Building Workflow Apps Through the Web

Nathan Van Gheem -- Wildcard Corp.

T. Kim Nguyen -- U. of Wisconsin Oshkosh

What we'll cover

- What is a workflow app, why bother, and why use Plone

- We have several production workflow apps at UW Oshkosh; many more to come in our campus intranet

- Two (and a half) Plone products that let you build workflow apps easily

- Walkthrough building a sample workflow app

- Future plans

What is a workflow app?

- a content type (or form) combined with a workflow

- workflow: states and transitions (think of a map, and directional paths between stations)

- transition guards and actions

- roles, permissions, groups

| view | edit | properties | sharing |

actions ▾ | add to folder ▾ | state: private ▾

Edit OIE Student Application

[default] [Addresses] [Demographics] [Passport] [Additional Questions] [Medical] [Medical II] [Medical III]
[Preferences] [Emergency Contacts] [Education] [Transportation] [Orientation] [Courses] [Financial Aid]
[Accommodation Preferences] [Expectations] [Verification]

Application Title
optional
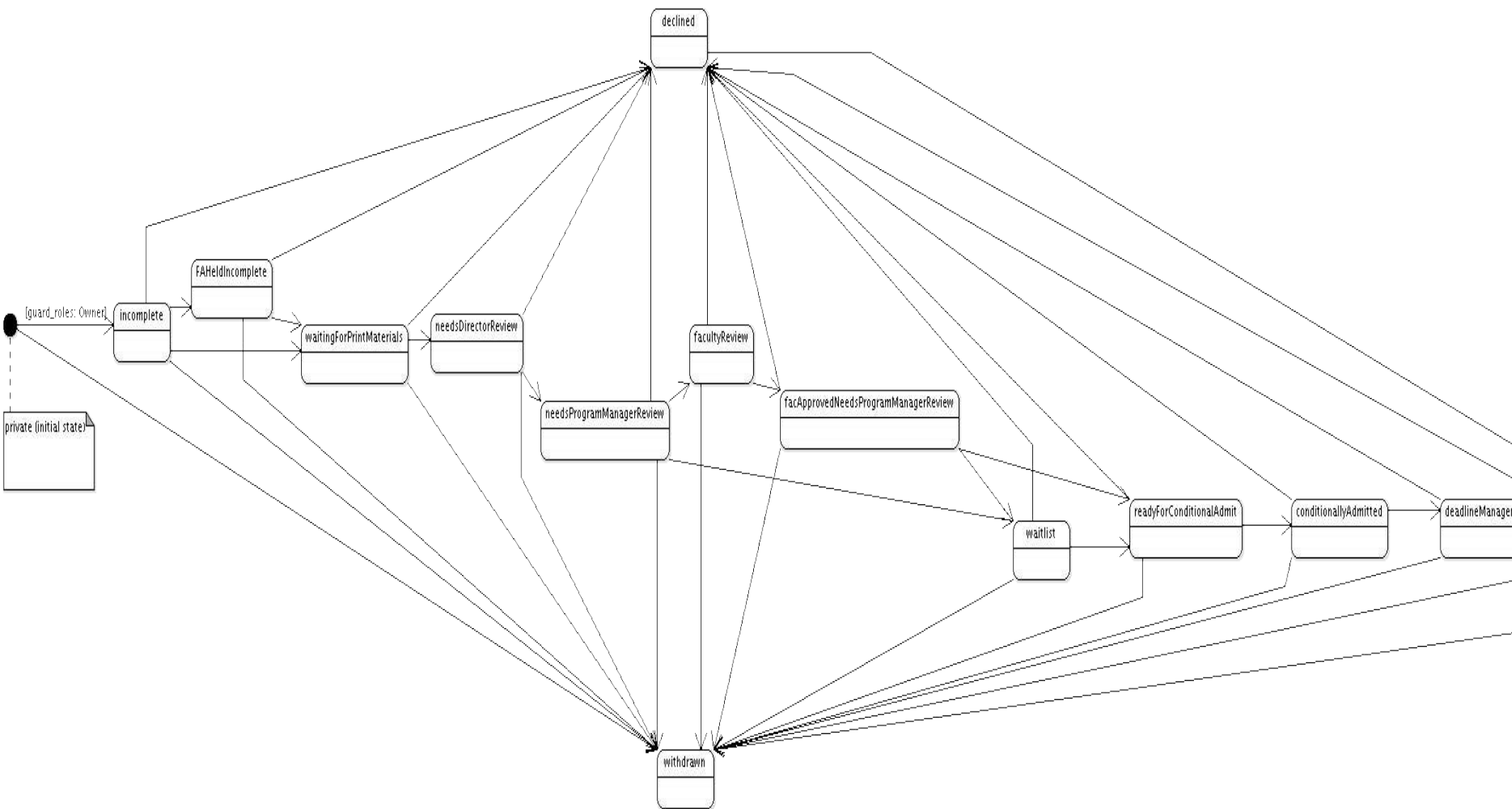
UW Oshkosh Student ID
(if applicable)

First Name ■

Middle Name

Last Name ■

Email Address ■
UW Oshkosh students must use a @uwosh.edu email address. Acceptable email addresses for other applicants include school and company addresses.

nguyen@uwosh.edu

"Study Abroad" workflow

Why use a workflow app?

