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\page MITKWorkbenchManualPage The MITK Workbench

Welcome to the basic MITK user manual. This document tries to give a concise overview of the basic functions of MITK and be a comprehensible guide on using them.

<div align="center"><h1>The User Interface </h1></div>

The layout of the MITK applications is designed to give a clear distinction between the different work areas. The following figure gives an overview of the main sections of the user interface.

\imageMacro{MITKUserManual\_GUICommented.png,"The Common MITK Application Graphical User Interface",16.00}

The Datamanager and the \ref MITKUserManualPagePerspectives have their own help sections. This document explains the use of:

 - The \ref Four Window View

 - The \ref Menu

 - The \ref MITKUserManualPageLevelWindow

 - The \ref MITKUserManualPageMemoryUsage

 - The \ref MITKUserManualPageViews

<div align="center"><h1>Four Window View </h1></div>

<h2>Overview </h2>

The Four Window View is the heart of the MITK image viewing. The standard layout consists of three 2D windows and one 3D window, with the axial window in the top left quarter, the sagittal window in the top right quarter, the coronal window in the lower left quarter and the 3D window in the lower right quarter. The different planes form a crosshair that can be seen in the 3D window.

Once you select a point within the picture, information about it is displayed at the bottom of the screen.

<h2>Navigation </h2>

Left click in any of the 2D windows to center the crosshair on that point. Press the right mouse button and move the mouse to <B>zoom</B> in and out. Scroll with the mouse wheel to <B>navigate through</B> the slices of the active window. Press and hold the mouse wheel while moving the mouse to <B>pan</B> the image section.

In the 3D window you can <B>rotate</B> the object by pressing and holding the left mouse button while moving the mouse. <B>Zoom</B> either with the right mouse button as in the 2D window or with the mouse wheel. <B>Pan</B> the object by moving the mouse while keeping the mouse wheel pressed. Placing the cursor within the 3D window and holding the "F" key allows <B>free flight</B> into the 3D view.

<h2>Customizing</h2>

By moving the cursor to the upper right corner of any window you can activate the window menu. It consists of three buttons (left:crosshair button, middle: fullscreen button, right:layout button).

\imageMacro{MITKUserManual\_CrosshairModes.png,"Crosshair",8.72}

The crosshair button allows you to toggle the crosshair, to reset the view and to change the behaviour of the planes.

Activating either of the rotation modes allows you to rotate the planes visible in one of the 2D windows. To apply the rotation, move the mouse cursor close to one of the planes press and hold the left mouse button and drag the plane by moving your mouse.

The swivel mode is recommended only for advanced users as the planes can be moved freely by clicking and dragging anywhere within a 2D window.

The fullscreen button expands the corresponding window to fullscreen within the Four Window View.

\imageMacro{MITKUserManual\_ViewsChoices.png,"Layout Choices",5.19}

The layout button allows you to choose another layout for the Four Window View that suits your task better.

<div align="center"><h1>Menu</h1></div>

<h2>File</h2>

This dialog allows you to save, load and clear entire projects. This includes all the nodes in the Datamanager.

<h2>Edit</h2>

This dialog supports undo and redo operations as well as the image navigator, which gives you sliders to navigate through the data quickly.

<h2>Window</h2>

This dialog allows you to open a new window, change between perspectives and reset your current one to default settings.

If you want to use an operation of a certain perspective within another perspective the "Show View" menu allows to select a specific function that is opened and can be moved within the working areas according to your wishes. Be aware that not every function works with every perspective in a meaningful way.

The Preferences dialog allows you to adjust and save your custom settings.

\imageMacro{MITKUserManual\_WindowDropdown.png,"Preferences",4.89}

<h2>Help </h2>

This dialog contains this help, the welcome screen and information about MITK.

<div align="center"><h1>Levelwindow</h1></div>

Once an image is loaded the Levelwindow appears to the right hand side of the Four Window View. With this tool you can adjust the range of grey values displayed and the gradient between them. Moving the lower boundary up results in any pixels having a value lower than that boundary to be displayed as black. Lowering the upper boundary causes all pixels having a value higher than it to be displayed as white.

The pixels with a value between the lower and upper boundary are displayed in different shades of grey. In this manner, a smaller Levelwindow results in higher contrasts while cutting of the information outside its range whereas a larger Levelwindow displays more information at the cost of contrast and detail.

You can pick up the Levelwindow with the left mouse button to move it up and down. Moving the mouse cursor to the left or right will change its size. Selecting one of the boundaries with a left click allows you to change the size symmetrically. Holding CTRL and selecting a boundary adjusts only that value.

There are two fields containing numbers at the bottom of the Levelwindow which allow you to directly adjust the Levelwindow. While the upper field describes the center of the Levelwindow, the bottom field describes the span of the window around the center. By selecting one of fields and changing the value you can set these two parameters.

<div align="center"><h1>System Load Indicator</h1></div>

The System Load Indicator in the lower right corner of the screen gives information about the memory currently required by the MITK application. Keep in mind that image processing is a highly memory intensive task and monitor the indicator to avoid your system freezing while constantly swapping to the hard drive.

<div align="center"><h1>Views</h1></div>

Each solution for a specific problem that is self-contained is realized as a single view. Thus, you can create a workflow for your problem by combining the capabilities of different views to suit your needs.

One elegant way to do this is by combining views in perspectives.

By pressing and holding the left mouse button on a views tab you can move it around to suit your needs, even out of the application window.

<div align="center"><h1>Perspectives </h1></div>

The different tasks that arise in medical imaging need very different approaches. To acknowledge this circumstance MITK supplies a framework that can be build upon by very different solutions to those tasks. These solutions are called perspectives, each of them works independently of the others although, they might be used in sequence to achieve the solution for more difficult problems.

It is possible to switch between the perspectives using the "Window"->"Open Perspective" dialog.

See menu for more information about switching perspectives.

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