



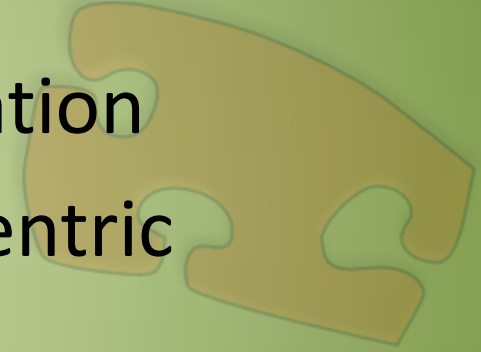
SecondNature : An attempt at Merging Openalea and Lpy, and more?

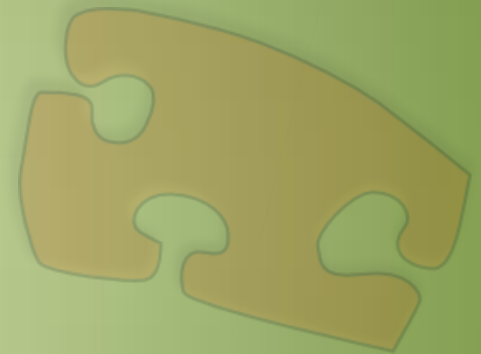
Daniel Barbeau, 28/02/2011



We want to merge OA and LPy

- To have one unique and clearly identifiable « VirtualPlants platform ».
- To reduce coding effort fragmentation
- Not dataflow-centric or Lsystem centric anymore.
 - Lsystem, visual programming, data processing, data analysis, **all in the same place**





WE WANT A POLYMORPHIC APPLICATION



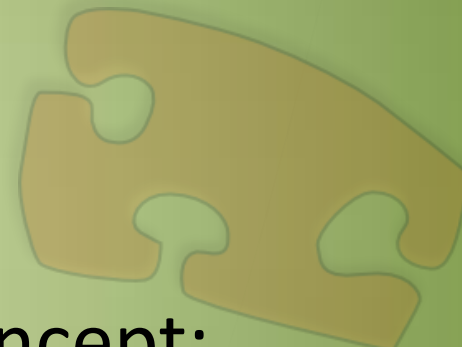
A quick overview of other polymorphic apps

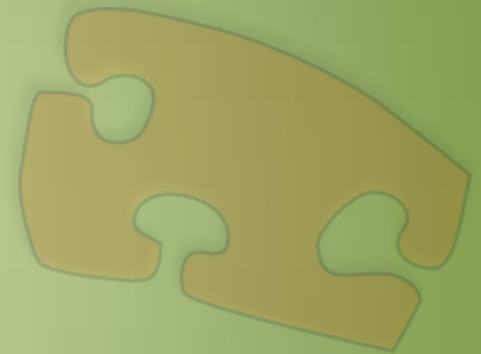
- Eclipse
 - Demo
 - Workspace, projects, « perspectives », widget chooser, extensible (OSGi)
- Emacs
 - Demo
 - Optional Session, « splittable layout », mode chooser, extensible (Emacs Modes)
- Blender
 - Demo
 - Blend File DataBase, « splittable layout », editor choose, extensible (RNA subclassing)
- MedInria 2.0
 - Demo? Maybe, maybe not...
 - « Three pane layout with reserved task-specific space », task chooser, extensible (DTK)



Common key features

- Common polymorphic UI approach:
 - A splittable UI
 - Task specific layouts
 - Customizable layouts
- Top-level serializable container concept:
 - Workspace, project, blend file
- An underlying extension infrastructure
 - OSGi (Equinox), DTK...





Step 1

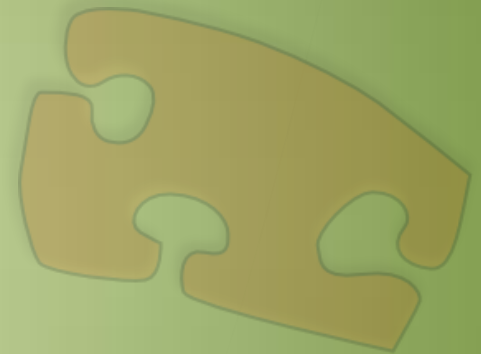
A POLYMORPHIC UI



The Blender approach

- Splittable UI concepts (`openalea.visualea.splitterui`):
 - Layout
 - Spaces
 - Applets
- SecondNature (`openalea.visualea.secondnature`) :
 - Demo (layouts, applets, new documents, open documents)
- We have a polymorphic UI





