

Latex

BY

Eng : manar elhussiny

1- اول حاجة المفروض اعمالها (احدد نوع document اللى هعمله) سواء كان (Article or book or report...)

```
\documentclass{Article}
```

```
\documentclass{book}
```

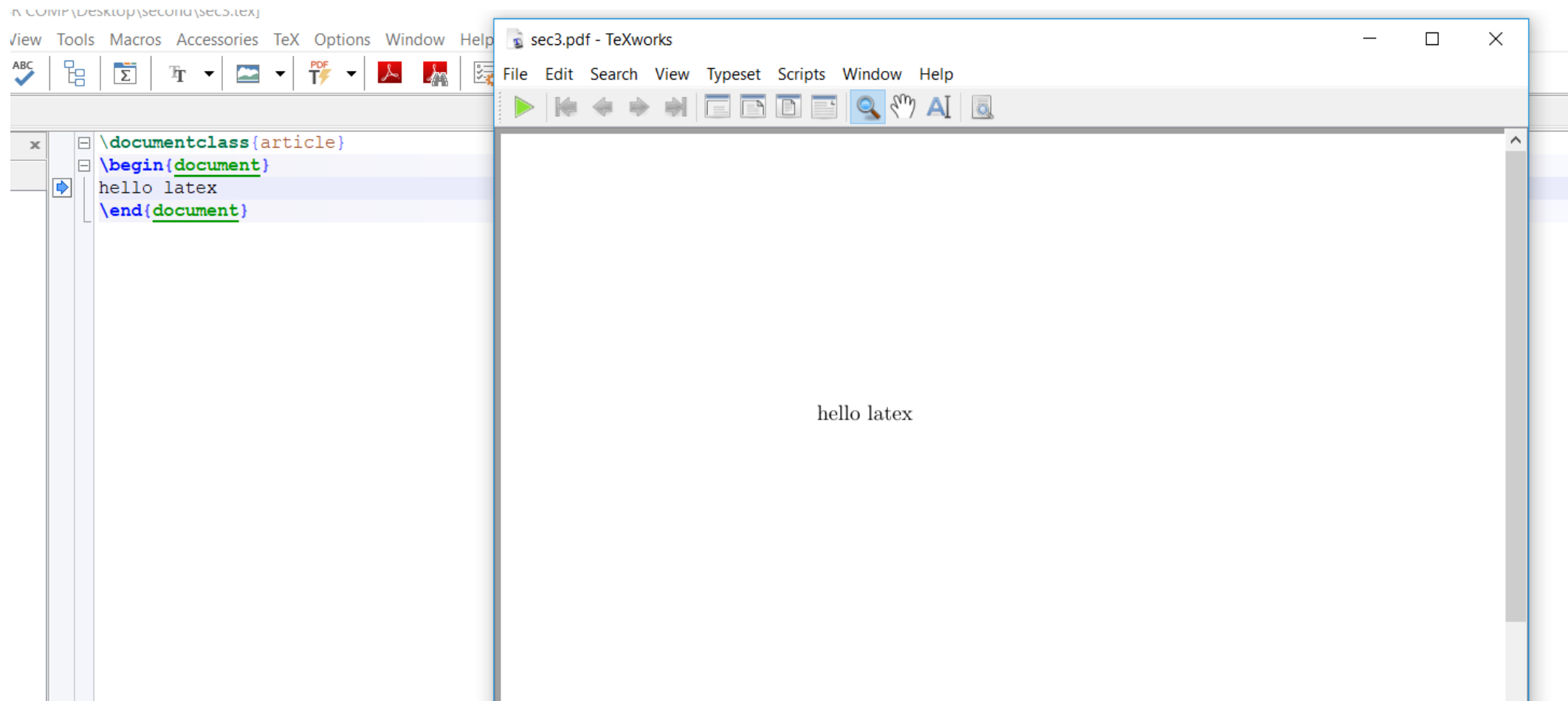
2- اى حاجة عايزاه تظهاو (تكتب) في document

```
\begin{document}
```

بتكتب بين
الامرین دول

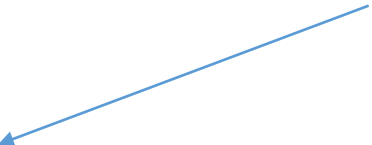
```
\end{document}
```

example



3- لو انا عايزة اكتب عنوان للمقال (للتقرير او للكتاب) بتاعى بكتب الامر دا `\title{the first document by latex}`

```
\documentclass{article}
\title{the first document by latex}
\begin{document}
hello latex
\end{document}
```