- Stop using & schlepping paper; accelerate business

- Plone unique among CMS's in having this ("because it's there")

- Online forms are great until you dig a bit deeper...

- Time and cost efficiencies of purely online processes
  - Office of International Education saved 0.5 staff person's time; immediate access from anywhere; reduced filing space needs; fewer copies; can double the number of supported study abroad programs

Production workflow apps at UW Oshkosh

- International Education Study Abroad (http://app.oie.uwosh. edu)

- Parasite sample ordering and reporting (http://www. filariasiscenter.org)

- Research grant submission & evaluation (http://www.uwosh. edu/[u]gradgrants)

- Project Success (http://www.uwosh.edu/success)

...and several others...

🌐 *Oshkosh*

OFFICE OF
INTERNATIONAL EDUCATION

👤 T. Kim Nguyen   my folder   preferences   undo   log out

unsubmitted apps

you are here: home → members → nguyen → oiestuapp_nguyen1305688191

📄 oiestuapp_nguyen1305688191
              2011-05-17

| view | edit | properties | sharing |

actions ▼ | add to folder ▼ | state: private ▼

All unsubmitted apps...

ℹ️ **Your application is not submitted yet. You must click the "Submit app" button in the "Application State" area to submit to the OIE staff**

navigation

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📁 Members

📁 nguyen

📄

◄	May 2011	►

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--- Basic Information ---

UW Oshkosh Student ID :

Email Address : ✉️nguyen@uwosh.edu

Program Name :

Program Semester & Year : None

[Expand all sections] [Collapse all sections]

--- Comments & History ---

⊞ **Add Comment**

⊞ **History**

⊞ **Addresses**

⊞ **Demographics**

--- Application State ---

Your application state is: private

The Office of International Education does not currently have access to your application. You MUST submit your application using the purple "SUBMIT APP" button below.

See process overview

Edit application	Submit App
Withdraw App	

Search Site   🔍 Search

☐ only in current section

NIAID / NIH
Filariasis Research
Reagent Resource Center (FR3)

Log in

NAVIGATION

Welcome from the Director of the FR3

Parasite Resources

Protocols

New Requisition Form

Filarial Research Materials (Parasite Division) Requisition Form

Current Parasite Resources Inventory

Molecular Resources

Filarial genomics and bioinformatics

Annual FR3 Minicourse

Filaria Pictures and Videos

Helpful Tips for Filariasis Researchers

News

Events

Links

Contact

Filarial Research Materials (Parasite Division) Requisition Form

When ordering parasites, please use the boxes to indicate the NUMBER of parasites you want in your order.

Recipient First Name (given name) ■

[   ]

Recipient Last Name (surname) ■

[   ]

Principal Investigator First Name ■

[   ]

Principal Investigator Last Name ■

[   ]

Your E-Mail Address ■

[   ]

Phone Number (International)

[   ]

Phone Number (U.S.)

[   ]

UNIVERSITY OF
WISCONSIN
OSHKOSH

Search Site   SEARCH
search entire campus

Graduate Student – Faculty Collaborative Grants Site

T. Kim Nguyen   Log out

Home > [···]

Add Proposal

Default ■ | Metadata

STEP 1: Fill out the information below and click on the "Save" button at the bottom. Step 2: will be to upload the proposal. Step 3: will be to submit the proposal. Additional details and help are available at right.

Title ■

Student Proposer 1 Name ■

Proposer 1 Student ID # ■

Student Proposer 1 Email ■

Student Proposer 1 Mailing Address(Official award/deny letters will be sent to this address.)
Address Line 1 ■

Address Line 2

City ■

HELP AND INSTRUCTIONS FOR...
Proposers
Reviewers
Panelists

above links will open in new window.

HELP AND INSTRUCTIONS FOR
Grants Director Tools
the Director

Add Blue Sheet

Student Fields:

Full Name ■

Email

Test Date and Time ■
Select a date that is at least 3 days ahead of the current date.

[-- ▼] / [-- ▼] / [-- ▼] 📅 [-- ▼] : [-- ▼] [-- ▼]

Course No. - Section - Course Name - Professor Name ■

[▼]

Accommodations Requested ■
☐ Calculator
☐ Computer
☐ Extra Time
☐ Human Reader
☐ Notes
☐ Screen Reader
☐ Tape or CD Player

Student Comments

Faculty Fields:

☐ **Faculty member will drop off test**
A faculty member will drop off the test at the project success office themselves.

Test Pickup Date and Time

[-- ▼] / [-- ▼] / [-- ▼] 📅 [-- ▼] : [-- ▼] [-- ▼]

Why build workflow apps in Plone?

