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Hi and welcome to this new lesson an "Introduction to ImageJ".

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Today we will see why we chose ImageJ for this course

We'll also see how to install and then run this software

how to use ImageJ as a tool to display images

how to retrieve metadata of an image

Finally we'll see how to record a macro and where to get some help

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Many software exist in order to process & analyse your images.

Some of them are open-source while some others are ... closed source.

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ImageJ is one of these open source softwares.

It has been available since 97 and take its origin from another software : NIH image.

(we recommend you to read the Corresponding article published in Nature Methods)

Since 2005, a new distribution of ImageJ named Fiji (which stands for Fiji is just ImageJ) appeared.

It is now a collective effort of many contributors and is the distribution we recommend you to install and use during this course.

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On the home page of Fiji you will find the link to download it

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Fiji is available for all major operating systems, so Windows Mac OS and Linux.

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It is a Java based software that can work on different platform.

This is one of the characteristics and benefits of ImageJ.

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ImageJ - Fiji has a large Community of Users.

With more than 1000 plugins (A plugin is a smaller piece of software dedicated to a specific task). and a lot of documentation is available with tutorial explaining how to use these tools.

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There is also a very active Forum where everyone can find answers for common issues or ask questions about image processing and analysis.

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Another advantage of ImageJ, and one the reason of its success, is the macro language. It allows you to easily record a sequence of operations as you apply them on an image to reproduce this sequence on a different image
OR EVEN on a folder containing many images.

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So, now that you know why we want to use this software, let's start.

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This is the main bar with the different menus.

When you click on one of them it you can see the list of items it contains, here the HELP and here the plugins.

To open an image, you can use the Function File>Open

During the MOOC we will often use some images from "Open Samples"

Finally you can simply drag-and-drop a file on the main bar

To make it appear as an independent window

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Metadata are all the information that you may have to use and that are stored within your image, like the pixel size, the bit depth, etc

You can get the info window by pressing the letter "i" keyboard.

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Now, let's see how to use the recorder.

First, you go to Plugins > Macros > Record

You see a new window popping up.

In this window you can select the type of language , here we select Macro .

If I take a tool like rectangle and draw one of the image you see that 2 lines are added. one for the tool selection AND one for the drawing of the rectangle.

Now if I take a new tool a draw a circle , it's also recorded.

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To create a macro I simply press the button "Create"

and a new window will pop up with the corresponding lines in it.

Now if I select my image and pres RUN it will re-apply the exact same sequence of operations.

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Many of the plugins can be recorded

And you will find additional functions on the dedicated web page

That you can access from the help menu.

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Finally, you can also search for a function using the search bar .

As soon as you start typing it will offer you some function with the corresponding term.

Here, for exemple I start to type brightness and it offers be the function.

THIS is a KEY feature, that will allow you to find easily the function you are looking for .

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Okay, this is the end of the “introduction to imagej”.

We saw together that Fiji is Just ImageJ

We also had a look to the benefits of this software

that images contains metadata

How to use the recorder to keep track of your actions and reuse this sequence of actions

Finally, we saw where to find additional macro functions.

Thank you and good bye