LaTeX Technical Report

Team	Autumn, 2022
Module	**EE1616 Electronics Workshop**
Class	34092102
Brunel ID	2161047
CQUPT ID	2021215069
Name	Xukang Liu
Tutor	Zhipeng Wang

1. Task 1-1

This is the result: it includes title, author, and section
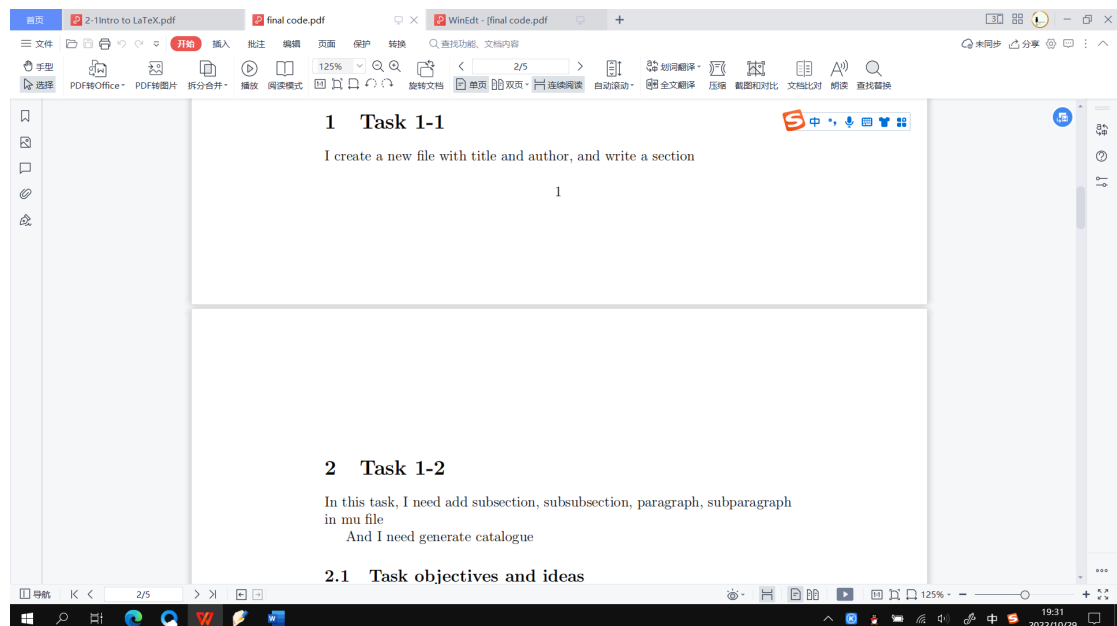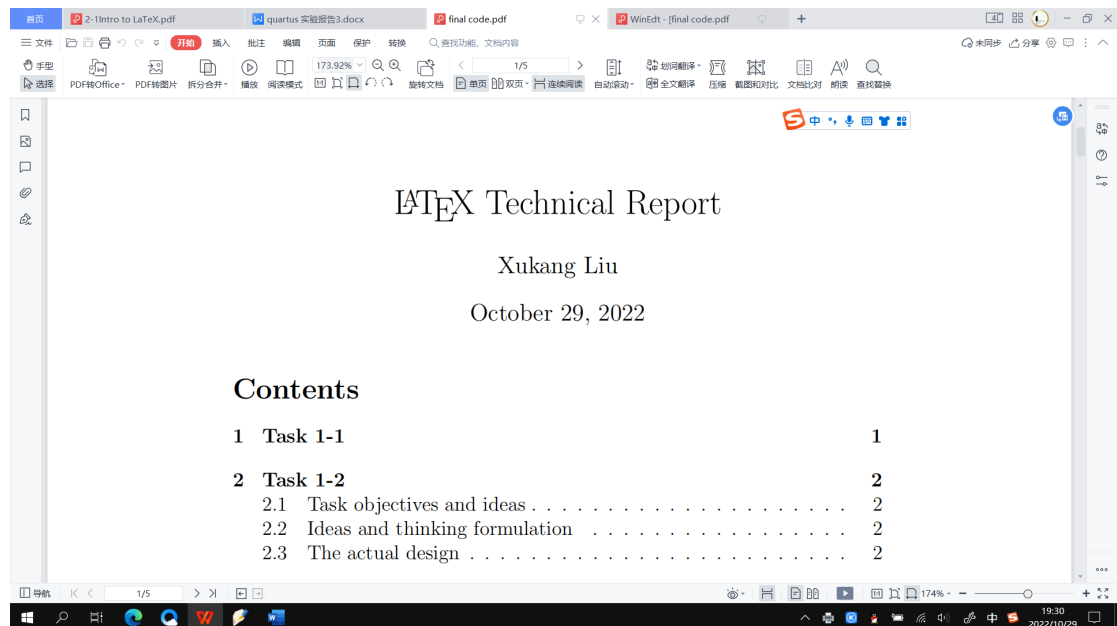
This is my code:

```latex
\documentclass[12pt]{article}
\usepackage{latexsym,amssymb,amsmath,amsfonts}
\usepackage{graphicx}
\begin{document}

\title{\LaTeX\ Technical Report}
\author{Xukang Liu} \date{\today}
\maketitle
\tableofcontents
\section{Task 1-1}
I create a new file with title and author, and write a section
\section{Task 1-2}
\par In this task, I need add subsection, subsubsection, paragraph, subparagraph in mu file
\par And I need generate catalogue
\subsection{Task objectives and ideas}
\subsection{Ideas and thinking formulation}
\paragraph{ According to the aims we have learned during the classes could understand the diversity, functionality, practicality, and
security of the current home security system.}
\subparagraph{1. System configurations with password protection.
2. Setting security zones.
3. Choosing the active and inactive zones which have chosen in function 2.
4.The buzzer start work when the security zones are invaded.
5. Using password to disarm the alarm.}
\subsection{The actual design}
\paragraph{Through the specific discussion and analysis, we have mentioned about the task in the 2.1, we have obtained the goal and research
direction of this task. Now let us introduce to you about the specific function of this machine. Or it is better to call it a product
description.}
\section{Task 1-3}
```

