KinOath to Frinex

From KinOath desktop to Web, Mobile and crowdsourcing data

Kinsources Conference Paris,
8th July, 2016

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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.

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KinOath Kinship Archiver

Potential features for Frinex from KinOath

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KinOath Diagram Library

- 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)

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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.

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Frinex
Framework for Interactive Experiments

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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.

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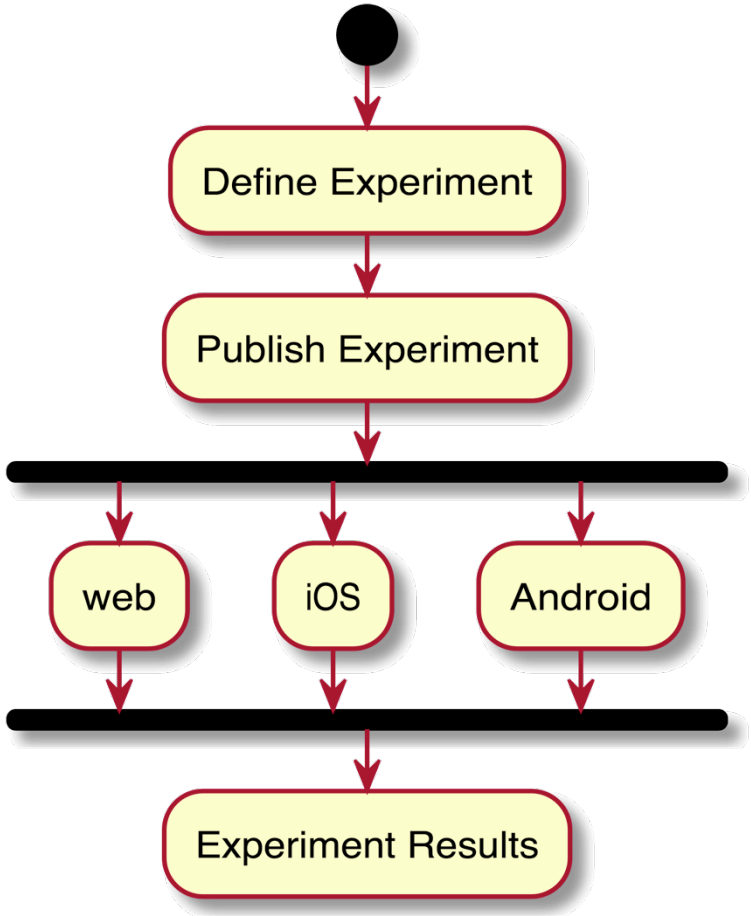
Frinex Workflow Overview



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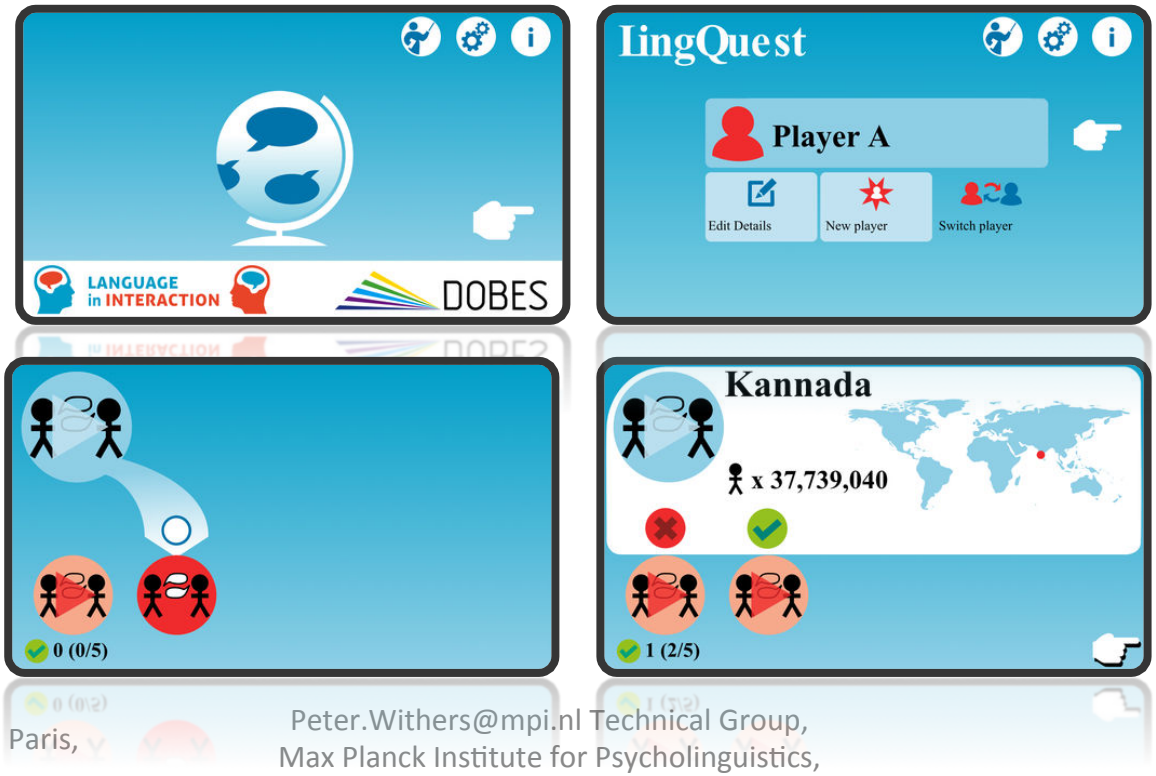
Frinex Templates

