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Persistence in MITK

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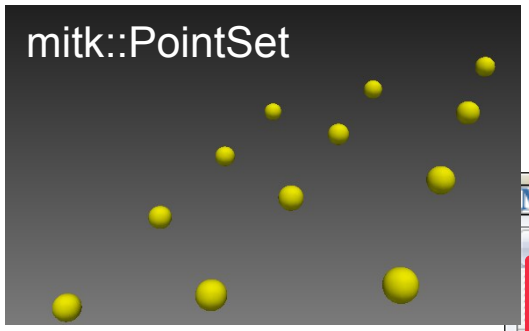
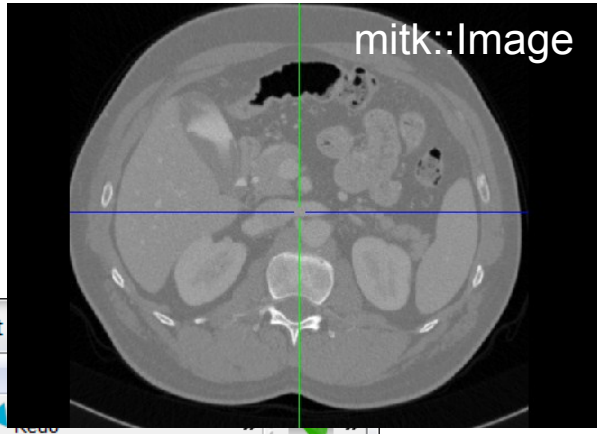
Background: Persistence

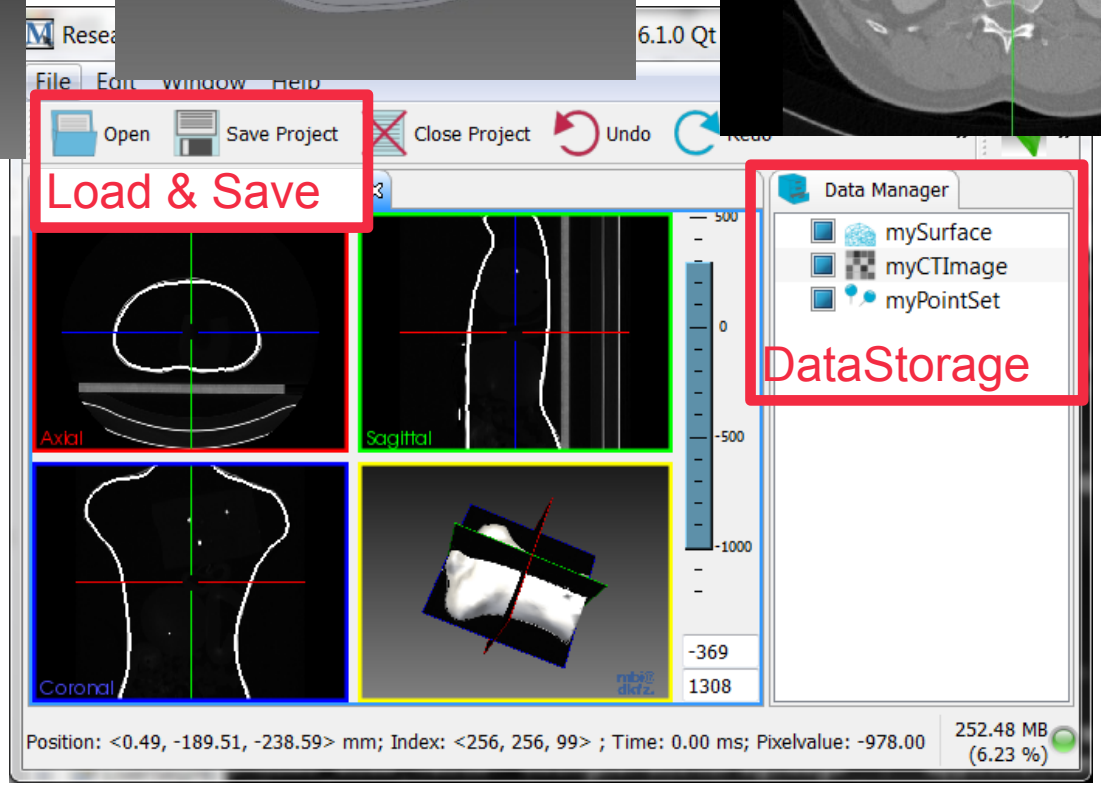
Persistence: capability of an application to permanently store

- Data
- Application Settings / States
  - of basic classes / modules
  - of the user interface
- […]

Data Objects: MITK Data Storage







Custom Data Classes

For custom data classes that derive from mitk::BaseData:

- New reader/writer implementations are needed.
- See bug squashing seminars about reader & writer for more details.
- Work in progress: a new concept for readers and writers

  → See bug 14866

Application Settings / States

Persistence for

1. UI/Qt independent modules:
   → MITK Persistence Service

2. Qt dependent modules / views:
   → Qt Settings

3. BlueBerry Plugins:
   → Persistence Features of BlueBerry

also planned for MITK:
Implementation of OSGI Configuration Service

MITK Persistence Service

- Store your settings, variables, etc as MITK property list
- This list is still available after restart of the application

Example:

header:

```
#include <mitkIPersistenceService.h>
//[...]
private:
  PERSISTENCE_GET_SERVICE_METHOD_MACRO
```

implementation:

```
mitk::PropertyList::Pointer propList = this->GetPeristenceService()
                                       ->GetPropertyList("org.mitk.myUniqueModule");
//set a variable:
propList->Set("deviceNumber", m_Controls->GrabbingDeviceNumber->value());
//get a variable:
int grabbingDeviceNumber = 0;
propList->Get("deviceNumber", deviceNumber);
```

MITK Persistence Service

- Preliminary version was added for the 2014-03 release.
- Still not fully functional, bugs might occur.
- See bug 16643 for current status.

Qt Settings

- Qt settings can be used to permanently store variables.

Example:

header:

```
#include <QSettings>
//[...}
QSettings m_MySettings;
```

implementation:

```
//initialize the settings object (e.g. constructor):
m_MySettings("MyClass","MyDescription")
//store settings:
m_MySettings.setValue("identifier",value);
//load settings:
int intExample = m_MySettings.value("identifier").toInt();
```

BlueBerry Persistence

1. **IMemento class:**

   save and restore view states

2. **berryPreferencesService:**

   persistence of variables, etc.

http://blueberry.berlios.de

BlueBerry Persistence: View States

- Every view that inherits from berry::IViewPart should overwrite these two methods:
  - `void Init(IViewSite::Pointer site, IMemento::Pointer m)`
  - `void SaveState(IMemento::Pointer m)`
- Use the IMemento class to save / restore your states.
- You get an instance of IMemento from the Init method of berry::IViewPart
- IMemento is reverted if the view is closed by the user

Detailled documentation:
http://mitk.org/Article_Save_and_Restore_your_View_State

BlueBerry Persistence: Preferences Service

- Preferences should be used whenever a user changeable value which does not have a direct representation in your view should be persisted.

- class: **berryPreferencesService**

Thank you for your attention!

Further information on www.dkfz.de

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