ LOWER DIVISION REQUIREMENTS (24)					
☐ Calculus I (4)	Still Needed:	**4** Units in **MATH** 1304			
☐ Calculus II (4)	Still Needed:	**4** Units in **MATH** 1305			

DGW_Report.xsl

- ❖ Block Headers
  - ❖ Block Catalog Year
  - ❖ Block GPA
  - ❖ Block Credits/Classes Applied
  - ❖ Block Credits/Classes Required

- ❖ Block Attributes
  - ❖ Block ID = @Req_id
  - ❖ Block Title = @Title
  - ❖ Block Type = @Req_type
  - ❖ Block Percent Complete = @Per_complete
  - ❖ Catalog Year Literal (@Cat_yrLit)
  - ❖ Block Value (@Req_value)
  - ❖ Catalog Year Start (@Cat_yr_start)

DGW_Report.xsl

```
<xsl:when test="@Req_type = 'OTHER'">
        <xsl:choose>
                <xsl:when test="@Req_value = 'GENED'">
                        <xsl:call-template name="tBlockHeader_1"/>
                </xsl:when>
                <xsl:otherwise>
                        <xsl:call-template name="tBlockHeader_2"/>
                </xsl:otherwise>
        </xsl:choose>
</xsl:when>
```
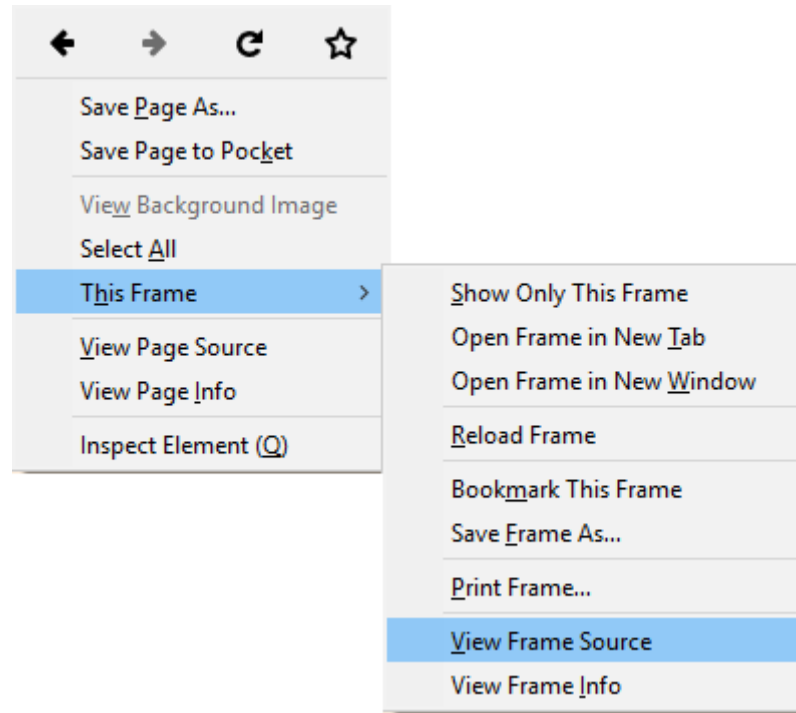
Diagnostic Report

Block	**◼Degree in Master of Accountancy** - 8%
	RA000088: DEGREE = MACC
	33 Credits
	MinCredits 24 in @ @ (With DWRESIDENT = Y) Qualifier original fits:
	Maxpassfail 0 credits
	MaxCredits 0 in @ @ (With DWAGE > 6) Qualifier original fits: [fits are not recorded when the max is zero]
	MaxCredits 10 in @ 5@@7, 5956 Qualifier original fits:
	MaxCredits 0 in @ 5990, 6990, 7990 Qualifier original fits: [fits are not recorded when the max is zero]
	MaxCredits 6 in @ 5960 Qualifier original fits:

Header Qualifiers	CHECK-ELECTIVE-CREDITS-ALLOWED (Qualifier added by auditor per CFG020 flag)
	  Overall = 33 (Credits required by degree block)
	  Blocksum = 33 (Sum of credits required in all *required* blocks; excludes credits in blocks included in other required blocks)
	  Shared = 0 (Credits shared between required blocks)
	  ECA = 0 (Credits allowed/needed in fall-through and non-required blocks)
	  RequiredCreditsApplied = 0 (Credits applied to required blocks)
	  NonrequiredCreditsApplied = 0 (Credits applied to non-required blocks)
	  Overflow = 0 (Excess fall-through credits)
	  CreditsAppliedTowardsDegree = 49 (Credits applied minus overflow)
	  BlocksRequired = RA000087
	  BlocksNotRequired =
	  BlocksRequiredIncluded =

Header Advice	No more than 9 hours can be transferred into the program. You have taken 0 but need 24 more credits.
If Statement	**IF Statement - True**
Requirement:	if (BANNERGPA >= 3.0) then
~ Complete	☑ **You meet the 3.0 minimum GPA requirement. - 100%**
~ Else **~ ~ Incomplete**	X Your GPA is below 3.0 - please see an advisor. - Not Used (n/a %)