- Users already familiar with Plone concepts and user interface

- Plone's workflow engine is a brilliant feature hidden in plain sight!

- Natural for online forms to be co-located with "standard" web content (pages, folders, images, files)

The brutish past

- To build "persistent forms" (aka custom content types): ArchGenXML, Archetypes, Python, paster, HTML, TAL, ZCML

- To create a workflow: ZMI portal_workflows, or Python

- Painstaking. Slow. Painful. Hard to debug. Clients repeatedly ask for changes to the workflow and to the form.

- Example: OIE workflow app design went through 8-10 revisions.

The way forward

- Through the web! No coding required for basic workflow apps*

- Let Plone power users, domain experts, and business analysts do the analysis and design work

- It's the only way to scale: making the technology accessible to users, not coders

Plone products we'll talk about

- D2C ("Data to Content") (uwosh.pfg.d2c)

- Workflow Manager (plone.app.workflowmanager)

- briefly: North* generator (uwosh.northstar)

D2C (uwosh.pfg.d2c)

- Use Plone's natural prototyping tool:
  - PloneFormGen, the Swiss Army/Wenger knife

- By adding a special D2C save data adapter, each form submitted becomes a fully-fledged Plone object, with complete Dublin Core metadata, state, searchability

Add Save Data to Content Adapter

A form action adapter that will save form input data to a content type.

Default ■   Overrides

Title ■

D2C

☑ **Avoid Security Checks**

Avoid checking if the user has permission to create the content data. You will almost always want this checked; otherwise, anonymous users will most likely not be able to submit your forms.

Title Field

Select a field to be used as the title of the entries. You will have to reindex previous form results for you to notice most changes. You can edit each form result to force reindexing.

◉ **replyto**

○ **topic**

○ **comments**

Saved entry content type

Portal type to use for the saved data. Leave as default if you're unsure of what this does.If you select a plone standard type, you must make sure the field names are the same in order for the data to store correctly.

◉ **Save Data to Content Entry**

(Save) (Cancel)

Workflow Manager (plone.app.workflowmanager)

- an AJAXy GUI for creating, editing, and assigning workflows

- create states and transitions

- assign transitions between states

- set transition actions, such as email notifications

- control authorization with permissions and roles

Workflow Manager

You are currently working on the "Simple Publication Workflow Clone" workflow.

Select or create a new workflow

| **States** | Transitions | (Save) | (Add state) | (Add transition) | (Sanity check) | (Assign) | (Delete) | ☐ **Advanced mode** |

↓ **Pending review** → Member retracts submission , Reviewer publishes content , Reviewer send content back for re-drafting (Delete)

↓ • **Private** → Member submits content for publication , Reviewer publishes content (Delete)

↓ **Published** → Member retracts submission , Reviewer send content back for re-drafting (Delete)

Walkthrough of a sample workflow app

- travel expense form: name, date of travel, dollar amount

- workflow states: submitted, approved, denied

- transitions:
  - approve (submitted -> approved)
  - deny (submitted -> denied)

Basics of building

1. Create form
2. Clone a content type to use to house the data
3. Create workflow
4. Assign workflow to cloned type
5. Add D2C form adapter
6. test type
7. show collection using type and workflow

Step 1: Build the Form (with PloneFormGen)

Step 2: Clone the portal_type to make a "Travel Expense Form" type

Step 3: Build the Workflow (with Workflow Manager)

Step 4: Assign the workflow to the type

- with Workflow Manager GUI, or with Site Setup -> Types
  - the workflow will be applied globally

- or can create & assign a placeful workflow policy
  - the workflow will be applied locally

Step 5: Add the D2C Saved Data Adapter

- When adding the D2C, specify that it should use the Travel Expense Form type

Step 6: Submit a travel expense form, show the resulting object, transition it

- D2C does validations at submit and for edits!

Step 7: Show collection with results from form submissions

Step 8: Profit!

Embrace and Extend: What Else Can You Do?

- Q: What if you need to build more custom logic into the form or the workflow? (e.g. - If you need more control over the forms, what's visible or editable depending on state or role, custom logic, custom transition actions)

- A: Use North* product's Generator to generate the file system product ("tarball")

- Hand it off to your programmers

Future Schlock - where we'd like to go with this:

- more UI help for creating & adding a workflow policy "here" without having to bounce around Site Setup or ZMI; adding metadata & indexes to portal_catalog

- graphical front end - something like ArchGenXML except not one-way

- workflow queue management: alerts, manual overrides, manager station

- At UW Oshkosh: selection of two wide-audience workflow apps to implement; measure outcomes; demonstrate value

Links to product pages

http://plone.org/products/ploneformgen

http://pypi.python.org/pypi/plone.app.workflow/

http://plone.org/products/uwosh.pfg.d2c

http://plone.org/products/uwosh.northstar

Questions?

- Suggestions for product features or directions?

- Nathan Van Gheem (vangheem@gmail.com)
- T. Kim Nguyen (nguyen@uwosh.edu)

- http://www.uwosh.edu/plone