بس مش هيظهر عند run في document عشان لازم كل حاجة تكتب بين الامرين دول `\begin{document}`

`\maketitle`

`\end{document}`

لذلك بيكتب امر `(\maketitle)`



```

\documentclass{article}
\title{the first document by latex}
\begin{document}
hello latex
\end{document}

```

Before \maketitle

hello latex

```

\documentclass{article}
\title{the first document by latex}
\begin{document}
\maketitle
hello latex
\end{document}

```

After \maketitle

the first document by latex

November 26, 2019

hello latex

4- عشان اتحكم في ظهور التاريخ

`\date{}` لاختفاء التاريخ

`\date{\today}` (او ماكتبش اى امر وهو هيظهر لوحده) لكتابة تاريخ النهاردة

`\date{December 24}` لكتابة التاريخ اللي انا عايزه

5- لو انا عايزة اكتب اسم وبيانات المؤلف

`\author{ahmed mohammed}`

`\author{ahmed ali \\ faculty of computers and information \\ egypt }`

عشان انزل سطر



example

```
\documentclass{article}
\title{the first document by latex}
\date{}
\author{ahmed ali \\ faculty of computers and information \\ egypt }
\begin{document}
\maketitle
hello latex
\end{document}
```

the first document by latex

ahmed ali
faculty of computers and information
egypt

hello latex

ملحوظة:-

التاريخ اتشال عشان كتبت \date{}

لو ماكتبتش اى امر للتاريخ بيظهر تاريخ النهاردة

New line

لو عايزة انزل سطر بكتب `\\` لو سطرين بكتب `\\\\` لو ثلاثة `\\\\\\` وهكذا

```
\begin{document}
\maketitle
hello latex
```

```
be strong for yourself
\end{document}
```

هينزل سطر واحد وممكن اكتب `\\`

```
\begin{document}
\maketitle
hello latex
```

```
////
be strong for yourself
\end{document}
```

هينزل سطرين

Other commends

```
\newline
\linebreak
```

```
\begin{document}
\maketitle
hello latex \newline
```

```
be strong for yourself
\linebreak have a nice day
\end{document}
```


spaces

لو عايزة اسيب مسافة بين الكلمات بكتب امر `\quad` or `\qquad`

```
\begin{document}
\maketitle
be \quad strong \qquad for \quad \quad yourself
\end{document}
```

New page

```
\begin{document}
\maketitle
```

Unprecedented efforts of the researchers have been witnessed in the recent past towards the development of vaccine platforms for the control of the COVID-19 pandemic. اول صفحة

```
\newpage
```

لانشاء صفحة جديدة

Albeit, {\color{red} vaccination stands as a practical strategy to prevent SARS-CoV-2 infection, supplementing the anti-COVID19 arsenal with therapeutic options such as small molecules/peptides and antibodies is being conceived as a prudent strategy to tackle. تانى صفحة.

```
\end{document}
```

example

```
\documentclass{article}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\\ faculty of computers and information \\\ egypt }
\begin{document}
\maketitle
hello latex
\\\\\\
be \quad strong \quad\quad for \quad \quad yourself
\end{document}
```

the first document by latex

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egypt

November 27, 2019

hello latex

be strong for yourself

عشان اعمل comment بكتب علامة %

%this is comment

Special Characters عشان اكتبها لازم احط قبلها \

_	&	^	%	\$	#	{ }	~	\
_	\&	\^	\%	\\$	\#	\{ \}	\~	\textbackslash

عايزة اعمل كلمة (كلمات) **bold**

بكتب هنا الكلمة اللي عايز اعملها

عايزة اعمل كلمة (كلمات) *italic*

يمكن اعمل الامرين جوا بعض `\textbf{\textit{italic and bold}}`

```
{\color{red}this is first color}  
{\color{blue}this is second color}
```

عايزة اللون كلمة (كلمات)

```
\documentclass{article}  
\usepackage{color}
```

طبعا بنستخدم package of color

```
\tiny {text} خط رفيع وصغير  
\small {text}  
\normalsize {text} خط عادى  
\footnotesize {text}  
\scriptsize {text}  
\large {text} خط كبير بس مش اوى  
\Large {text} خط كبير  
\LARGE {text} خط كبير اوى  
\huge {text}  
\Huge {text}
```

