LaTeX learning

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```c
#include<stdio.h>
#include<stdlib.h>
int main()
{
        int n;
        int i=0;
        int size=5;
//        float*s=NULL;

        printf("how many numbers do you want to input?\n");
        scanf("%d",&n);
        float*s=(float*)malloc(sizeof(float)*size);

        for(i=0;i<n;i++)
        {
                if(i==size)
                {
                        size=size*2;
                        s=(float*)realloc(s,sizeof(float)*size);

                }
                printf("please input the %d number:",i+1);
                s[i]=i;
        }

        free(s);
}
```

"This" 'is' 'my' *first* document prepared in" LaTeX.

Figure 1: sdfsdf

\documentclass{article} tells LaTeXthat what we want to produce is an article. If you want to write a book, this must be changed to \documentclass{book}.
The whole document we want to typeset should be included between \begin{document} and \end{document}.
Then \emph{first}, becomes*first* in the output. It is a common practice to *emphasize* words in print using italic letters. I typed it on January 1, 2016.

1 Input files

1.1 space

It does not matter whether you enter one or several spaces after a word.

An empty line starts a new paragraph.

1.2 Special Characters

The following characters are reserved characters that either have a special meaning under LaTeXor are not available in all font.If you type them directly in LaTeX, they will normally not print.

As you can see.... # $ % ^ & _ { } ~ \...^ and ~ should be \^{} and \~{}.

1.3 LaTeX Commands

LaTeXignore whitespace after commands. If you want to get a space after a command, you have to put either an empty parameter and a blank or special spacing command after the command name. The empty parameter{} stops LaTeX from eating up all whitespace after the command name.

Some commands require a perameter, which has to be given between curly braces{ } after the command name. Some commands take optional parameters, which are inserted after the command name in square brcakets

.

Command [*Optional parameter*] {*parameter*}

Some examples:

You can *lean* on me! You can \testsl {lean} on me.

Please, start a new line right here!\newline
Thankyou!

1.4 Comments

%

The % character can also be used to split long input lines where no whitespace or line breaks%are allowed.

For longer comments, you can use verbatim package. Add line \usepackage{verbatim} to the preamble of your document.

This is another

This is another \begin{comment} abcdefg \end {comment}

1.5 Input File Structure

Every inputfile start with the command \documentclass{...}

To load a package use the command: \usepackage{...}

You start with the body of the text with the command:\begin{document}

At the end of the document you add \end{document}

1.6 A Typical Command Line Session

The area between \documentclass and \{document} is called a preamble.

Compiling your LaTeX input file:

first

Create your LaTeXinput file. This file must be plain ASCII text.

second

1. Open shell.
2. latex foo.tex
3. xdvi foo.dvi &

Convert dvi file to PostScript for printing or viewing with GhostScript.

dvips -Pcmz foo.dvi -o foo.ps

dvipdf foo.dvi

1.7 The Layout of the Document

1.7.1 Document Classes

Example:An input file for a LaTeX document could start with the line.

\documentclass[11pt, twoside,a4paper]{article}

1.7.2 Packages

If you want to include graphics, coloured text or source code from a file into your document, you need to enhance the capability of LaTeX. Such enhancement called packages.

Add commandline: \usepackage[options]{package}

- article for articles in scientific journals, short reports, presentations, invitations, program documentations.
- proc a cladd for proceeding based on article class.
- minimal is as small as it can get. It only set page size and base font. It is mainly used for debugging purpose.
- report for longer reports containing several chapters, small books, PHD thesis,...

- book for real books
- slide for slides.
-

2 typesetting

2.1 Line breaking and page breaking

For a line breaking, using \\or \newline The difference between "the empty line between two sentences" and \\is intended. Starting a new page: using \newpage. It seems that \linebreak[n] and \pagebreak[n] can only be used above 4..because you leave LaTeXthe option of ignoring your command if the result would look very bad.

2.2 Hyphenation

This means that if you place a hyphenation command into the preamble of your document it will influence th e English language hyphenation. If you place the command after the \begin{document} and you are using some package for national language support like babel, then the hyphenation hints will be active in the language activated through babel.

If you use \{FORTRAN Hy-phen-a-tion} can prevents FORTRAN, no special character or symbols are allowed in the argument. command \- inserts a discretionary hyphen into a word. I think this isaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa:supersdfsdfsdfgggggg.

Several worda can be kept together on one line with the command by using \mboxand \fbox 12345678912312312 12123123123123sdhjfsdh

2.3 Ready-made String

January 1, 2016
LaTeX
TeX
LaTeX 2_ε

2.4 Special Characters and Symbols

2.4.1 Quotation Marks

You should not use " in LaTeX , use two grave accent for opening and the vertical quote for closing quotation.

2.4.2 Dashes and Hyphens

X-rated
pages 12–37
yes—or no?
0, 1 or −1

2.4.3 Tilde(~)

˜ and ∼.

2.4.4 Slash

read/write allows hyphenation. Normal '/' character may be still used for ratios or units. 5MB/s.

2.4.5 Degree Symbol(°C)

30 ℃ 45 °F. €

2.4.6 Ellipsis

. . . (low dots) Not like this ... but like this:
New York. Tokyo, Budapest, . . .

2.4.7 Ligatures

Disable ligatures: shelfful
seño hôtel ö I like BASIC. What about you
sdfsdf sdfsd 2.4.7 sdhfjsdhf[1] text *a*cc `\ldots`

[1] ssdfsd

2.4.8 tabular

aaa	bbb
ccc	ddd
eee	ffff
ggg	hhh

aaaaaaaaaaaaaaa

rrr	uuu

111111		222222	333333	444444
111111		222222	333333	444444

ddddsdfsdfsdffffff

aaa		
wwww	yyyyyyyyyyyy	yyuiu

pi	value
π	3.1415
π^{π}	45.6

Add a squared and b squared to get c squared.

$$a^2 + b^2 = c^3 \qquad (1)$$

Einstein says:

$$E = mc^2 \qquad (2)$$

He didn't say

$$1 + 1 = 3 \qquad \text{(dumb)}$$

This is a reference to (2).

In text style: $1\frac{1}{2} hours$ $1\frac{1}{2}$ hours

$1\dfrac{1}{2} hours$ $1\frac{1}{2} hours$

$\sqrt{\frac{x^2}{y+1}}$ $\sqrt{\frac{x^2}{y+1}}$ $x^{\frac{2}{k+1}}$ $\frac{\partial^2 f}{\partial x^2}$

$\binom{n}{k} = \binom{n-1}{k} + \binom{n-1}{k-1}$ $f_n(x) \overset{*}{\approx} 1\, sdfjkslsk?$

$$\sum_{i=1}^{n} \prod_{\epsilon} \qquad (3)$$

sdfsfdsdf sdfsdfsfd

sdfsdf

`sdfsdf`

Proof. thisidjf

$$e^{x+y} = e^x \cdots e^y \qquad \square$$

Proof. thisidjf

$$e^{x+y} = e^x \cdots e^y \quad \square$$

sdfsdf