PROBLEMS I FACED WHILE USING LATEX AND THEIR SOLUTIONS

1. Using two images side by side and labeling them respectively. I was unable to do this because of my lack of experience using latex, I had to put the images together and use image editors for it until I found a way by using the "**\subfloat**" command with the "**\includegraphics**" command within a "**\begin{figure}** and **\end{figure}**" command, this way I will be able to put to images side by side and labeling each of respectively. As shown below.

```
\begin{figure}
    \centering
    \subfloat[]{\includegraphics[ width=7cm]{IR2110dip.png}}
    \vspace{1cm}
    \subfloat[]{\includegraphics[ width=7cm]{ir2110pic.jpg}}
    \caption{IR2110 MOSFET Driver  (a) Pin configuration (b) DIP chip}
    \label{fig:dip1}
\end{figure}
```

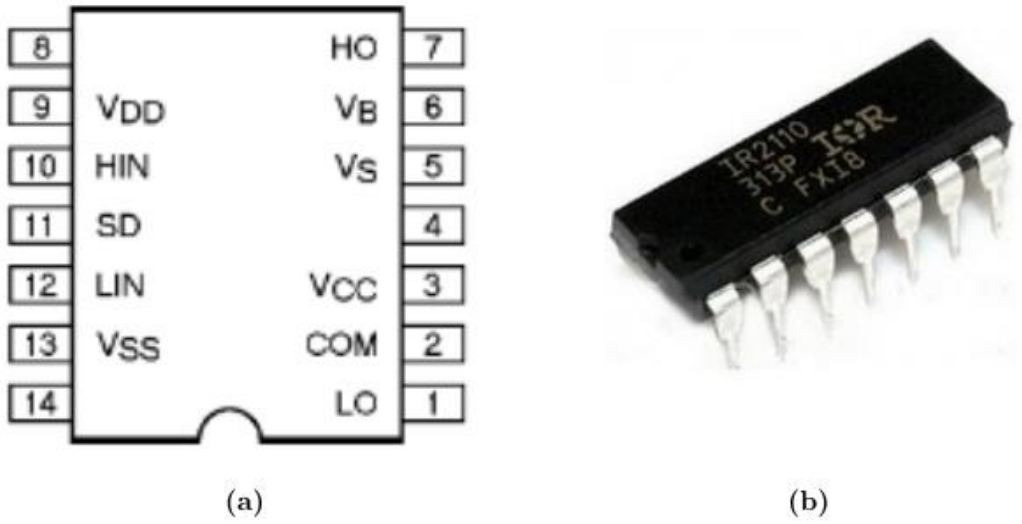

Figure 3.2: IR2110 MOSFET Driver (a) Pin configuration (b) DIP chip

2. Clearing a page so that it will only contain an image like you told us to in the guideline you sent to us, I found two commands that can be used. To enter a new page I used the "**/newpage**" command and to clear a page for it to contain only an image I use "**/clearpage**" command.

3. Writing the symbol of measurement and mathematical equation symbols like delta, micro, nano, or hertz etc. I use the mathematical command e.g., for micro I use "**\mu**" command.

```
\paragraph{Mode I (Switch is ON, Diode is OFF):}
When the Switch is ON as shown is Figure \ref{fig:boost2} and therefore represents a short circuit ideally offering zero
resistance to the flow of current so when the switch is ON all the current will flow through the switch and back to the DC
input source. assuming the switch is turned ON for a time \(  T_{ON} \) and is off for a time \(  T_{OFF} \). We define the
time period, T as
\[ T = T_{ON} + T_{OFF} \] and the switching frequency, \[ f_{switching} = \dfrac{1}{T} \]
The Duty cycle is defined as:
\[ D = \dfrac{T_{ON}}{T} \]
Using KVL to analyse the boost converter in steady state we have:
\[ V_{in} = V_{L}\]
\[ V_{L} = L\dfrac{di_{L}}{dt} = V_{in} \]
\[ \dfrac{di_{L}}{dt} = \dfrac{\Delta i_{L}}{\Delta t} = \dfrac{\Delta i_{L}}{DT} = \dfrac{V_{in}}{L}\]
since the switch is closed for a time \( T_{ON} = DT\) we can say that \( \Delta t = DT \)
\[ (\Delta i_{L})_{closed} = (\dfrac{V_{in}}{L})DT \]
```

$$T = T_{ON} + T_{OFF}$$

and the switching frequency,

$$f_{switching} = \frac{1}{T}$$

The Duty cycle is defined as:

$$D = \frac{T_{ON}}{T}$$

Using KVL to analyse the boost converter in steady state we have:

$$V_{in} = V_L$$

$$V_L = L\frac{di_L}{dt} = V_{in}$$

$$\frac{di_L}{dt} = \frac{\Delta i_L}{\Delta t} = \frac{\Delta i_L}{DT} = \frac{V_{in}}{L}$$

since the switch is closed for a time $T_{ON} = DT$ we can say that $\Delta t = DT$

$$(\Delta i_L)_{closed} = (\frac{V_{in}}{L})DT$$

4. Referencing appropriately, I didn't know how to go about referencing or citing at first when i started using latex, I later discovered that I could use Mendeley for importing each article or report I used during my research and generate a bib file that can be imported by tex studio for referencing and citing then use "/citep{authorname}" command to cite.

```
:ompliant and comfortabl
;). \cite{Wu2020}
```

}). Wu et al. (2020)

5. Generating a reference page, I can’t fully remember how I solved this, but I think I edited my latex document settings and added bibliography and use the “/addToPDFBookmarks{1}{References}{i}” to generate the reference page.

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% Reference  %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\bibliographystyle{agsm}
\setcitestyle{authoryear,open={(},close={)}}
\addToPDFBookmarks{1}{References}{i}
\addcontentsline{toc}{chapter}{References}
\bibliography{references/collection.bib}        % references.bib
```

REFERENCES

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