- 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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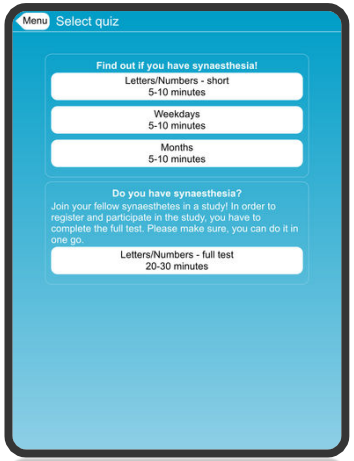
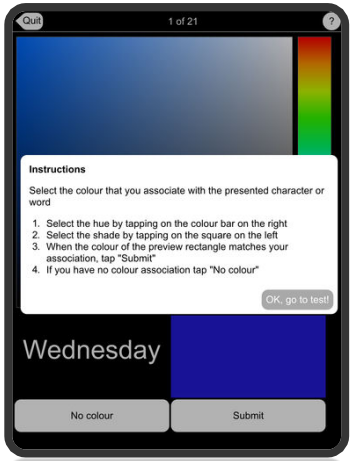
Frinex Templates

- 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?





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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

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Example Frinex Applications

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System Overview

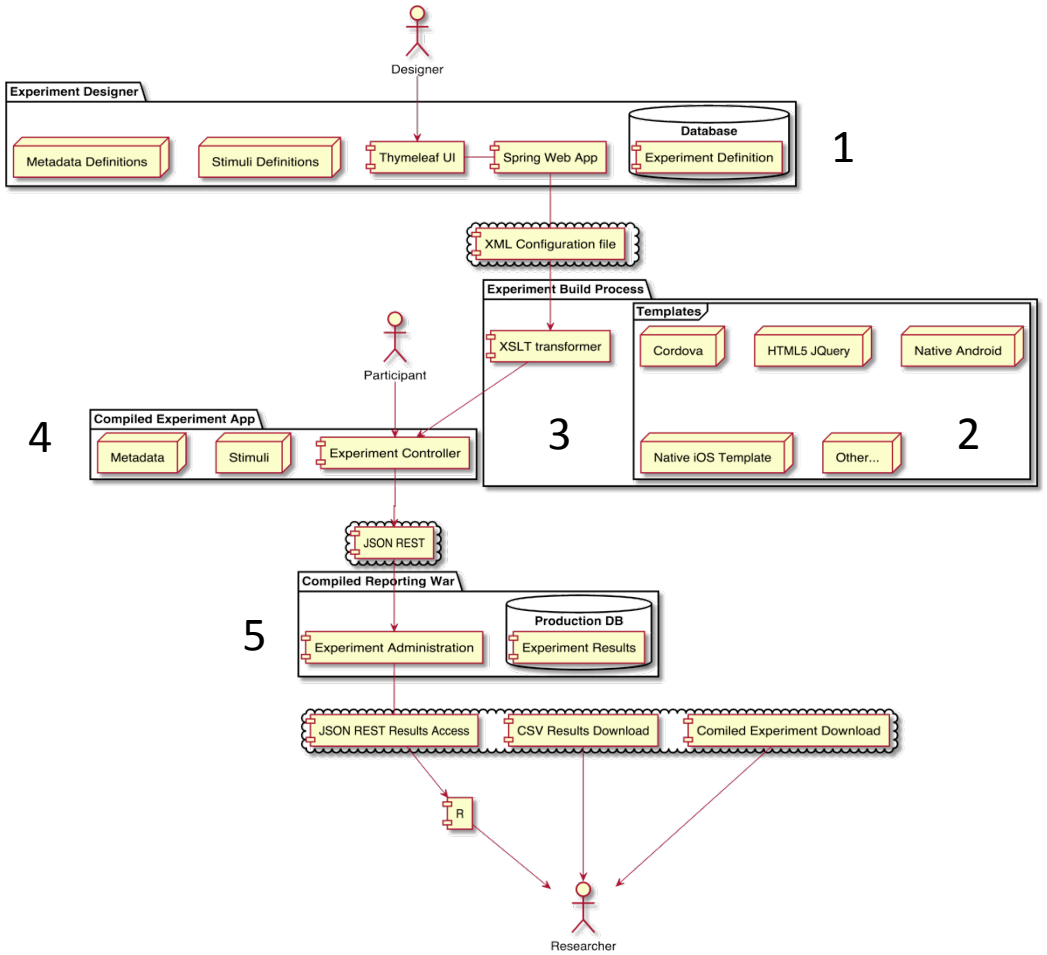
1) Experiment designer interface
- Configure: screens, metadata, stimulus…