عايز اتحكم في حجم الخط

المنطقة دى تسمى preamble



```
\documentclass{article}  
\usepackage{color}  
\title{the first document by latex}  
\date{\today}  
\author{ahmed ali \\ faculty of computers and information \\ egypt }  
\begin{document}
```

example

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \ \ faculty of computers and information \ \ egypt }
\begin{document}
\maketitle
%this is comment

\textbf{bold}\\
\textit{italic}\\
\textbf{\textit{italic and bold}}\\

{\color{red}this is first color}
{\color{blue}this is second color}\\

{\large text}\\
{\Large text}\\
{\LARGE text}\\
{\normalsize text}\\
{\tiny text}

\end{document}
```

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bold
italic
italic and bold

this is first color this is second color

text
text
text
text
text

section

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1 introduction

this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction

2 relate work

this is relate work this is relate work this is relate work this is relate work this
is relate work this is relate work this is relate work this is relate work this is
relate work this is relate work this is relate work this is relate work this is relate
work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this
is relate work this is relate work this is relate work



دا اول section



دا تانى section

section

`\section{section_name}`

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\\ faculty of computers and information \\\ egypt }
\begin{document}
\maketitle

\section{introduction}
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
\section{relate work}
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work

\end{document}
```


Subsection

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section

1 introduction

this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction

Subsection

1.1 introduction2

this is introduction2 this is introduction2 this is introduction2 this is introduc-
tion2 this is introduction2 this is introduction2

Subsection

1.2 introduction3

this is introduction3 this is introduction3 this is introduction3 this is introduc-
tion3 this is introduction3 this is introduction3

2 relate work

this is relate work this is relate work this is relate work this is relate work this
is relate work this is relate work this is relate work this is relate work this is
relate work this is relate work this is relate work this is relate work this is relate
work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this

Subsection

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\\ faculty of computers and information \\\ egypt }
\begin{document}
\maketitle

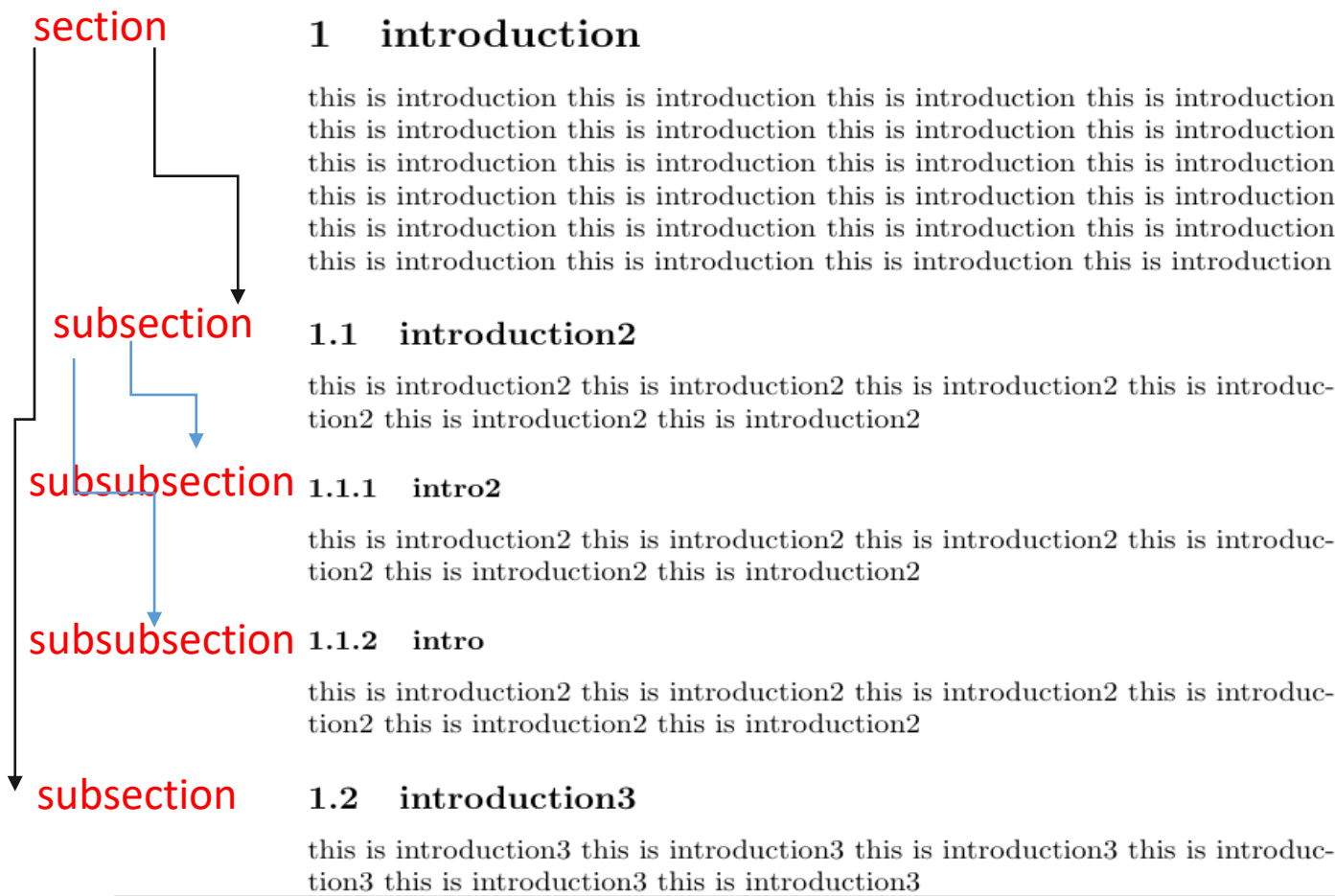
\section{introduction}
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction

\subsection{introduction2}
this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2

\subsection{introduction3}
this is introduction3 this is introduction3 this is introduction3 this is introduction3 this is introduction3 this is introduction3

\section{relate work}
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work

\end{document}
```



Sub_subsection

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \ \ faculty of computers and information \ \ egypt }
\begin{document}
\maketitle

\section{introduction}
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction

\subsection{introduction2}
this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2

\subsubsection{intro2}
this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2

\subsubsection{intro}
this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2 this is introduction2

\subsection{introduction3}
this is introduction3 this is introduction3 this is introduction3 this is introduction3 this is introduction3 this is introduction3

\section{relate work}
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
this is relate work this is relate work this is relate work this is relate work this is relate work this is relate work
\end{document}
```

Texts Alignment

Left

\begin{flushleft}

be strong for yourself

be strong for yourself

\end{flushleft}

be strong for yourself

Right

\begin{flushright}

be strong for yourself

be strong for yourself

\end{flushright}

Center

\begin{center}

be strong for yourself

\end{center}

New paragraphs

\par

be strong for yourself

\par \parindent=8mm

be strong for yourself

\par \noindent \parskip 2mm

be strong for yourself

\par

be strong for yourself

\paragraph{ the first paragraph}

be strong for yourself

\subparagraph{the second paragraph}

be strong for yourself

عشان اعمل list

the first document by latex

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faculty of computers and information
egypt

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```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\\ faculty of computers and information \\\ egypt }
\begin{document}
\maketitle

\begin{itemize}
  \item se
  \item cs
  \item it
  \item is
\end{itemize}

\begin{enumerate}
  \item se
  \item cs
  \item it
  \item is
\end{enumerate}

\end{document}
```

- se
 - cs
 - it
 - is
1. se
 2. cs
 3. it
 4. is

ينفع احط List جوا List

واغير طريقة الترقيم

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i se

– se1

– se2

ii cs

iii it

iiii is

1. se

(a) se1

(b) se2

2. cs

3. it

4. is

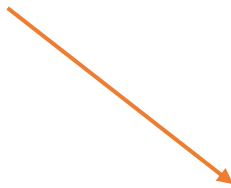
```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\\ faculty of computers and information \\\ egypt }
\begin{document}
\maketitle

\begin{itemize}
\item[i] se
\begin{itemize}
\item se1
\item se2
\end{itemize}
\end{itemize}
\item [ii]cs
\item [iii]it
\item [iiii]is
\end{itemize}

\begin{enumerate}
\item se
\begin{enumerate}
\item se1
\item se2
\end{enumerate}
\end{enumerate}
\item cs
\item it
\item is
\end{enumerate}

