KinOath to Frinex

From KinOath desktop to Web, Mobile and crowdsourcing data
Introduction

• KinOath is desktop kinship software which supports generating diagrams from kintype strings, kinterm lists or from a database.

• Frinex is an experiment framework intended to streamline the creation of web and mobile experiment applications.

• Frinex has features including those of FieldKit, SynQuiz, LingQuest, DOBES Annotator, while also allowing for surveys and reaction time experiments.
KinOath Kinship Archiver

Potential features for Frinex
from KinOath

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KinOath has been divided into separate libraries.
- desktop (The desktop application)
- rest (A web service that generates diagrams)
- batik-renderer (A desktop example)
- diagram (Common code for creating diagrams)
- graph-sorter (The default diagram sorting algorithm)
- graph-storage (The BaseX database implementation)
- kin-type-string-parser (Generates graphs from KTSs)
- kinoath-help (The desktop help system)
- localisation (The desktop translations)
- core (common code to all the above)
Potential Frinex features from KinOath

• The KinOath diagram library is intended to be available to other applications.
• Hence is possible to make use of this library to produce KinOath diagrams in Frinex.
• This process requires cross compiling the KinOath diagram library into HTML/Javascript via the GWT framework.
Frinex
Framework for Interactive Experiments
Frinex Goals

- Provide software for interactive scientific experiments
- Separate the experiment design from the software implementation.
- Allow reuse across experiments, eg stimulus or activities or metadata.
- Prevent the need for continuous redevelopment of the same or similar experiment software.
- Make the individual experiment applications available to the researchers so that re runs and post publication experiment validation are possible.
- Provide experiments on mobile devices and via the web.
- Modularise development so that components can be added / changed / replaced.
Frinex Workflow Overview

1. Define Experiment
2. Publish Experiment
3. Experiment Results

- web
- iOS
- Android
Frinex Templates

- The current template is based on SynQuiz ¹ and LingQuest ², which are iOS and Android applications developed in the Language In Interaction ³ project. These apps are already in the various app stores.

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Frinex Templates

- The current template produces:
  - Web experiments
  - iOS experiments
  - Android experiments
  - Can produce other platforms, facebook, desktop, wince …

- Other templates can be developed as needed:
  - Native iOS
  - Native Android
  - Unity3D?
  - Minecraft?
  - Chrome apps?
Example Frinex Applications

• **FieldKit (mobile only)**
  – Display of stimuli while recording audio with time aligned annotations of the participants interaction.

• **Dobes Annotator**
  – Allows the creation of time aligned annotations to a given video.

• **Web experiments**
  – Display of audio, video and image stimuli
  – Collecting the participant responses and interaction times
Example Frinex Applications

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System Overview

1) Experiment designer interface
   • Configure: screens, metadata, stimulus...

2) Experiment application templates
   • Templates can be created in different technologies
   • This is the code that becomes the experiment app

3) Compilation process

4) Compiled experiment
   • Self contained application, mobile / web

5) Experiment results administrator
   • Viewing and downloading experiment results
   • Managing participants
Submodules

• Submodules can exist within a template when the technologies are compatible:
  • Elements of the DOBES annotator prototype 4 have been included in the system and could be used to collect and display time aligned annotations
  • Elements of KinOath 5 such as kintype diagrams could be included to allow for the collection and annotation of kinship data
  • The WAV recorder and CSV writer from FieldKit 6 has already been included as a submodule
Experiment Results

• Web based results (via admin system)
  – Download zip file of CSV output
  – Direct query with JSON output, eg via R (planned)

• Offline SD card (mobile apps only)
  – CSV time aligned output
  – Audio/video recordings
  – Post processing in ELAN
Potential Frinex features from KinOath

The following slides the features of KinOath that could be integrated into Frinex
Potential Frinex features from KinOath

- The diagrams produced in scalable vector graphics (SVG)
Potential Frinex features from KinOath

• Generating diagrams from kin type strings.

E ego, Em male ego, Ef female ego
M mother, F father, P parent
H husband, W wife
D daughter, S son, C child
Z sister, B brother
Potential Frinex features from KinOath

- Adding of individuals/events/things directly on the diagram.
- Adding relations by dragging the blue dots on the selection.
Potential Frinex features from KinOath

- Visually interacting with the entities on the diagram.

[Select individuals by dragging a rectangle over them]
Potential Frinex features from KinOath

KinType String Queries to search the data.

- Each condition can use:
  - = contains
  - == exact match
  - > greater than
  - < less than

E[DateOfBirth<0850][INDI.TITL=King of France]CC

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Potential Frinex features from KinOath

• Kin Term Diagrams

Japanese Kin Terms

Data sourced from http://ja.wikipedia.org/wiki/親族 and subsequent links

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Potential Frinexex features from KinOath

• Custom relation lines and custom symbols
References

• https://www.languageininteraction.nl/synquiz.html
• https://www.languageininteraction.nl/lingquest.html
• https://www.languageininteraction.nl/
• The DOBES annotator prototype was developed by the TLA but not published
• https://github.com/KinshipSoftware/KinOathKinshipArchiver
• FieldKit was developed by the TG but not published