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



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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

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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

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Potential Frinex features from KinOath

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

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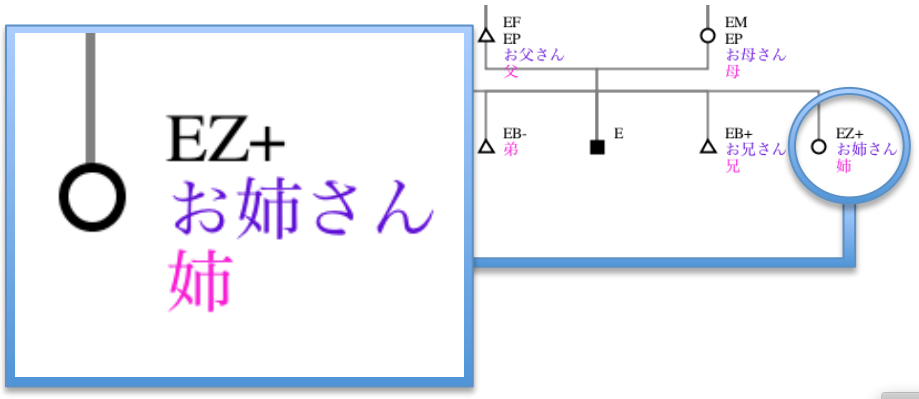
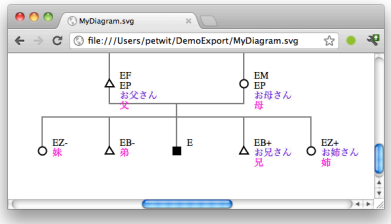
Potential Frinex features from KinOath

- The diagrams produced in scalable vector graphics (SVG)





