

## ASSIGNMENT 1 — L<sup>A</sup>T<sub>E</sub>X

**Problem 1.** How do I compile hw.tex ?

Windows users can use the following command

```
texify -p hw.tex
```

in the command prompt and it will run pdflatex and bibtex the required number of time and output this pdf. If you want to use pdflatex and bibtex directly, you need to use the following set of commands

```
pdflatex hw
pdflatex hw
bibtex hw
pdflatex hw
```

Although, in practice it may not be required to use pdflatex three times always. Once you have created a pdf file identical to this one, you can go back and forth between the pdf and the tex file to see what command in L<sup>A</sup>T<sub>E</sub>X produces what output.

**Problem 2.** How do I specify a problem ?

You can specify the problem as above. However if you do not want to cut paste the problem from the assignment you can simply start writing the answer as shown below.

**Problem 3.** Although you can directly start writing the answer without writing the question, it might be useful to write the question down for completeness.

**Problem 4.** How do I write an equation ?

There are several ways. Equation with an equation number can be written as

$$E = mc^2 \tag{1}$$

You can refer the above equation as Eq. 2. If an equation is not important and you wont refer it later, you might not want to number it.

$$E = mc^2$$

You can also write a set of aligned equations as

$$E = mc^2 \tag{2}$$

$$G(x) = \frac{1}{2\pi\sigma} \exp \frac{(x - \mu)^2}{2\sigma^2} \tag{3}$$

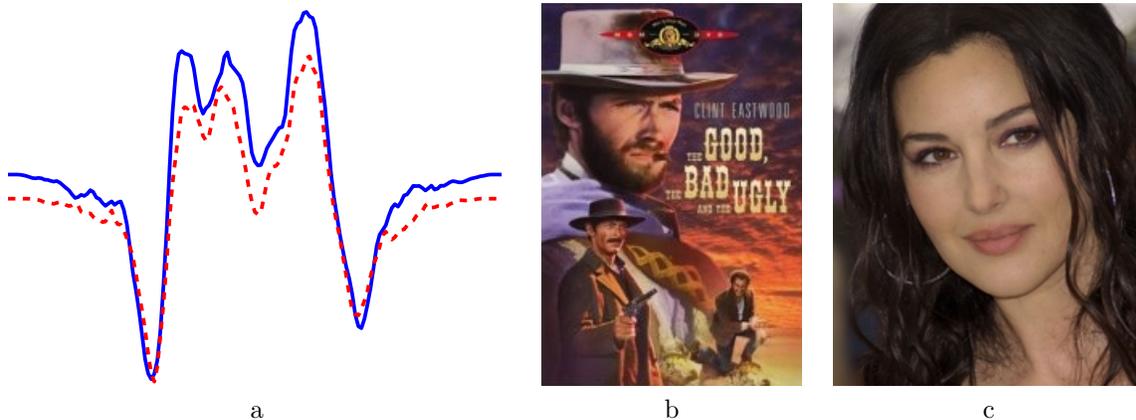


Figure 1: (a) shows a graph attached as a PDF, (b) shows a JPEG image while (c) shows a PNG image.

**Problem 5.** How can I add an image or a graph ?

In PDFLatex you can add images as JPEG and PNG files. Graphs and plots should be added as PDF because JPEG and PNG would store the graph as an image while PDF uses vector graphics format. An example is shown in Fig. 1.  $\LaTeX$  does not provide a lot of flexibility in where exactly the figure will be placed but after a while it does not bother you much.

**Problem 6.** How can I generate plot in pdf format using MATLAB ?

MATLAB allows you to directly save the current figure as a PDF file using the print command. However, the PDF file usually contains large white spaces around the plot. You can work around this problem by first generating an eps file using matlab

```
print -depsc2 filename.eps
```

This eps file can then be converted to pdf using epstopdf.

```
epstopdf filename.eps
```

**Problem 7.** Can one have more than one answer section for the problem ?

- (a) Part 1 Answer to part one.
- (b) Part 2 Answer to part two.

**Problem 8.** Did you make this assignment class ?

No I modified it slightly. But all credit for the assignment class goes to Madhusudan Singh (C) 2004.

**Problem 9.** How do I cite references ?

There are a few ways to add references. The cleanest way is using bibtex. During the course, you can maintain a single bibfile and refer from that file "cite". For example, I can cite Higham [1] and Horn [2] and only those entries from the bibfile appear in the reference which I have cited.

## References

- [1] Nicholas J. Higham. Computing the Nearest Correlation Matrix a Problem From Finance. *IMA Journal of Numerical Analysis*, pages 329–343, 2002.
- [2] B. Horn. Closed-form solution of absolute orientation using unit quaternions. *JOSA-A*, 4:629–642, 1987.

*Submitted by Satya P. Mallick and Serge Belongie on March 22, 2006.*