\end{document}
```


Multiple columns



```
\documentclass[twocolumn]{article}
\title{\textbf{\Huge Covid-19}}
\author{\textit{\scriptsize ahmed ali }}\textit{\scriptsize
{small faculty of computer and information} \textit{\footnotesize
egypt}}
\date{\scriptsize october 14,2022}
\usepackage{color}
\begin{document}
\maketitle
\section{Introduction}
\textup{unprecedented} Unprecedented \textsl{ efforts} \textsc{of}
\texttt{the} \emph{researchers} have been witnessed in the recent past
towards the development of vac-
{\color{red} cine platforms for the control of the COVID-19 pandemic.
Albeit, vaccination stands as a practical strategy to prevent
\newpage
In light of the evidence ascertaining the potential of small molecule drugs.
\end{document}
```

Covid-19

ahmed ali

faculty of computer and information

egypt

october 14,2022

1 Introduction

*In light of the evidence ascertaining the potential
of small molecule drugs.*

unprecedented Unprecedented efforts OF the re-
searchers have been witnessed in the recent past to-
wards the development of vac- cine platforms for the
control of the COVID-19 pandemic. Albeit, vaccina-
tion stands as a practical strategy to prevent

Multiple columns

```
\documentclass[twocolumn]{article}  
\columnseprule=1mm
```

1 Introduction

unprecedented Unprecedented *eforts* OF the *re-searchers* have been witnessed in the recent past towards the development of vac- *cine platforms for the control of the COVID-19 pandemic*. Albeit, vaccination stands as a practical strategy to prevent

In light of the evidence ascertaining the potential of small molecule drugs.

```
\documentclass[twocolumn]{article}  
\columnseprule=0.5mm
```

1 Introduction

unprecedented Unprecedented *eforts* OF the *re-searchers* have been witnessed in the recent past towards the development of vac- *cine platforms for the control of the COVID-19 pandemic*. Albeit, vaccination stands as a practical strategy to prevent

In light of the evidence ascertaining the potential of small molecule drugs.

Multiple columns

```
\documentclass{article}
\usepackage{multicol}
\columnseprule = 0.5mm
\title{\textbf{\Huge Covid-19}}
\author{\textit{\scriptsize ahmed ali }}\textit{\small faculty of
computer and information} \textit{\footnotesize egypt}}
\date{\scriptsize october 14,2022}
\usepackage{color}
\begin{document}
\maketitle
```

In light of the ev- idence	ascertaining	the potential of small molecule drugs.
-------------------------------	--------------	---

```
\begin{multicols}{3}
In light of the evidence ascertaining the potential of small
molecule drugs.
\end{multicols}
\end{document}
```

Mini page

```
\documentclass[11pt,a4paper]{article}  
\usepackage{boxedminipage}  
\begin{document}
```

```
\begin{minipage}[t]{5.0cm}  
this is a mini page with a width 5.0 cm  
\end{minipage}
```

```
\begin{boxedminipage}[t]{5.0cm}  
this is boxedminipage with a width 5.0 cm  
\end{boxedminipage}
```

```
\begin{boxedminipage}[t]{0.5\linewidth}  
this is boxedminipage with a width 5.0 cm  
\end{boxedminipage}
```

```
\end{document}
```

this is a mini page with a
width 5.0 cm

this is boxedminipage with a
width 5.0 cm

this is boxedminipage with a width
5.0 cm

Foot notes

```
\documentclass[11pt,a4paper]{article}
\usepackage{boxedminipage}
\begin{document}

covid 19 \footnote{is disease}

\end{document}
```

covid 19 ¹

¹is disease

tables

```
\documentclass{article}
\usepackage{tabularx}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\ faculty of computers and information \\ egypt }
\begin{document}
\maketitle
```

```
\begin{table}[h]
\centering
\begin{tabular}{ccc}
item&qty & price \\
i1 & 2 & 30 \\
i2 & 3 & 100 \\
\end{tabular}
\caption{this is first example}\label{t1}
\end{table}
```

CCC تعنى تلت أعمدة ومحازاة الكلام داخل الخلية في المنتصف

← C:center , l:left , r:right

```
\end{document}
```

the first document by latex

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item	qty	price
i1	2	30
i2	3	100

Table 1: this is first example

Porters in tables

```
\documentclass{article}
\usepackage{tabularx}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\ faculty of computers and information \\egypt }
\begin{document}
\maketitle
\begin{table}[h]
\centering
\begin{tabular}{ccc}
\hline
item&qty & price \\
\hline
i1 & 2 & 30 \\
\hline
i2 & 3 & 100 \\
\hline
\end{tabular}
\caption{this is first example}\label{t1}
\end{table}
\end{document}
```

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item	qty	price
i1	2	30
i2	3	100

Table 1: this is first example

Porters in tables

