LaTeX WORKSHOP

The Gate for Professional Documents

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Exercise 1

1. Create new account.

2. Create new project using "**Elsevier Article (elsarticle) Template**".

3. Name your project as "**WorkShop_YourName**".

4. Share the document with us.

Exercise 2

1. Edit the paper title to "**LATEX Workshop**"

2. Write your name as the author of the paper.

3. Edit the affiliation to match yours.

4. Create the Abstract, Introduction and conclusion text files.

5. Import the text files to the main using \input{FileName}

Exercise 3

1. Create the following Ordered List :

> 1. Lorem ipsum dolor sit amet, consectetur
> 2. Lorem & ipsum dolorsit amet, consectetur

2. Create the following sentence :

> Lorem ipsum dolor sit amet, consectetur Lorem ipsum dolor sit amet, consectetur
> Lorem ipsum huge consectetur

Make sure to import package :
- \usepackage{xcolor}
- \usepackage[colorlinks,urlcolor=blue]{hyperref}

Exercise 4

1. Create the following matrix using both Inline and display math mode

$$
\begin{pmatrix}
x_1^1 & \cdots & x_1^{nVar} \\
\vdots & \ddots & \vdots \\
x_{nPop}^1 & \cdots & x_{nPop}^{nVar}
\end{pmatrix}
$$

Exercise 5

1. Write the following piecewise function in display math mode

$$f(x) = \begin{cases} x+2 & if \quad x > 1 \\ 2 & if \quad -1 \leq x \leq 1 \\ x-1 & if \quad -3 < x < -1 \end{cases}$$

2. Write the following equation in inline math mode

$$f(x) = \left(\frac{\sum_{j=1}^{n} X^j}{n} \right)$$

Exercise 6

1. Import an image from the web to the project

2. Caption the figure as "**The flowchart figure is from exercise 6 of the latex workshop**"

3. Label the figure as "**fig:flowchart**"

4. Resize it to be fit the width of the paper

5. Position it center and at the top of the page

Make sure to import \usepackage{graphicx} package

Exercise 7

1. Generate the Following table

2. Set the table width to 70% of the text width:

Make sure to import package :
- \usepackage{adjustbox}
- \usepackage{multirow}

Table 14: Exercise 7		
Multirow cell	Cell2	Cell3
	Cell2	Cell3
Cell1	multicolumn	

Exercise 8

Make sure to import
\usepackage[table]{xcolor}package

1. Generate the Following table:

   - Use 30 % of the red color for the odd rows (starting from the 3rd row)

   - Use 20% of the blue color for the even rows (starting from the 2nd row)

   - Use 40% of the gray color for the 2nd cell in the first-row

Table 16: Exercise 8

Row1 Cell1	Row1 Cell2	Row1 Cell3
Row2 Cell1	Row2 Cell2	Row2 Cell3
Row3 Cell1	Row3 Cell2	Row3 Cell3

red
green
blue
cyan
magenta
yellow
black
gray
white
darkgray
lightgray
brown
lime
olive
orange
pink
purple
teal
violet

Exercise 9

1. Write the following Algorithm using Latex:

Algorithm 5 An algorithm of exercise 9 of the Latex workshop

1: $X \gets 1$
2: $Y \gets y$
3: $Z \gets n$
4: **while** $Z \neq 0$ **do**
5:     **if** Z is even **then**
6:         $Y \gets Y \times Y$
7:         $Z \gets \frac{Z}{2}$
8:     **else if** Z is odd **then**
9:         $X \gets X \times Y$
10:         $Z \gets Z - 1$
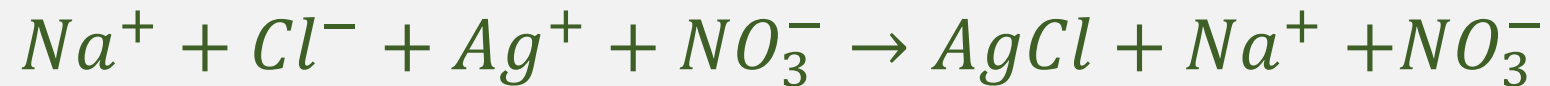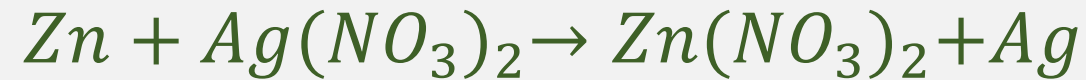11:   **end if**
12: **end while**

Symbol	Command
$\gets$	\gets
$\neq$	\neq
$\times$	\times

Make sure to import package :
- \usepackage{algorithm}
- \usepackage{algpseudocode}

Exercise 10

1. Write the following Chemical Formulae:

$$Zn + Ag(NO_3)_2 \rightarrow Zn(NO_3)_2 + Ag$$

$$Na^+ + Cl^- + Ag^+ + NO_3^- \rightarrow AgCl + Na^+ + NO_3^-$$

Make sure to import package
\usepackage[version=4]{mhchem}