Step 2

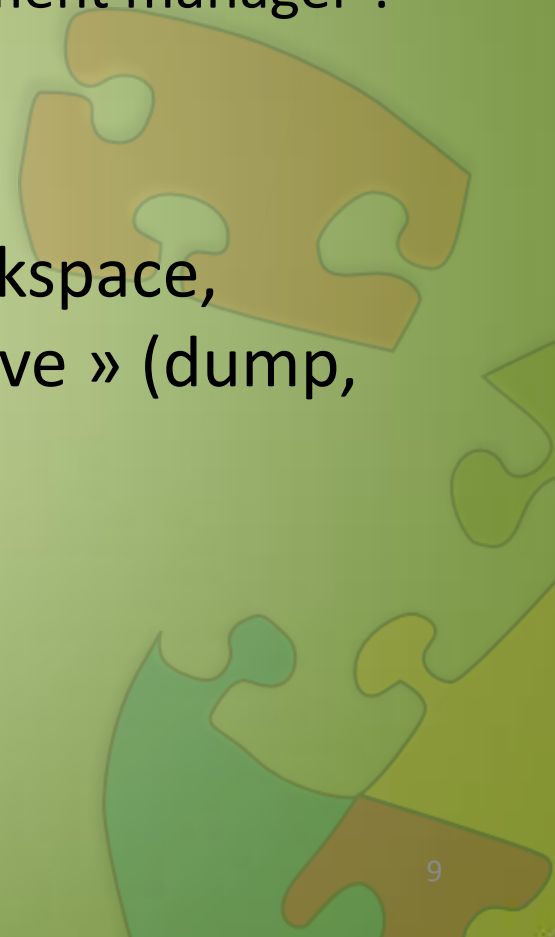
THAT BRINGS IN COMMUNICATION PROBLEMS



Problems

Intra-session communication

- *Eg. use a curve from an editor in a Lsystem) ?*
 - A software bus ? A datapool ? A document manager ?
 - With explicit dependencies ?
 - How is it done in Blender ?
- **Top level serialisable concept** : Workspace, project, blend file : « openalea archive » (dump, file, db, whatever...) - *.oarch
- Open question!

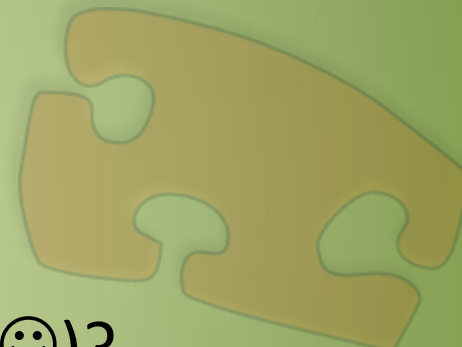




Problems

Inter-session communication

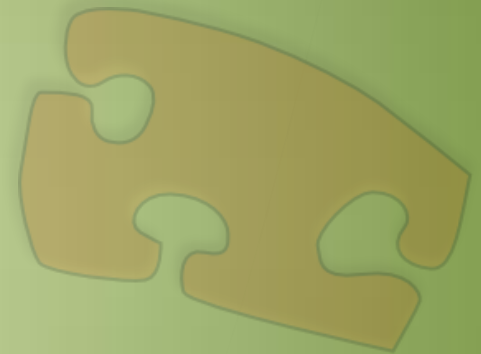
- *Eg: Use resources from `reconstruction.oarch` in `analysis.oarch`?*
 - Need to refer to `reconstruction.oarch`.
 - Need to refer to resource internal to `reconstruction.oarch`
- How is it done in, let's say, Blender (☺)?
 - Database structure ☺
 - Link / Append ☺
 - File path reference : fragile ☹
 - PackageManager can solve this ☺





Step 3

AND EXTENSABILITY ?





An infrastructure

- Eclipse, Emacs, Blender, MedInria:
 - Rely on a more or less specified extension infr.
 - OSGi : probably the most specified one
 - Too specified?
- What are the needs ?
 - Add applets, add layouts ... ?
 - Code example.
- Can we use an existing inf?
 - Maybe Envisage ? (OSGi for Python)





Questions ?

