TPT1201
Research Methodology

Lab 5

By completing the tutorial, you should be able to:

- define the differences between article, report, book, and letter document-classes
- create bibliography and citation
- create and differentiate Itemize, Enumerate, and Description
- using Flushleft, Flushright, and Center

Exercise 1
Type the following code:

```
Article Name:
Social Network Analysis: A Model of User Preference

Abstract:
Social Network Analysis can be very important for
companies mainly because it allows hidden patterns
of users to be revealed. However, extracting hidden
patterns is not a trivial work. Therefore, this research
work proposes a new way of presenting
user models via Bayesian Networks.


Author: tcy
```

Sample solution:

```
\documentclass{article}
\title{Social Network Analysis:
A Bayesian Model of User Preference}
\author{Choo-Yee Ting}
\date{}
\begin{document}
\maketitle
\abstract{Social Network Analysis can be very important for
companies mainly because it allows hidden patterns
of users to be revealed. However, extracting hidden
patterns is not a trivial work. Therefore, this research
work proposes a new way of presenting
user models via Bayesian Networks.}
\end{document}
```

Note: After typing the code, generate the PDF and observe the output.

Exercise 2
Type the following code:

```
Create the following sections:
1. Introduction
Social Network Analysis has recently gained attention by
both companies and researchers.
Various techniques have been introduced...
1.1 Research objectives
The research work reported in this article has the
following objectives:
2. Related Work
2.1 What is a Bayesian Network?
3. Data Analysis
3.1 Data Analysed using R
4. Conclusion
```

To reflect the above information into your article, you need to type the following codes immediately after the `\abstract{...}` section. Generate the PDF and observe the output.

Type the following code:

```
\section{Introduction}
Social Network Analysis has recently gained attention by
both companies and researchers.
Various techniques have been introduced...
\subsection{Research Objectives}
The research work reported in this article has the
following objectives:
\section{Related Work}
\subsection{What is a Bayesian Network?}
\section{Data Analysis}
\subsection{Data Analysed using R}
\section{Conclusion}
```

Exercise 3

Extend the article you created in Exercise 2 to generate a table of contents. All you need to do is to insert a line of code right after `\begin{document}`. Type the following code:

```
\tableofcontents
```

Exercise 4

Change the document type to "Report". All you need to do is to change the word article in the line `\documentclass{article}` to report in `\documentclass{report}`. Type the following code:

```
\documentclass{report}
```

Exercise 5

In this exercise, you will go through the process of inserting citation and preparing references.

(a) Create a new BibTeX file and name it "myBib.bib". Type the following codes:

```
@article{ting,
author = {Ting, Choo-Yee and Ho, Chiung Ching and Yee,
Hui-Jia and Matsah, Wan},
year = {2018},
month = {03},
pages = {42-52},
title = {Geospatial Analytics in Retail Site Selection
and Sales Prediction},
volume = {6},
journal = {Big Data},
doi = {10.1089/big.2017.0085}
}

@article{haw,
  author     = {Samini Subramaniam and
                 Su{-}Cheng Haw and
                 Lay{-}Ki Soon and
                 Kok{-}Leong Koong},
  title      = {QTwig: {A} Structural Join Algorithm for
                 Efficient Query Retrieval
                 Based on Region-Based Labeling},
  journal    = {International Journal of Software
                 Engineering and Knowledge Engineering},
  volume     = {27},
  number     = {2},
  pages      = {321},
  year       = {2017},
  url        = {https://doi.org/10.1142/S0218194017500115},
  doi        = {10.1142/S0218194017500115}
}
```

(b) Create a new tex file and name it "myArticle.tex". Type the following codes:

```
\documentclass[a4paper]{article}
\usepackage{framed}
\usepackage{graphicx}
\usepackage{hyperref}
\usepackage[margin=2.5cm]{geometry}
\usepackage{apacite}
\begin{document}
\title{Research Methodology}
\author{\textbf{Choo-Yee Ting}\\
Faculty of Computing \& Informatics\\
Multimedia University, Malaysia}
\date{}
\maketitle
There are many research works that employed
analytics for retail. One of them is a work
reported in \citeA{ting}.
A study by \citeA{haw} has reported that XML can be very
useful in solving real-world problems.
\bibliographystyle{apacite}
\bibliography{myBib}{}
\end{document}
```

(c) Press "Recompile" button to see the output.