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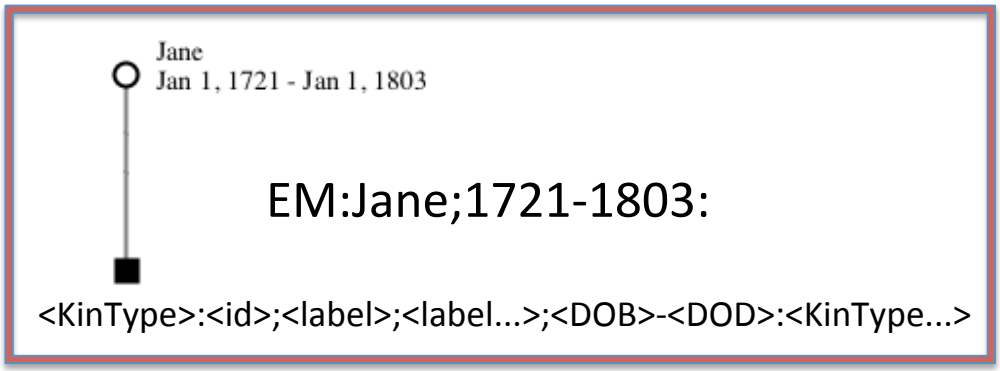
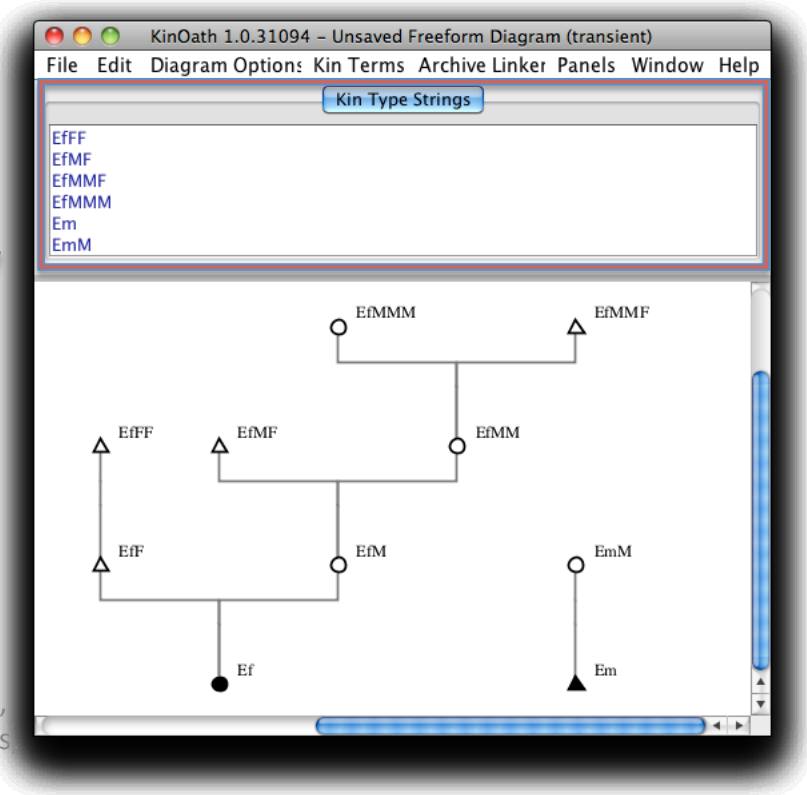
Potential Frinex features from KinOath

- 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



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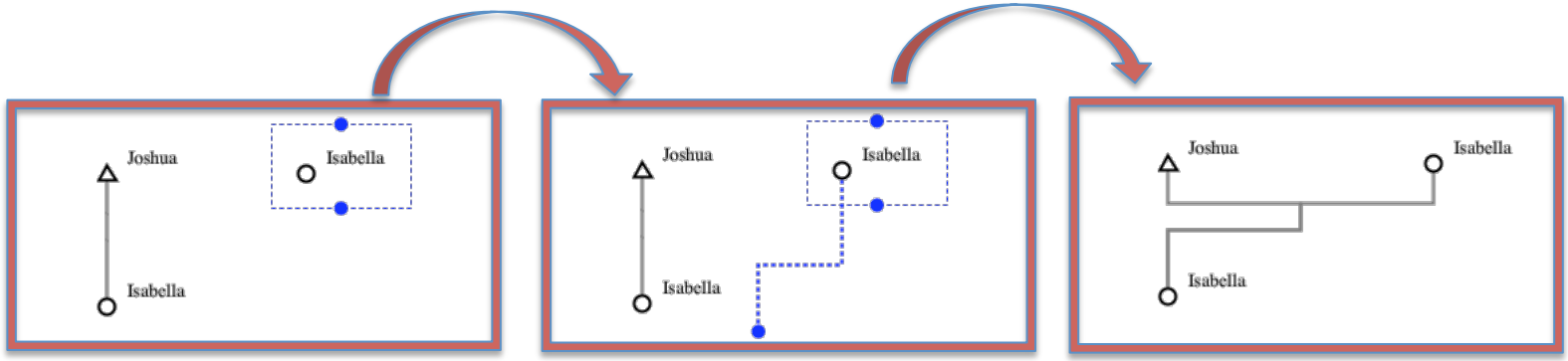
Potential Frinex features from KinOath

- Adding of individuals/events/things directly on the diagram.
- Adding relations by dragging the blue dots on the selection.



