

# Instructions for testing and using the library

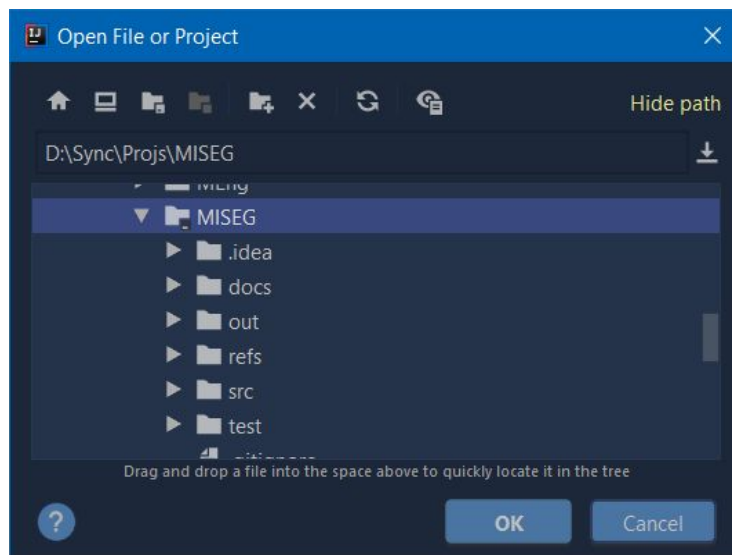
There are two ways to test and use MISEG:

## 1. Directly Access the Source Code

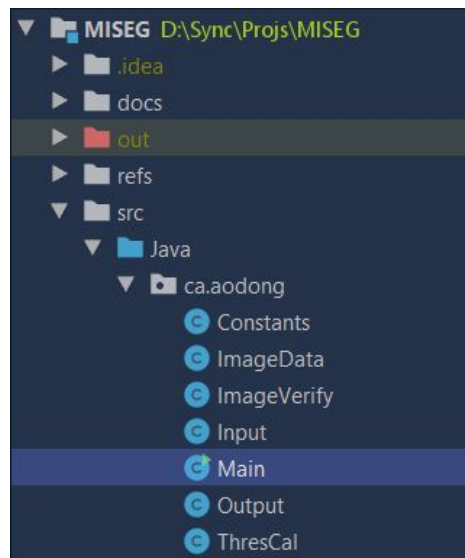
### 1.1 Test and Run with an IDE

This way is straight forward and recommended to test the library for the first time. You can test it by following the steps:

- 1). Install an IDE for Java on your local machine (preferably IntelliJ IDEA or Eclipse).
- 2). Install JDK (preferably JDK 11) to your computer.
- 3). Clone the whole repo <https://github.com/Ao99/MISEG> to your computer.
- 4). Make sure that the MISEG/test/input/ contains input images and the folder MISEG/test/output/ exist.
- 5). Open the project from the **root folder** - MISEG



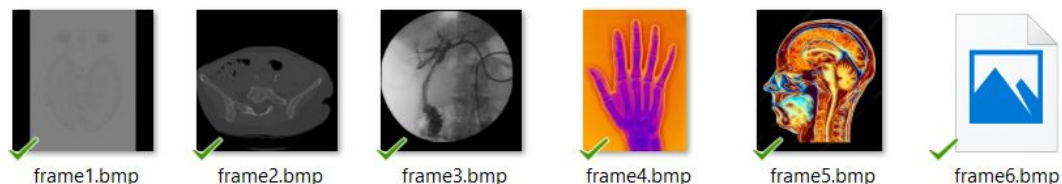
- 6). Using IDE to run the sample Main.java at MISEG\src\Java\ca\laodong



7). The following message including 2 errors should be shown:

```
Error: the format of frame 6 is not supported.
Error: cannot find the file test/input/frame7.bmp
Warning: frame 6 is not loaded.
Warning: frame 7 is not loaded.
5 image frames have been loaded.
```

Because MISEG\test\input\frame6.bmp is a damaged file, and MISEG\test\input\frame7.bmp does not exist, getting the above messages means the library is running well



8). The following message should also be shown:

```
*****
Number of thresholds to use:
please input a number from the set [1, 2, 3]
*****
```

Please input a number 1, 2 or 3 according to the instructions.

9). If the input is not a number (such as "A") or a number out of the bound (such as "100"), the following error message will be shown, and a new input will be asked:

```

A
Error: input is not a number from the set,
please read the following instructions carefully and try again:
*****
Number of thresholds to use:
please input a number from the set [1, 2, 3]
*****

```

- 10). If a correct input (such as “3”) is given, the calculated optimal thresholds will be displayed as follows:

```

*****
Number of thresholds to use:
please input a number from the set [1, 2, 3]
*****
3
The multiple threshold values for frame 1 are k1=1, k2=121, k3=125.
The multiple threshold values for frame 2 are k1=28, k2=61, k3=77.
The multiple threshold values for frame 3 are k1=69, k2=157, k3=198.
The multiple threshold values for frame 4 are k1=32, k2=92, k3=151.
The multiple threshold values for frame 5 are k1=27, k2=83, k3=150.