2. Task 1-2

This is the result: it includes subsection, subsubsection, paragraph, subparagraph. And I generate a catalogue.

October 29, 2022

Contents
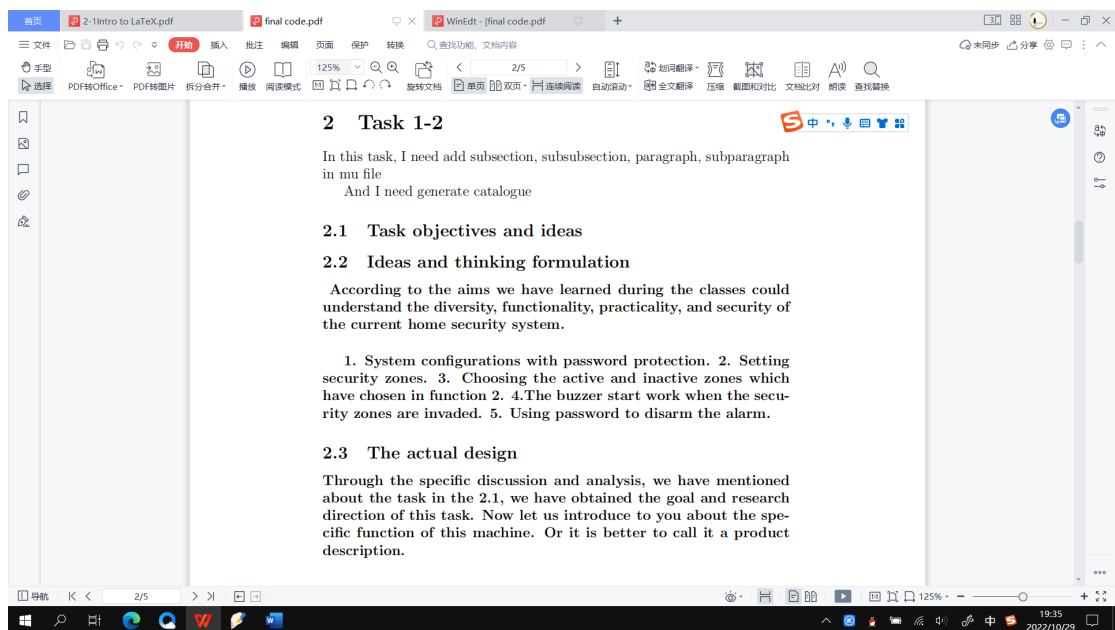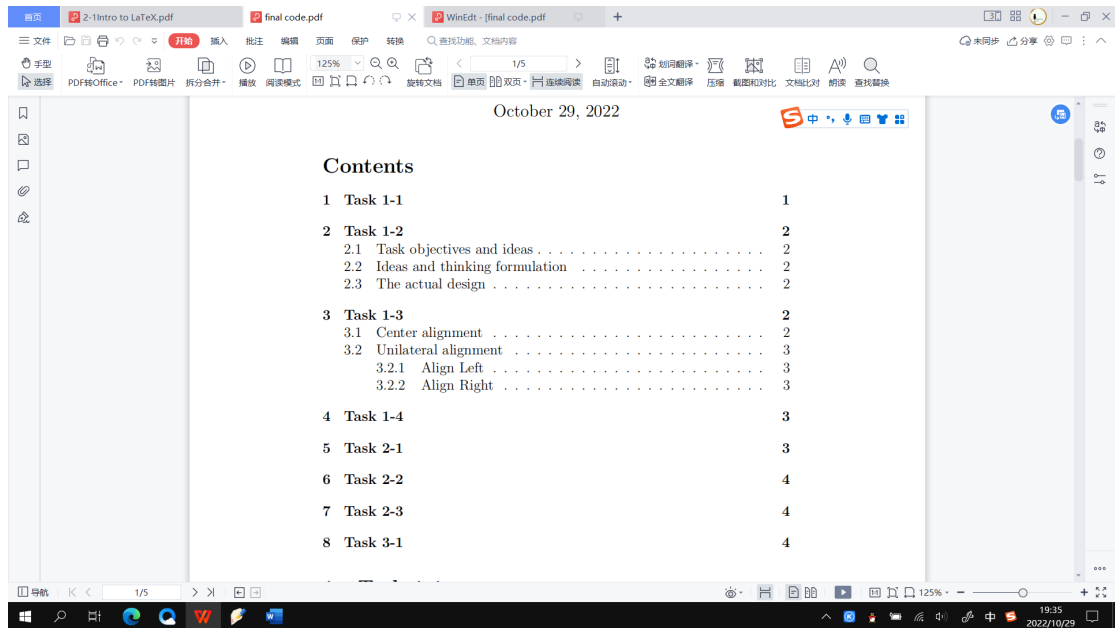
The three different section patterns. "Section" likes first level title.

"subsection" likes second level title and "subsubsection" likes third level title. There is a logical relationship between the three commands.