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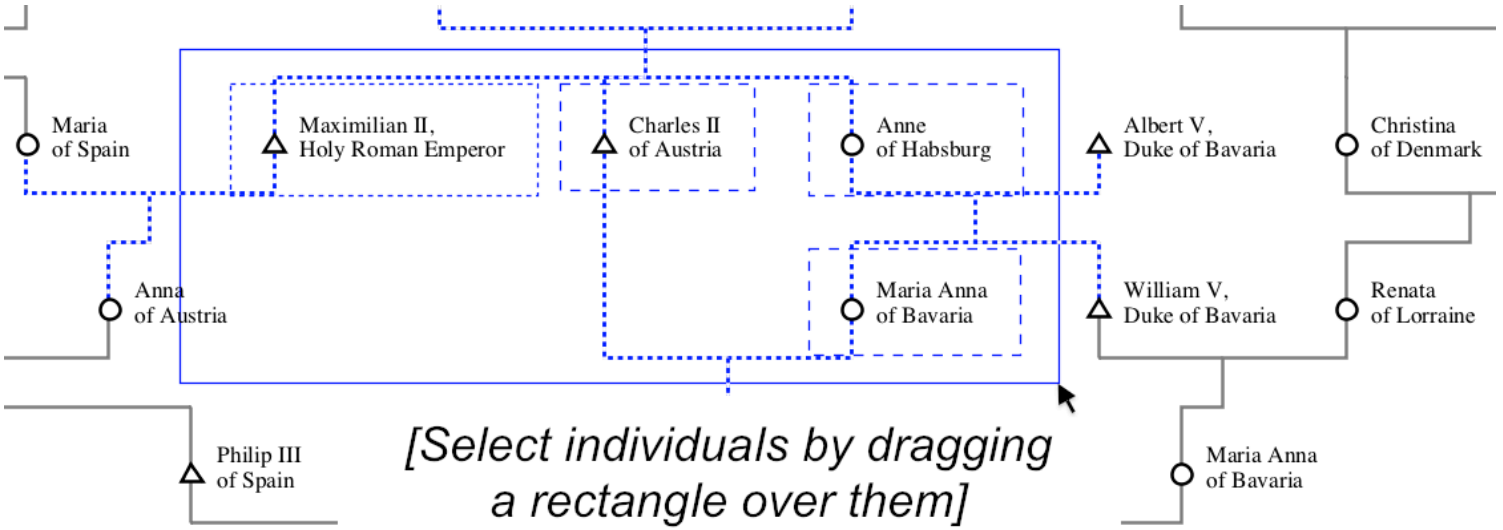
Potential Frinex features from KinOath

- Visually interacting with the entities on the diagram.



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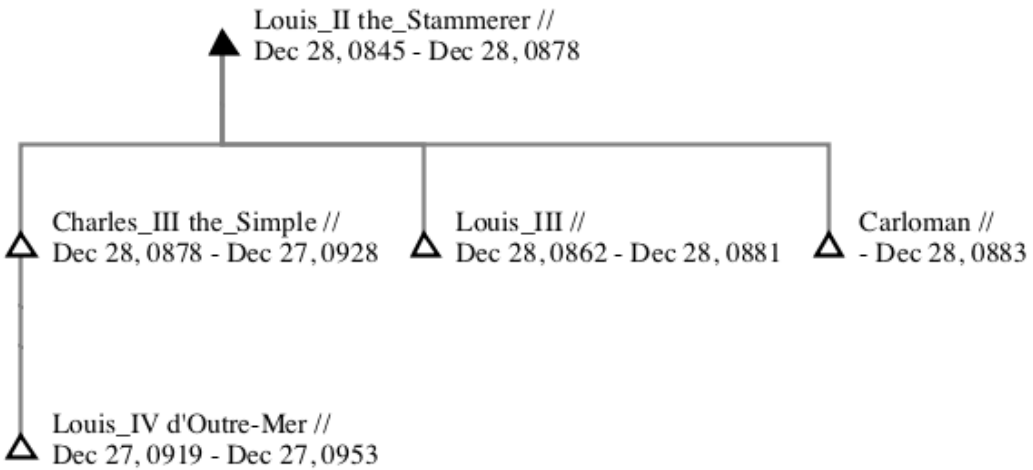
Potential Frinex features from KinOath