Exercise 6

Do the following changes to the above code:

(a) remove \usepackage{apacite}
(b) change \bibliographystyle{apacite} $\rightarrow$ \bibliographystyle{plain}

Exercise 7

Type the following code:

```
These are the things I need to buy:
\begin{itemize}
\item one MacBook Air
\item one Samsung LED television
\item one Logitech wireless mouse
\item one HP workstation
\item one Sony Play Station
\end{itemize}
```

Exercise 8

Now, introduce the command \setlength{\itemsep}{-5pt}.
Modify accordingly:

```
These are the things I need to buy:
\begin{itemize}
\setlength{\itemsep}{-5pt}
\item one MacBook Air
\item one Samsung LED television
\item one Logitech wireless mouse
\item one HP workstation
\item one Sony Play Station
\end{itemize}
```

Exercise 9

Do the following changes to the \item:

```
\begin{itemize}
 \setlength{\itemsep}{-5pt}
 \item[-] one MacBook Air
 \item[-] one Samsung LED television
 \item[-] one Logitech wireless mouse
 \item[-] one HP workstation
 \item[-] one Sony Play Station
 \end{itemize}
```

Exercise 10

Do the following changes to the \item:

```
\begin{itemize}
\setlength{\itemsep}{-5pt}
\item[-] one MacBook Air
\item[+] one Samsung LED television
\item[\&] one Logitech wireless mouse
\item[*] one HP workstation
\item[\#] one Sony Play Station
\end{itemize}
```

Exercise 11

If you want to use (a),(b),(c)...etc, you should firstly include the package named "enumerate". That is, before \begin{document}, add this line \usepackage{enumerate}.

```
These are the things I need to buy:
\begin{enumerate}[(a)]
\item one MacBook Air
\item one Samsung LED television
\item one Logitech wireless mouse
\item one HP workstation
\item one Sony Play Station
\end{enumerate}
```

Exercise 12

You can further customise the itemize by using \begin{description}

```
\begin{description}
\setlength{\itemsep}{-5pt}
\item[Mac] one MacBook Air
\item[TV] one Samsung LED television
\item[Mouse] one Logitech wireless mouse
\item[PC] one HP workstation
\item[Game] one Sony Play Station
\end{description}
```

Exercise 13

You can further customise the itemize by the \begin{description}:

```
These are the things I need to buy:
  \begin{description}
      \item[Laptop] \hfill \\ one MacBook Air
      \item[TV] \hfill \\ one Samsung LED television
      \item[Mouse] \hfill \\ one Logitech wireless mouse
      \item[Workstation] \hfill \\  one HP workstation
      \item[Game] \hfill \\  one Sony Play Station
```

```
    \end{description}
```

Exercise 14
Try the command `flushleft` and `flushright`

```
\begin{flushleft}
This text is\\ left-aligned.
\LaTeX{} is not difficult to learn. \\
It should be comfortable for all IT and CS students!
\end{flushleft}
```

```
\begin{flushright}
This text is\\ right-aligned.
\LaTeX{} is not difficult to learn. \\
It should be comfortable for all IT and CS students!
\end{flushright}
```

Exercise 15
Try the following codes for "Quote".

```
 Social media plays an important role in spreading
news about certain events. For example,
\begin{quote}
``Listen, Listen, Listen, Listen, Listen, and
Listen to me first! I am the client and you are
just a salesperson. So, I have the right to speak first!"
\end{quote}
So, what to do, the salesperson has to \emph{Listen} to the
client. We need to learn the
skill \emph{Listening} to others.
```