In "paragraph", the size of the letter is bigger than the text, and the font is bold.
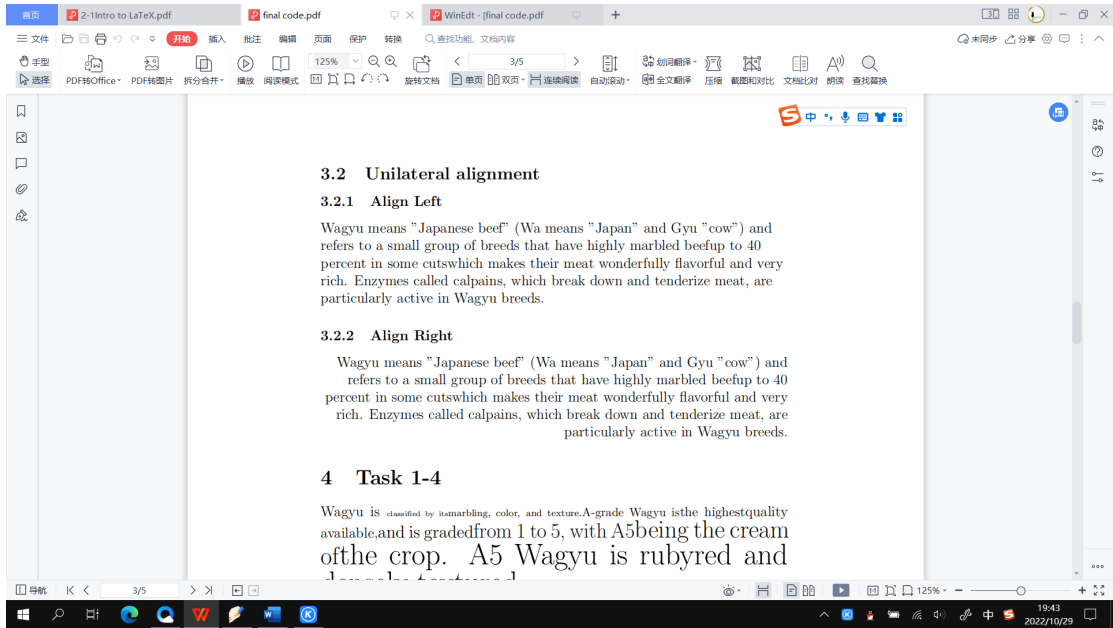
This is the code:

```
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description.}

\section{Task 1-3}
I need use paragraph typeset
\subsection{Center alignment}
\begin{center}
Wagyu means "Japanese beef" (Wa means "Japan" and Gyu "cow") and refers to a small group of breeds that have highly marbled beef--up to 40