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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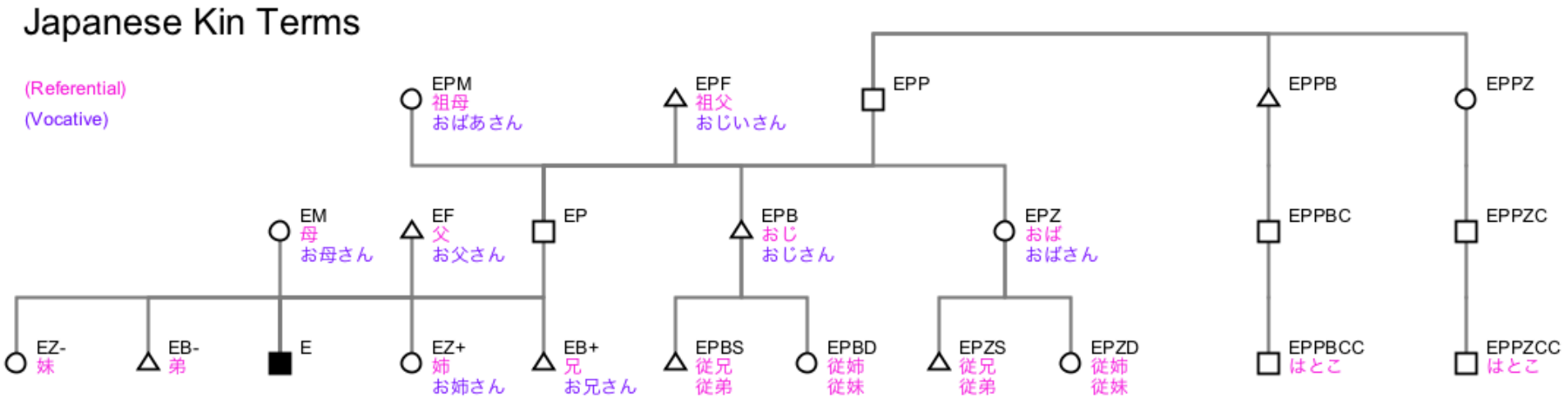
Potential Frinex features from KinOath

- Kin Term Diagrams



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

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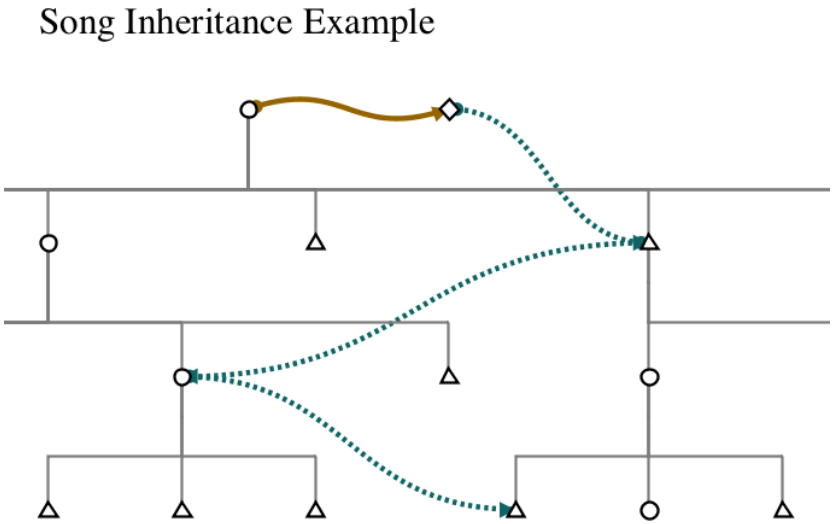
Potential Frinex features from KinOath

- Custom relation lines and custom symbols

Custom Name	...	Relation Type	Line Colour	Line Width	Line/Dash	Curve Line Orientation
SongAuthorship		directedout (directedin)		4	0	horizontal
SongInheritance		directedout (directedin)		4	3	horizontal



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References

- https://www.languageininteraction.nl/synquiz.html [1]
- https://www.languageininteraction.nl/lingquest.html [2]
- https://www.languageininteraction.nl/ [3]
- The DOBES annotator prototype was developed by the TLA but not published [4]
- https://github.com/KinshipSoftware/KinOathKinshipArchiver [5]
- FieldKit was developed by the TG but not published [6]

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