```

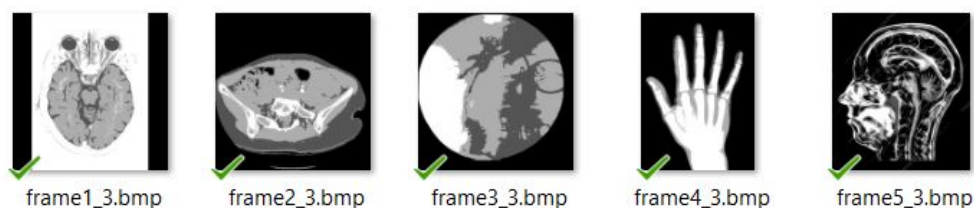
- 11). More error messages for frame6 and frame7 should be shown as follows:

```

Warning: thresholds for frame 6 are not calculated.
Warning: frame 6 is not segmented nor saved.
Warning: thresholds for frame 7 are not calculated.
Warning: frame 7 is not segmented nor saved.
5 segmented frames have been saved.

```

- 12). The output segmentation images should have been saved in the folder MISEG\test\output\



- 13). Modify and expand the source codes according to your own needs.

## 1.2 Test and Run with the Command Line

- 1). Install JDK (preferably JDK 11) to your computer.
- 2). Clone the whole repo <https://github.com/Ao99/MISEG> to your computer.
- 3). Make sure that the MISEG/test/input/ contains input images and the folder MISEG/test/output/ exist.
- 4). Use any text editor to open MISEG\src\Java\ca\aodong\Main.java, and change the input and output directories to **absolute paths** where the input and output folders are, such as the following picture,

```
public static void main(String[] args) {  
    String filenameIn = "D:/Sync/Projs/MISEG/test/input/";  
    String filenameOut = "D:/Sync/Projs/MISEG/test/output/";
```

- 5). Use the command line at the root directory MISEG/, and type the following command:

```
javac -sourcepath src/Java/ca/aodong/ -d out/production/MISEG src/Java/ca/aodong/*.java
```

- 6). Use the following command line to locate to the production folder:

```
cd out/production/MISEG
```

- 7). Use the following command line to run the software:

```
java ca.aodong.Main
```

- 8). An example is shown as follows

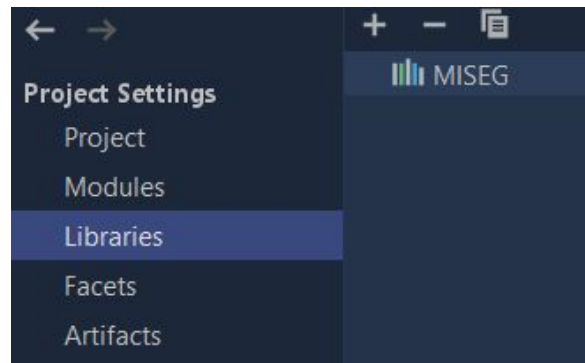
```
PS D:\sync\projs\MISEG> javac -sourcepath src/Java/ca/aodong/ -d out/production/MISEG src/Java/ca/aodong/*.java  
PS D:\sync\projs\MISEG> cd out/production/MISEG  
PS D:\sync\projs\MISEG\out\production\MISEG> java ca.aodong.Main
```

- 9). Follow the instructions 6 to 12 from 1.1 **Test and Run with an IDE.**

## 2. Use the MISEG.jar File

This is the usual way of using a published Java library. You can use and test it by following the steps:

- 1). Install an IDE for Java on your local machine (preferably IntelliJ IDEA or Eclipse).
- 2). Install JDK (preferably JDK 11) to your computer.
- 3). Clone the whole repo <https://github.com/Ao99/MISEG> to your computer.
- 4). Create a new Java project (preferably not in the same directory as the cloned repo).
- 5). Add MISEG\src\publish\MISEG.jar as a library of the new project.



- 6). Copy the input images into the new project directory. For example, copy everything from MISEG\test\input\ to NewProject\test\input\.
- 7). Create the output folder. For example, NewProject\test\output\.
- 8). Create a new Main.java file in the new project to use the library, or copy the prepared sample from MISEG\src\publish\Main.java to the new project.
- 9). Make sure that in Main.java, input and output directory have been set correctly

```
public static void main(String[] args) {  
    String filenameIn = "test/input/";  
    String filenameOut = "test/output/";  
}
```

- 10). Run Main.java, and follow the instructions 6 to 12 from 1.1 **Test and Run with an IDE.**