Use case

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1 Deliverables

We deliver to the students the following files

allFigs.m search for all `.png` and `.jpg` images in directory

signImage.p Obscured version of signImage function

2 Step by step (little by little)

2.1 Student

The students can plot their figures as usual and save the files as `.jpg` or `.png`

```
clear
close all
plot(1:10,((1:10)-5).^3)
saveas(gcf,'imageExample.jpg');

plot(1:10,((1:10)-5).^5+((1:10)-5).^3)
saveas(gcf,'imageExample1.jpg');
close all
```

All images can then be signed in one command

```
% Sign in one call
% signImage imageExample.jpg imageExample1.jpg;
```

alternatively, we can provide a command to search for all images in folder and sign them all

```
% sign all images in folder
files=allFigs();
signImage(files{:});
```

Then the students can add their figures to their reports using MS Word or LaTeX

2.2 Teacher

2.2.1 Extracting files

First we need to extract the figures from the report

1. MS Word `.doc(x)` We can profit from `.doc(x)` documents being only a compressed `.zip` file. GNU+Linux/MacOS have a `unzip` command which can extract files. We use it to extract to a specif folder

```
unzip -j exampleWord.docx "*.png" -d images_NOM1_NOM2
```

2. LaTeX GNU+Linux/MacOS have a `pdfimages` command which can extract images from a `.pdf` file. We use it to extract with specif names

```
pdfimages -j -png article.pdf images_NOM1_NOM2
```

2.2.2 Decrypting images

In MATLAB we can now verify individually the images using our `verifyImage` command

```
verifyImage images_NOM1_NOM2-000.png
```

or by using the `prof.m` command

```
prof
```

Resulting on

```
imageExample1_signed.png:
02:42:46:72:24:24;2022-06-08T14:24:14,193538211+02:00
imageExample_signed.png:
02:42:46:72:24:24;2022-06-08T14:24:14,349715641+02:00
```

If we have a list of MAC addresses we can compare them