percent in some cuts--which makes their meat wonderfully flavorful and very rich. Enzymes called calpains, which break down and tenderize
meat, are particularly active in Wagyu breeds.
\end{center}
```
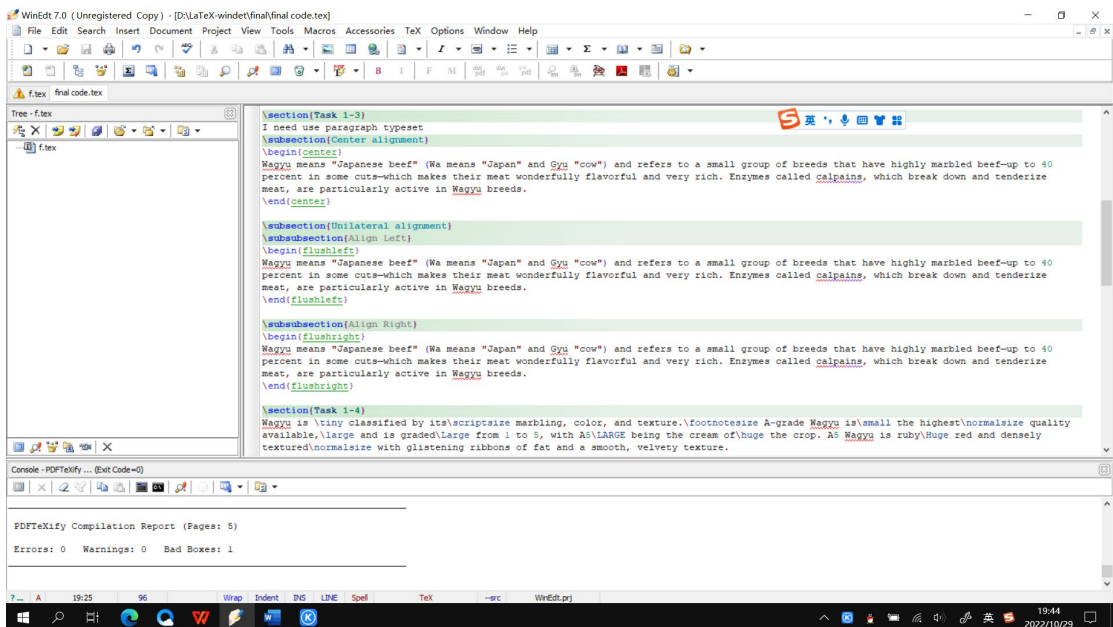
3. Task 1-3
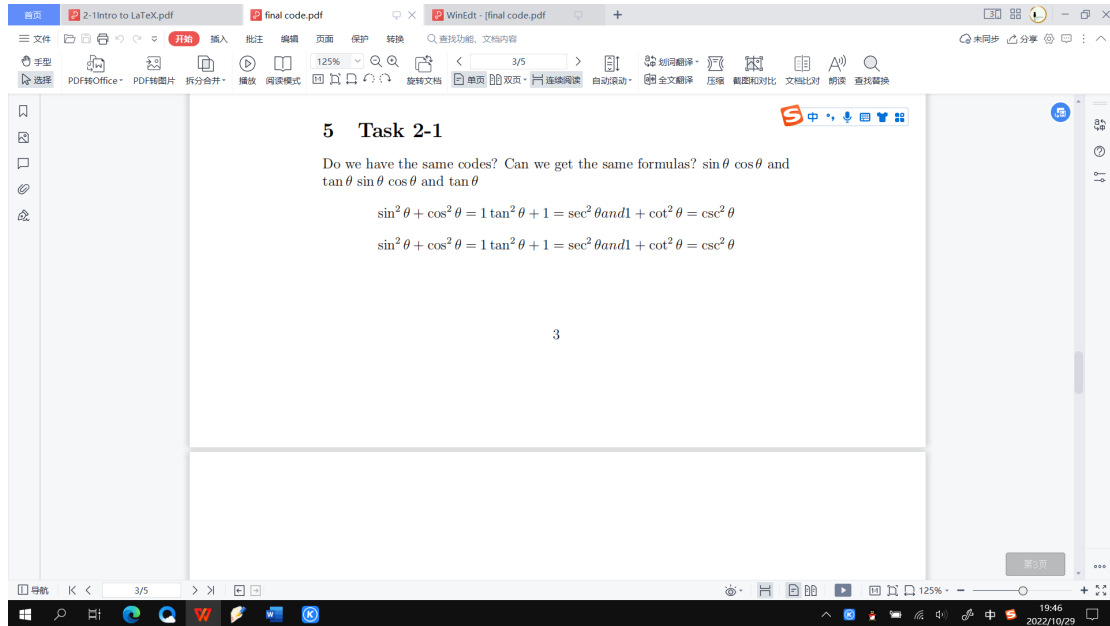
This is my result, and the text is in different alignment.
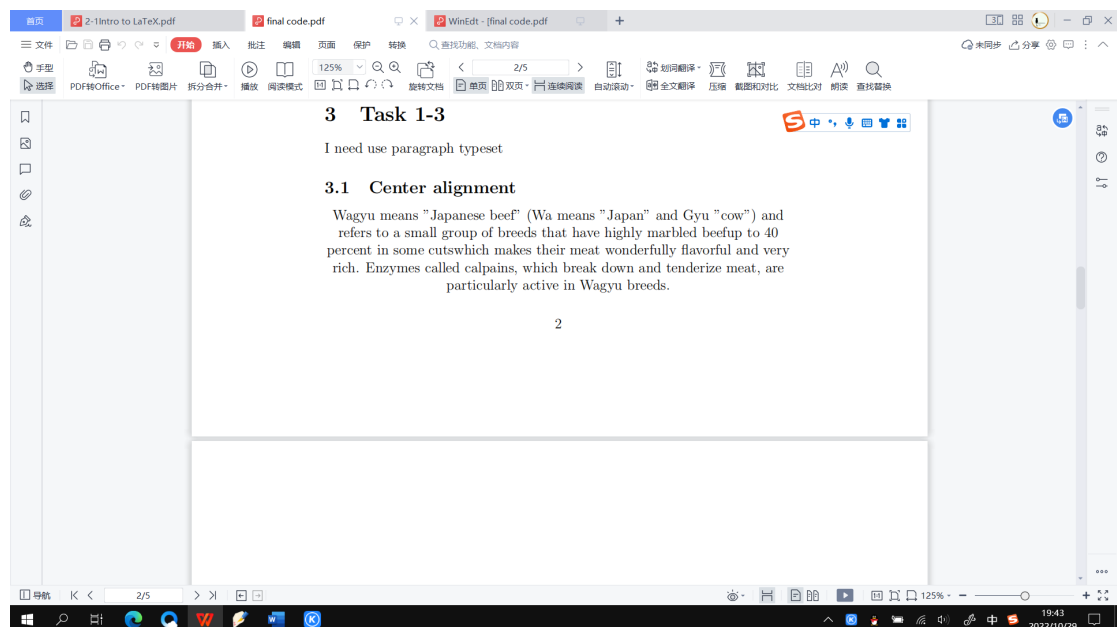
This is my code:

4. Task 1-4

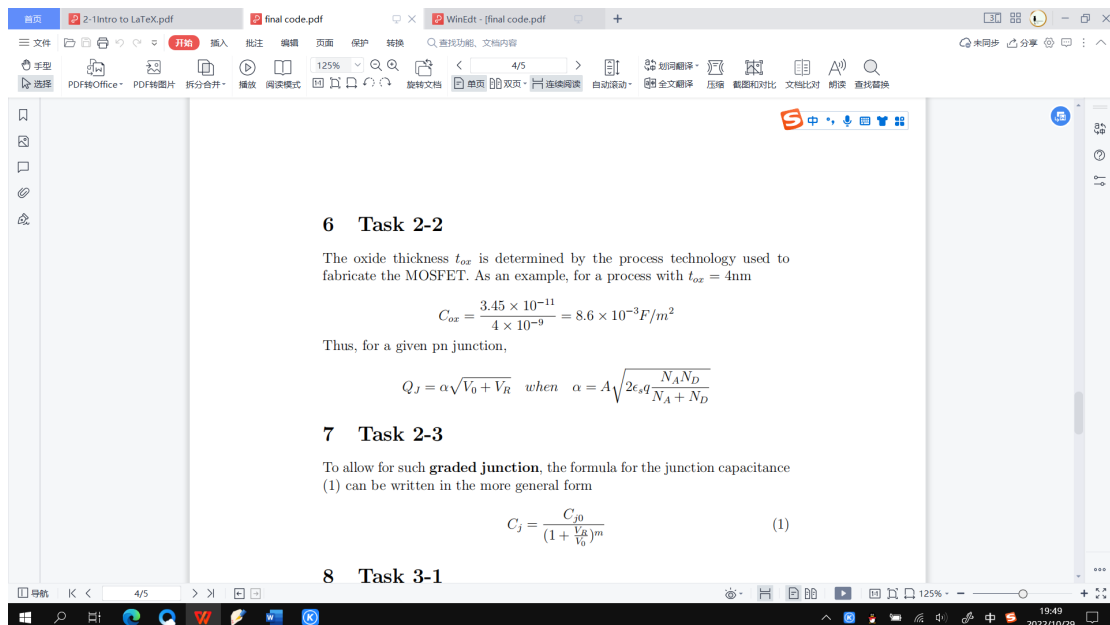I need change the size of my document; this is the result:

This is my code:

5. Task 2-1

The two lines have the same formula, but they don't have same codes.

The first line uses "inline" and the second uses "display".

6. Task 2-2

This is my result:

This is my codes:

```
1 + \cot^2\theta = \csc^2\theta
\]
$display

\section{Task 2-2}
The oxide thickness $t_{ox}$ is determined by the process technology used to fabricate the MOSFET.
As an example, for a process with $t_{ox}$ = 4nm

\[C_{ox}=\frac{3.45 \times 10^{-11}}{4\times 10^{-9}}=8.6\times 10^{-3} F/m^2 \]
Thus, for a given pn junction,
\[Q_J =\alpha \sqrt{V_0+V_R}\quad when\quad \alpha=A \sqrt{2\epsilon_s q \frac{N_A N_D}{N_A+N_D}} \]

\section{Task 2-3}
```
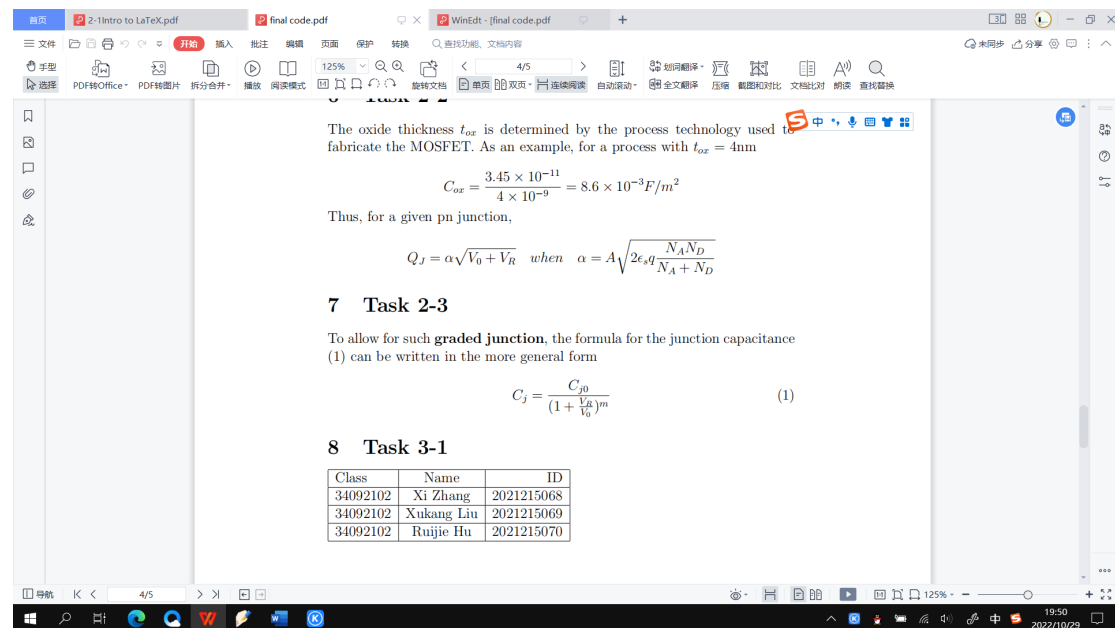
7. Task 2-3

