The Semantic Desktop for Application Developers

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This talk is intended for:

- KDE Application Developers
- Not Nepomuk Experts
- The Curious

This talk will cover:

1) What can applications use Nepomuk for?

2) Why should they use Nepomuk?

3) How should they use Nepomuk?

4) A case study: KDE-Telepathy.

What is Nepomuk?

A place where applications can share information about things with each other.

1) What can applications use Nepomuk for?

Example: Photo Manager

- Tags
- Albums
- People in pictures
- Location of pictures

Example: Address Book

- Last call/chat times
- Recent messages
- Presence
- Pictures of contacts
- Interaction history

2) Why should applications use Nepomuk?

1) Digikam

Look for photo of friend

2) KAddressBook

Find friend's email

3) KMail

Email photo as attachment

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Look for photo of friend

Send photo to friend

Solution Requirements

- Common API for data interchange
- Must not be application-specific
- Must be a part of the environment in which applications operate

3) How should applications use Nepomuk?

Ontologies

- Describe the data so that any application can understand it
- Effectively an API for the data
- Classes, properties, relations etc

Ontologies: Example

```
nco:PersonContact
      a        rdfs:Class ;
      rdfs:comment "A Contact that denotes a Person. A pe
      rdfs:label "PersonContact" ;
      rdfs:subClassOf nco:Contact .

nco:IMAccount
      a        rdfs:Class ;
      rdfs:comment "An account in an Instant Messaging sy
      rdfs:label "IMAccount" ;
      rdfs:subClassOf nco:ContactMedium .

nco:PostalAddress
      a        rdfs:Class ;
      rdfs:comment "A postal address. A class aggregating
      rdfs:label "PostalAddress" ;
      rdfs:subClassOf nco:ContactMedium .
```

A Contact (much like a vcard)

An Instant Messaging account of a contact

A postal address of a contact

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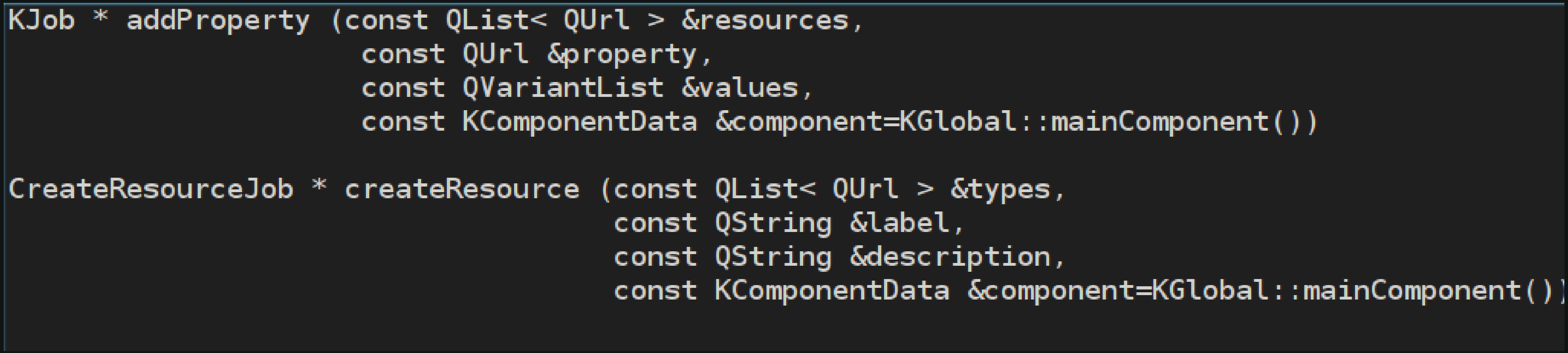
PIMO Ontology

- Two main sets of ontologies:
  - Nepomuk ontologies represent implementation-level constructs
  - PIMO ontology represents real-life entities

API



```
KJob * addProperty (const QList< QUrl > &resources,
                     const QUrl &property,
                     const QVariantList &values,
                     const KComponentData &component=KGlobal::mainComponent())

CreateResourceJob * createResource (const QList< QUrl > &types,
                                    const QString &label,
                                    const QString &description,
                                    const KComponentData &component=KGlobal::mainComponent())
```

- Asynchronous
- KJob based

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API

- Query Service
  - Allows you to query for specific items
  - Notifies you when new items match your query
- Resource Watcher
  - Notifies you when properties change

4) Case Study: KDE-Telepathy

What is KDE-Telepathy?

- Instant Messaging/VoIP for KDE
- Based on Telepathy Framework
- DBus based architecture
- Modular components
- Supports collaborative features (tubes)

What information is there?

- Contacts (name, avatar, etc)
- Presence (ours and our contacts')
- File-Transfer – who sent it?
- Details of collaborators and what they did

Where is it useful?

- System wide MetaContacts
- Address Book/PIM Integration (presence)
- Show who sent us a file in Dolphin
- Who worked on this document?

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Conclusion

- If your application has interesting data on just about anything, put it in Nepomuk
- Make use of data from Nepomuk to enrich your application user experience
- The more applications that use Nepomuk, the more we all benefit from it.

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Conclusion

If you want to do stuff with Nepomuk, but you're not sure how, or you find that nothing works properly, talk to the Nepomuk developers, or even *invite them to your sprints*.

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Questions?

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Links

- **Shared-Desktop-Ontologies Documentation**

  http://oscaf.sourceforge.net

- **Nepomuk DataManagement API**

  http://api.kde.org/4.x-api/kdebase-runtime-apidocs/nepomuk/html/namespaceNepomuk.html

- **Resource Watcher API**

  http://api.kde.org/4.x-api/kdebase-runtime-apidocs/nepomuk/html/classNepomuk_1_1ResourceWatcher.html

- **Query Service API**

  http://api.kde.org/4.x-api/kdebase-runtime-apidocs/nepomuk/html/namespaceNepomuk_1_1Query.html