```
\documentclass{article}
\usepackage{tabularx}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\ faculty of computers and information \\
egypt }
\begin{document}
\maketitle
\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
item&qty & price \\
\hline
i1 & 2 & 30 \\
\hline
i2 & 3 & 100 \\
\hline
\end{tabular}
\caption{this is first example}\label{t1}
\end{table}
\end{document}
```

the first document by latex

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item	qty	price
i1	2	30
i2	3	100

Table 1: this is first example


```

\documentclass{article}
\usepackage{tabularx}
\begin{document}

\begin{table}[h]
  \centering
  \begin{tabular}{|c|c|c|}
\hline
\multicolumn{3}{|c|}{table1} \\
\hline
item&qty & price \\
\hline
i1 & 2 & 30 \\
\hline
i2 & 3 & 100 \\
\hline
i2 & 3 & 100 \\
\hline
\end{tabular}
  \caption{this is first example}\label{t1}
\end{table}

\end{document}

```

table1		
item	qty	price
i1	2	30
i2	3	100
i2	3	100

Table 1: this is first example

لو عايزة اكتب مفاهيم رياضية بين الكلام بتكتب بين \$..... \$

this is math $\beta + \alpha = 1$ this is equation

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \ \ faculty of computers and information \ \ egypt }
\begin{document}
\maketitle
this is math  $\beta + \alpha = 1$  this is equation

\end{document}
```

the first document by latex

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this is math $\beta + \alpha = 1$ this is equation

لو عايز اكتب

`$ \sqrt{y^2} $`

$\sqrt{y^2}$

Super script

`$ m^{2} $`

m^2

`$ \sqrt[x]{y^2} $`

$\sqrt[x]{y^2}$

sub script

`$ \beta_{m} $`

β_m

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \ \ faculty of computers and information \ \ egypt }
\begin{document}
\maketitle
this is math  $\beta + \alpha = 1$  this is equation

 $m^2$ 
\\
 $\beta_m$ 
\end{document}
```

the first document by latex

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egypt

November 27, 2019

this is math $\beta + \alpha = 1$ this is equation

m^2

β_m

Equations

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\ faculty of computers and information \\ egypt}
\begin{document}
\maketitle

\begin{equation}
\beta + \alpha = 1
\end{equation}

\\

\begin{equation}
k = \sum_{k-i}^i
\end{equation}

\end{document}
```

the first document by latex

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egypt

November 27, 2019

$$\beta + \alpha = 1 \quad (1)$$

$$k = \sum_{k-i}^i \quad (2)$$

لو عايزة اعمل بسط ومقام

```
\begin{equation}
\frac{5x}{6y}
\end{equation}
```

```
\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \ \ faculty of computers and information \ \ egypt }
\begin{document}
\maketitle

\begin{equation}
\frac{5x}{6y}
\end{equation}

\end{document}
```

the first document by latex

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egypt

November 27, 2019

$$\frac{5x}{6y}$$

(1)

```

\documentclass{article}
\usepackage{color}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \ \ faculty of computers and information \ \ egypt }
\begin{document}
\maketitle

\begin{equation}\label{equation1}
k=\frac{5x}{6y}
\end{equation}

this is equation \ref{equation1} is definition to k
\\

\begin{equation}\label{equation2}
k1=\sum_{k-i}^i
\end{equation}

this is equation \ref{equation2} is definition to k1
\\

\end{document}

```

the first document by latex

ahmed ali
faculty of computers and information
egypt

November 27, 2019

$$k = \frac{5x}{6y} \quad (1)$$

this is equation 1 is definition to k

$$k1 = \sum_{k-i}^i \quad (2)$$

this is equation 2 is definition to k1

لو عايز استخدم رموز رياضية متقدمة بستخدم package `\usepackage{amsmath}`

`\begin{equation*}` علامة * بتشيل الترقيم للمعادلة
`\beta+\alpha=1`
`\end{equation*}`

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November 28, 2019

```
\documentclass{article}
\usepackage{color}
\usepackage{amsmath}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \ \ faculty of computers and information \ \ egypt }
\begin{document}
\maketitle

\begin{equation*}
\beta+\alpha=1
\end{equation*}

\begin{equation}
\beta+\alpha=1
\end{equation}

\end{document}
```

$$\beta + \alpha = 1$$

$$\beta + \alpha = 1$$

(1)

multiline لو عايزة اكتب معادلة

```
\begin{align*}
(x-1)^3=(x-1)(x-1)(x-1)\\
=(x^2-2x+1)(x-1)\\
=(x^3-2x^2+x-x^2+2x-1)\\
=x^3-3x^2+2x-1
\end{align*}
```