Firefox


```
74  <Block Req_id="RA000088" Req_type="DEGREE" Req_value="MACC" Title="Degree in Master of Accountancy"
75     Per_complete="8.333333" Cat_yr_start="1112" Cat_yr_stop ="9999" Cat_yr="1718      " Cat_yrLit="2017"
76     Source="W" Degree="MACC" GPA="3.683" Classes_applied="23" Credits_applied="49" Gpa_grade_pts="136.299988"
77     Gpa_credits="37">
```

App Deployment

```
.gitlab-ci.yml 529 Bytes

 1    before_script:
 2      - 'which ssh-agent || ( yum makecache fast && yum install openssh-clients -y )'
 3      - eval $(ssh-agent -s)
 4      - ssh-add <(echo "$SSH_PRIVATE_KEY")
 5      - mkdir -p ~/.ssh
 6      - '[[ -f /.dockerenv ]] && echo -e "Host *\n\tStrictHostKeyChecking no\n\n" > ~/.ssh/config'
 7
 8    deploy:
 9      script:
10        - jar -cf dashboard.war *
11        - scp dashboard.war oracle@etsudas4:/u01/app/oracle/Middleware/user_projects/domains/BannerDomain/servers/AdminServer/upload/
12        - ssh oracle@etsudas4 'source ~/.bash_profile; ~/redeploy_dgw_dashboard.sh'
```

dashboard

Commit | Push | Pull | Fetch | Branch | Merge | Stash | Discard | Tag | Git Flow | Terminal | Explorer | Settings

All Branches | ☑ Show Remote Branches | Date Order | Jump to:

FILE STATUS
  Working Copy

BRANCHES
  ○ ITS2680-graduation-term
  master
  summit-demo

TAGS

REMOTES

STASHES

Graph	Description	Commit	Author	Date
	Small Test	59c6c19	Gabriel Tocci <toccig@etsu.edu>	10 Oct 20
	Adding missing header images.	d253413	Ian Dillon <dillon@etsu.edu>	27 Sep 20
	More 4.1.5 changes.	715dd8b	Ian Dillon <dillon@etsu.edu>	27 Sep 20
	ETSU Mods originally for 4.1.5 baseline.	4ed542e	Ian Dillon <dillon@etsu.edu>	27 Sep 20
	Collapsing yum commands in CI.	92a1749	Ian Dillon <dillon@etsu.edu>	27 Sep 20
	Adding CI build file.	17a4b48	Ian Dillon <dillon@etsu.edu>	27 Sep 20
	ETSU Mods	6f72197	Ian Dillon <dillon@etsu.edu>	27 Sep 20
	Baseline 4.1.6	1d73603	Ian Dillon <dillon@etsu.edu>	27 Sep 20

Sorted by file status

Search

Commit: 6f72197c4531d8dbca83f26a53823f6c458b4175 [6f72197]
Parents: 1d73603849
Author: Ian Dillon <dillon@etsu.edu>
Date: Tuesday, September 27, 2016 1:27:23 PM
Committer: Ian Dillon

ETSU Mods

AuditBlocks.xsl
AuditSEP.xsl
AuditTranscript.xsl
ClassTranscript.xsl
DGW_Style.css
SD_ExpHeader.html
SD_HeaderFrame.html
common/logo.png

AuditSEP.xsl

Hunk 1 : Lines 17-31 — Reverse hunk

```
17   17
18   18
19   19        <!-- Variables available for customizing -->
20   20        <xsl:variable name="LabelProgressBar">      Degree Progress </xsl:variable>
21   21        <xsl:variable name="LabelStillNeeded">      Needed:         </xsl:variable>
22   22        <xsl:variable name="LabelAlertsReminders">  Alerts and Reminders </xsl:variable>
23    -       <xsl:variable name="LabelFallthrough">      Fallthrough Courses </xsl:variable>
     23    +  <!-- ETSU Localization
     24    +  <xsl:variable name="LabelFallthrough">      Electives </xsl:variable>-->
     25    +  <xsl:variable name="LabelFallthrough">      Electives Not Applied </xsl:variable>
24   26        <xsl:variable name="LabelInprogress">       In-progress </xsl:variable>
25   27        <xsl:variable name="LabelOTL">              Not Counted </xsl:variable>
26   28        <xsl:variable name="LabelInsufficient">     Insufficient </xsl:variable>
27   29        <xsl:variable name="LabelSplitCredits">     Split Credits </xsl:variable>
28   30        <xsl:variable name="LabelIncludedBlocks">   Blocks included in this block</xsl:vari
29   31        <xsl:variable name="LabelUnmetHeader">      Unmet conditions </xsl:variable>
```