In this task, I need add equation number. This is my result:
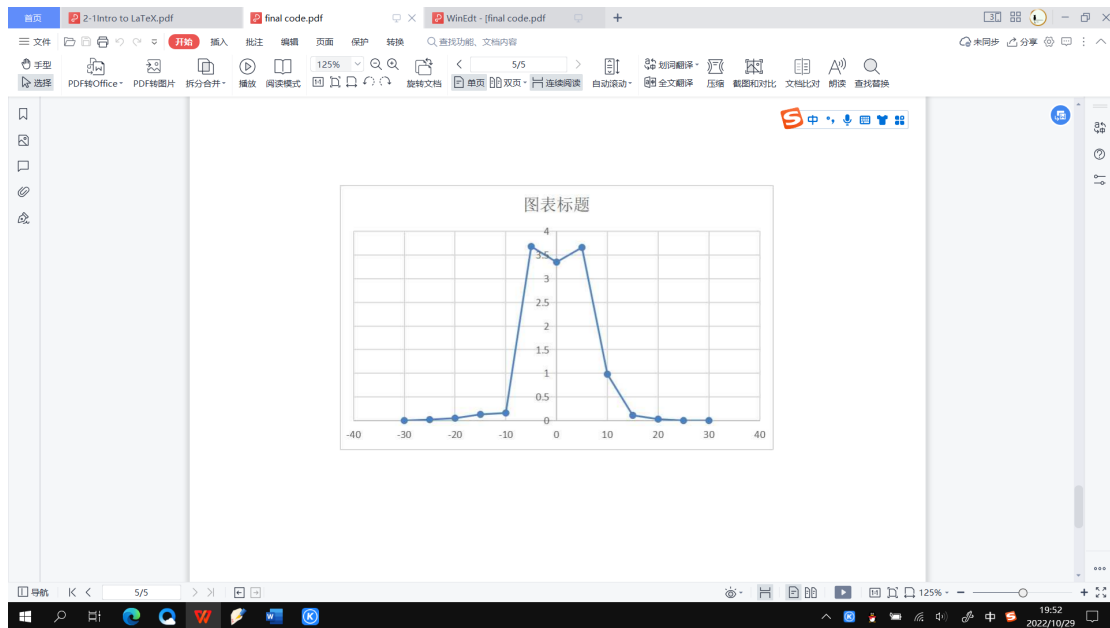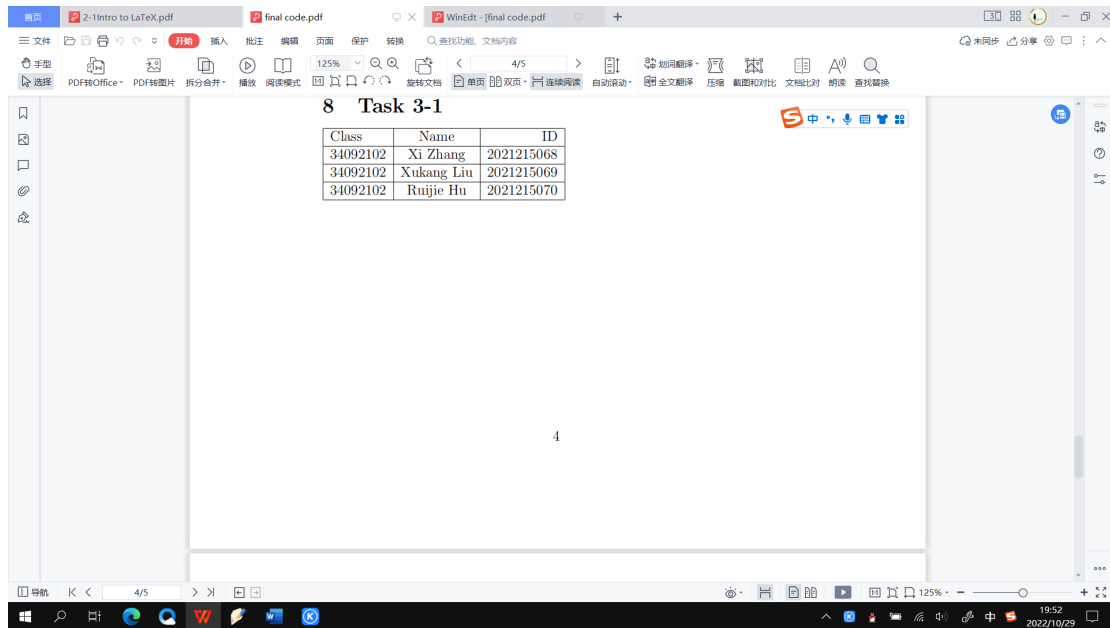

This is my codes:


```
\section{Task 2-3}

To allow for such \textbf{graded junction}, the formula for the junction capacitance \eqref{eq:basic-trig-ids} can be written in the more
general form
\begin{equation}
C_j= \frac{C_{j0}}{(1+\frac{V_R}{V_0})^m}
\label{eq:basic-trig-ids}
\end{equation}

\section{Task 3-1}
\begin{tabular}{|l|c|r|}
```

8. Task 3-1

In this task, I need add table and figure. This is my result:

8 Task 3-1

Class	Name	ID
34092102	Xi Zhang	2021215068
34092102	Xukang Liu	2021215069
34092102	Ruijie Hu	2021215070

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图表标题

This is my codes:

```
\end{equation}

\section{Task 3-1}
\begin{tabular}{|l|c|r|}
\hline
Class & Name & ID\\
\hline
34092102 & Xi Zhang & 2021215068 \\
\hline
34092102 & Xukang Liu & 2021215069\\
\hline
34092102 & Ruijie Hu & 2021215070\\
\hline
\end{tabular}

\begin{center}
\includegraphics[scale=1]{fig1.jpg}
\end{center}
\end{document}
```

Please note that my pictures are in the same folder as ". Tex"

9. Task 3-2

Finish your document，that should contains all the results of tasks from section1 and section2.

10. Conclusion

In this lecture, I familiar with "winedt", and know about what LaTeX is. With this software, I can more easily compile my documents and input mathematical formulas. This software has a very powerful character compilation ability, which can facilitate my future writing.

However, this is my first time to use the software. So, I can't skillfully apply some codes and functions in this software. After lecture, I need to spend some time to master these operations.