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\end{document}
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$$\begin{aligned}(x-1)^3 &= (x-1)(x-1)(x-1) \\ &= (x^2-2x+1)(x-1) \\ &= (x^3-2x^2+x-x^2+2x-1) \\ &= x^3-3x^2+2x-1\end{aligned}$$

علامة & عشان تخلق في محازاة في الكتابة (يبقوا تحت بعض)

```
\begin{align*}
(x-1)^3&=(x-1)(x-1)(x-1)\\
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split

```
\begin{equation} \label{eq1}  
\begin{split}  
A &= \frac{\pi r^2}{2} \\\br/>&= \frac{1}{2} \pi r^2  
\end{split}  
\end{equation}
```

$$\begin{aligned} A &= \frac{\pi r^2}{2} \\ &= \frac{1}{2} \pi r^2 \end{aligned} \tag{1}$$

figure

1-`\usepackage{graphicx}`

اتحكم في مكان الصورة (h – t – b – h! – b! – t!)

2-

`\begin{figure} [....]`

`\centering` عشان تبقى في المنتصف

اتحكم في حجم الصورة

بكتب مسار الصورة

`\includegraphics[width=.....]{.....}`

`\caption{....}`

بكتب عنوان الصورة او الكلام اللي ه يظهر تحت الصورة

`\label{.....}`

بكتب label عشان اعملها Reference

`\end{figure}`

example

```
\documentclass{article}
\usepackage{color}
\usepackage{amsmath}
\usepackage{graphicx}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\\ faculty of computers and information \\\ egypt }
\begin{document}
\maketitle

\begin{figure} [!h]
\centering

\includegraphics[width=0.50\textwidth]{n.jpg}

\caption{this is the first figure}

\label{fig1}
\end{figure}

\end{document}
```

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Figure 1: this is the first figure

اعمل reference للصورة

```
\documentclass{article}
\usepackage{color}
\usepackage{amsmath}
\usepackage{graphicx}
\title{the first document by latex}
\date{\today}
\author{ahmed ali \\\ faculty of computers and information \\\ egypt }
\begin{document}
\maketitle

\begin{figure}[!h]
\centering

\includegraphics[width=0.50\textwidth]{n.jpg}

\caption{this is the first figure}

\label{fig1}
\end{figure}
|
this is figure \ref{fig1} is dog

\end{document}
```

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Figure 1: this is the first figure

this is figure 1 is dog

Sub_figure

```
\usepackage{caption}
\usepackage{subcaption}

\begin{figure}[!h]
  \centering
    \begin{subfigure}[!h]{0.45\columnwidth}
      \includegraphics[width=\textwidth]{n.jpg}
      \caption{this is 1 subfigure}
      \label{sfig1}
    \end{subfigure}
    ~
    \begin{subfigure}[!h]{0.45\columnwidth}
      \includegraphics[width=\textwidth]{m.jpg}
      \caption{this is 2 subfigure}
      \label{sfig2}
    \end{subfigure}
  \caption{a is experiment ,b is result}
\end{figure}
```



(a) this is 1 subfigure



(b) this is 2 subfigure

Figure 1: a is experiment ,b is result

علامة ~ عشان الصورتين يبقوا جنب بعض

Sub_figure

```
\documentclass[twocolumn]{article}
```

```
\usepackage{graphicx}
```

```
\usepackage{caption}
```

```
\usepackage{subcaption}
```

```
\begin{document}
```

```
\begin{figure}[!h]
```

```
\centering
```

```
\begin{subfigure}[!h]{0.45\columnwidth}
```

```
\includegraphics[width=\textwidth]{n.jpg}
```

```
\caption{this is 1 subfigure}
```

```
\label{sfig1}
```

```
\end{subfigure}
```

سيبت سطر عشان الصورتين يبقوا تحت بعض

```
\begin{subfigure}[!h]{0.45\columnwidth}
```

```
\includegraphics[width=\textwidth]{m.jpg}
```

```
\caption{this is 2 subfigure}
```

```
\label{sfig2}
```

```
\end{subfigure}
```

```
\caption{a is experiment ,b is result}
```

```
\end{figure}
```

```
\end{document}
```



(a) this is 1 subfigure



(b) this is 2 subfigure

Figure 1: a is experiment ,b is result