Hunk 2 : Lines 138-152 — Reverse hunk

```
136  138        <!-- // School Header // -->
137  139        <!--<xsl:call-template name="tSchoolHeader"/>-->
138  140
139  141        <!-- // Student Header // -->
140  142        <xsl:if test="/Report/@rptShowStudentHeader='Y'">
141  143
142    -       <xsl:call-template name="tStudentHeader"/>
     144    +  <!-- ETSU Localization to change call
     145    +  <xsl:call-template name="tStudentHeader"/>-->
     146    +  <xsl:call-template name="tStudentHeader2"/>
143  147        </xsl:if>
144  148
145  149        <!-- // Progress Bar // -->
146  150        <xsl:if test="/Report/@rptShowProgressBar='Y'">
147  151        <xsl:call-template name="tProgressBar"/>
148  152        <br />
```

Other Stuff I Haven't Mentioned Yet

❖ TESS / other apps
- ❖ Properties File
- ❖ Header Image

❖ SSO/CAS

❖ Argos
- ❖ DGWP Grants

❖ Annual Cleanup

In: C:\Users\toccig\Documents
Document(s): 18

Search for: GPA
900 result(s)

- Degree Works Advanced Reporting Technical Guide 5.0.0.pdf
- Degree Works Banner Considerations Technical Guide 5.0.0.pdf
- Degree Works Banner Data Mapping for BIF Technical Guide 5.0.0.pdf
- Degree Works Bridge Interface Format Technical Handbook 5.0.0.pdf
- Degree Works Colleague Considerations Technical Guide 5.0.0.pdf
- Degree Works Colleague Data Mapping for BIF Technical Guide 5.0.0.pdf
- Degree Works Manifest 5.0.0.pdf
- Degree Works Prerequisite Checking Technical Guide 5.0.0.pdf
- Degree Works Problem Resolutions 5.0.0.pdf
- Degree Works Scribe Language User Guide 5.0.0.pdf
- Degree Works Shepherd Settings Technical Guide 5.0.0.pdf
- Degree Works Student Education Planner Administration Guide 5.0.0.pdf
- Degree Works Surecode UCX Tables Technical Guide 5.0.0.pdf
- Degree Works Technical Guide 5.0.0.pdf
  - GPA Calculations ....
  - GPA can be identified and the GPA can be calculated correctly.
  - GPA can be calculated correctly. The rules for applying credits from
  - GPA for repeated classes are site-defined within a set of repeat
  - GPA calculated by Degree Works may be different from that calculated
  - GPA calculations via the NOTGPA reserved word.
  - NOTGPA reserved word.
  - GPA calculators. - Student Educational Planner
  - GPA breakdown for all students? How many students have taken
  - GPA falls within the selected range? Who needs to take
  - MinGPA 2.0 MaxTransfer 30 Credits ;
  - GPA or maximum number of transfer courses. Each block header
  - GPA Grade Point Average, sum of grade points divided by total
  - GPA is calculated to 3 decimal places, with a maximum of

Summary

❖ Use Version Control

❖ Don't modify image dimensions or names

❖ Export your Surecode changes to files -> Version Control

❖ Do as little string manipulation in XSLT as possible

❖ UCX Settings > Code Changes

❖ Firefox: View Frame Source

❖ CI/CD > Local Environment

❖ Search All Documents at Once

Whats Next?

❖ Version 5
- ❖ RabbitMQ
- ❖ Composer
- ❖ TESS: FB Login
- ❖ Deprecated:
    - ❖ SSB Auth
    - ❖ PC Tools

Object/Process	
Audit	16
Banner	4
CPA	1
Documentation	13
Install	2
Planner	7
Scribe	1
Security	1
Shepentry	1
System	8
Transfer Equivalency	5
Transfer Finder	2
Transit	3
Web	6
TOTAL:	70

Questions?

- ❖ Session# 359
  - ❖ Replacing Pro*C in Jobsub With **Ruby**
  - ❖ Wednesday @ 10:00 AM - 11:00 AM by Ian Dillon
- ❖ Session# 703
  - ❖ Avoiding **DegreeWorks** Localization Pitfalls: Programming Practices
  - ❖ Wednesday @ 11:15am - 12:15pm by Gabriel Tocci
- ❖ Session# 352
  - ❖ Git Together: Collaborative Coding and Source Code Management via Git and **GitLab**
  - ❖ Thursday @ 11:15am - 12:15pm by Gabriel Tocci
- ❖ Session# 358
  - ❖ Running Ellucian Middleware in **Docker**
  - ❖ Thursday @ 1:30pm - 2:30pm by Ian Dillon
- ❖ Session# 357
  - ❖ Building Declarative Cloud Infrastructure with **Terraform**
  - ❖ Thursday @ 3:00pm – 4:00pm by Ian Dillon

Resources

❖ Local Dev Environment
  ❖ https://ellucian.force.com/clients/articles/FAQ/How-to-use-local-testing-to-assist-with-Degree-Works-web-file-localizations
❖ DevOps
  ❖ https://ellucian.force.com/clients/articles/FAQ/415-Dashboard-reintegration
  ❖ https://docs.gitlab.com/ce/ci/yaml/README.html
❖ www.gabrieltocci.com/slides