Rajesh Notes

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My Shortcut Command

1. To make new notes in $< name >$.tex format, just type "lf>file" without extension.
2. To open file in vim directory at XXX/Nts and make changes to already created tex file just type "vin $< file >$". To see the pdf version just type "vip $< file >$"
3. To run latex file in any directory just type "plo $< file >$". Make sure gar folder is created in that directory.

Terminal Command

1. To find and replace in vim

   ```
   :%s/old/new/g
   Some special characters like \, * should be given with backslash \
   ```

2. To search for the path of executable

   ```
   brew --prefix djvulibre
   ```

3. Git shortcuts

   ```
   alias.s=status
   alias.ac=commit -a -m
   alias.sw=switch
   alias.l=log --oneline
   alias.br=branch
   ```

4. To make pdf from a djvu file

```
ddjvu -format=tiff input.djvu output_prefix
convert output_prefix output.pdf
```

-**PBM/PGM/PPM** formats: grayscale and color images and to maintain image quality and clarity. **TIFF**: for high-quality images and for lossless compression. **PDF**: interested in preserving document structure, text, and images together.

5. Arithmetic operation equivalence say(s1=s2) for two variable num1 and num2

```
s1=$((num1 + num2))
s2=$(expr $num1 + $num2)
```

6. Conditionals in bash

```
#!/bin/bash

if [ condition ]; then
    # Code to execute if the condition is true
else
    # Code to execute if the condition is false
fi
```

7. For Loops in bash

```
for variable in sequence
do
    # Commands to be executed
done
---------
for i in {1..5}
do
    echo $i
done
```

8. while loop in bash

```
while condition
do
    # Commands to be executed
done
----------
num=1
while [ $num -le 5 ]
do
    echo $num
    num=$((num + 1))
done
```

Git Commands

To push to the cloud use the command given below

`git remote set-url origin https://<token_key>@github.com/<username>/<branch>`

then type the following command

`git push origin main`

Make sure you have initialize the git in your local pc and is in main branch.

1. Initializing a new local Git repository:

   `Command: git init`

2. Checking the status of the repository:

   `Command: git status`

3. Viewing the commit history:

   `Command: git log`

4. Cloning a repository from a remote source:

   `Command: git clone [remote_repository_url]`

5. Staging changes for commit:

```
Command: git add .
```

6. Committing changes:

```
Command: git commit -m "commit_message"
```

7. Managing branches:

```
Command: git branch
Command: git switch <branch_name>
```

8. Switching between branches:

```
Command: git checkout
```

9. Merging branches:

```
Command: git merge
```

10. Stashing changes:

```
Command: git stash
Command: git stash pop
Command: git stash apply
```

11. Reverting commits:

```
Command: git revert <commit_id>
```

12. Viewing differences between files or commits:

```
Command: git diff
Command: git diff --staged
Command: git diff <ref1> <ref2>
```

13. Creating and managing .gitignore file: (Create a .gitignore file in the repository's root directory and list the filenames or patterns of files to ignore.)

14. Deleting a branch completely:

```
Command: git branch -D <branch_name>
```

15. Creating command aliases:

```
Command: git config --global alias.<short_name> <command>
```

16. Viewing all aliases:

```
Command: git config -l | grep alias
```

Mathematica Plot

```
Plot[{\[Xi][n = 0], \[Xi][n = 1], \[Xi][n = 2], x^2/10}, {x, -4, 4},
 PlotRange -> Full,
 PlotLegends ->
  Placed[{TraditionalForm[Row[{HoldForm[n = 0]}]],
    TraditionalForm[Row[{HoldForm[n = 1]}]],
    TraditionalForm[Row[{HoldForm[n = 2]}]], "V(x)"}, {0.7, 0.8}],
 PlotStyle -> {Red, Blue, Brown, {Thickness[0.01], Black}},
 PlotTheme -> "Scientific", Axes -> True,
 AxesLabel -> {"x", "\[Psi](x)"}]
```

Latex Command

1. Table format, equation size, subsection color

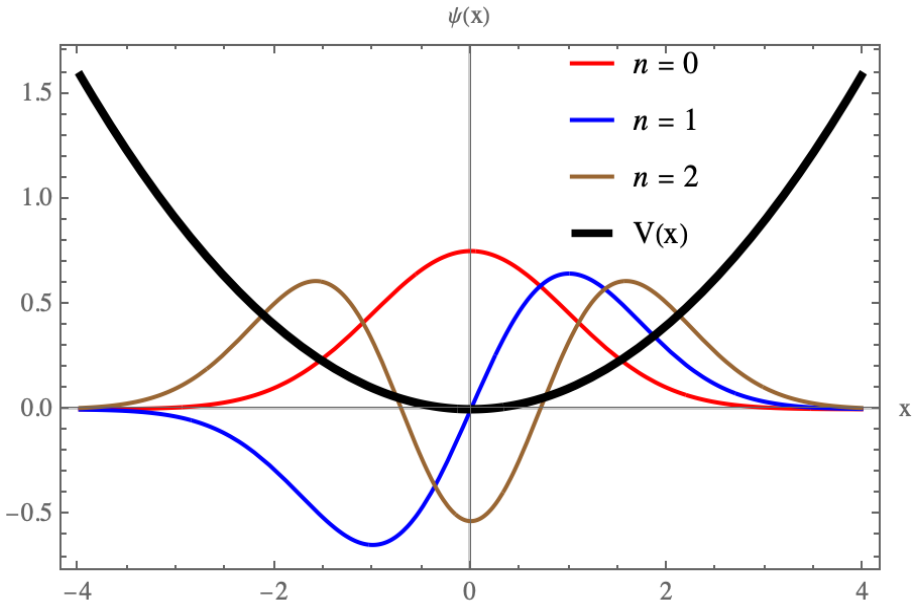

Figure 1:

```
\begin{table}[htp]
\centering
\setlength{\tabcolsep}{1em}
\begin{tabularx}{\columnwidth}{|c|X|c|c|}
\toprule
Quantity & Col-1 & Col-2\\
\toprule
1&\( \)&\( \)\\
\bottomrule
\end{tabularx}
\caption{Table}
\end{table}
--------------Display style-----------------
normal: $ x^2 + 2xy + y^2 $\\
displaystyle: $ {\displaystyle x^2 + 2xy + y^2} $\\
scriptstyle: $ {\scriptstyle x^2 + 2xy + y^2} $\\
scriptscriptstyle: $ {\scriptscriptstyle x^2 + 2xy + y^2} $\\
textstyle: $ {\textstyle x^2 + 2xy + y^2} $

--------------Subsection in red color----------------
\documentclass{article}
\usepackage{amsmath,geometry, enumerate}
```

```
\geometry{a4paper, margin=2cm}
\usepackage{titlesec}
\usepackage{xcolor}

\titleformat{\subsection}
  {\normalfont\large\bfseries\color{red}} % Set the format for subsection titl
  {\thesubsection} % The label, if needed
  {1em} % Separation between label and title
  {} % Code preceding the title
\begin{document}
----------
```

2. Figure in latex

```
\begin{figure}[htp] %  figure placement: here, top, bottom, or page
   \centering
   \includegraphics[height=8cm,width=12cm]{img/plot.png}
   \caption{}
   \label{fig:Plot}
\end{figure}
```