```
\documentclass[twocolumn]{article}
```

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November 28, 2019

1 wellcome

fire fire fire fire fire fire fire nice to meet you nice
to meet you nice to meet you nice to meet you nice
to meet you nice to meet you nice to meet you nice
to meet you nice to meet you this is figure 1 is dog



Figure 1: this is the first figure

 x_{23} [illegible]

2.1 intro1

$$\omega_i = \sum_{k=i}^i \beta_k \quad (1)$$

2 introduction

hello *latex*!

$\omega = 25$ this is math $\alpha + \beta = 1\theta$ this is math law
 nice to meet you nice to meet you nice to meet you
 nice to meet you nice to meet you nice to meet you
 nice to meet you ...
 $(x+1)^2 = x^2 + 2x + 1$

$$\omega_i = \sum_{k=i}^i \beta_k$$

 x^{23}

اكتب عربى

```
\documentclass{article}
```

```
\usepackage{arabtex}
```

```
\usepackage{utf8}
```

```
\begin{document}
```

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

```
\setcode{utf8}
```

```
\begin{arabtext}
```

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

```
\end{arabtext}
```

```
\end{document}
```

citation

1-بعمل ملف امتداد **.bib**
الملف دا في تفاصيل عن reference

دا Key اللى هستخدمه بأستخدامه



```
@article{centenaro2016long,  
  title={Long-range communications in unlicensed bands: The rising stars in the IoT and smart city scenarios},  
  author={Centenaro, Marco and Vangelista, Lorenzo and Zanella, Andrea and Zorzi, Michele},  
  journal={IEEE Wireless Communications},  
  volume={23},  
  number={5},  
  pages={60--67},  
  year={2016},  
  publisher={IEEE}  
}
```

`\usepackage{cite}` يستخدم package دا

This is reference `\cite{key_name}` عشان استدعيه بكتب الامر دا

`\bibliographystyle{style}` دا طريقة الترقيم ل references

`\bibliography{file}` دا اسم الملف اللي انا حاطة في التفاصيل

example

references.bib

```
@article{centenaro2016long,  
  title={Long-range communications in unlicensed bands: The rising stars in the IoT and smart city scenarios},  
  author={Centenaro, Marco and Vangelista, Lorenzo and Zanella, Andrea and Zorzi, Michele},  
  journal={IEEE Wireless Communications},  
  volume={23},  
  number={5},  
  pages={60--67},  
  year={2016},  
  publisher={IEEE}  
}
```

```
@article{gubbi2013internet,  
  title={Internet of Things (IoT): A vision, architectural elements, and future directions},  
  author={Gubbi, Jayavardhana and Buyya, Rajkumar and Marusic, Slaven and Palaniswami, Marimuthu},  
  journal={Future generation computer systems},  
  volume={29},  
  number={7},  
  pages={1645--1660},  
  year={2013},  
  publisher={Elsevier}  
}
```

```
\documentclass{article}
```

```
\usepackage{cite}
```

```
\begin{document}
```

```
\section{introduction}
```

this is introduction this is introduction this is introduction this is introduction this is introduction the work is in `\cite{centenaro2016long}`

this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction this is introduction

```
\section{conclusion}
```

this is conclusion this is conclusion this is conclusion this is conclusion this is conclusion the work is in `\cite{gubbi2013internet}`

this is conclusion this is conclusion this is conclusion this is conclusion this is conclusion this is conclusion this is conclusion this is conclusion this is conclusion

```
\bibliographystyle{plain}
```

```
\bibliography{references}
```

```
\end{document}
```

1 introduction

this is introduction this is introduction this is introduction this is introduction
this is introduction the work is in [1] this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction
this is introduction this is introduction this is introduction this is introduction

2 conclusion

this is conclusion this is conclusion this is conclusion this is conclusion this is
conclusion the work is in [2] this is conclusion this is conclusion this is conclusion
this is conclusion this is conclusion this is conclusion this is conclusion this is
conclusion this is conclusion this is conclusion

References

- [1] Marco Centenaro, Lorenzo Vangelista, Andrea Zanella, and Michele Zorzi. Long-range communications in unlicensed bands: The rising stars in the iot and smart city scenarios. *IEEE Wireless Communications*, 23(5):60–67, 2016.
- [2] Jayavardhana Gubbi, Rajkumar Buyya, Slaven Marusic, and Marimuthu Palaniswami. Internet of things (iot): A vision, architectural elements, and future directions. *Future generation computer systems*, 29(7):1645–1660, 2013.

Thank you