Log Book Week 7

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System Programming - C

This week's material is about scripting. First I did the pre-test using the resources on the internet. Here are the resources I gathered, I tried to write my own understandings in this log book.

Shell

A Unix shell is a command-line interpreter or shell that provides Unix-like operating systems with a command line user interface. The shell is both an interactive command language and a scripting language, and the operating system uses shell scripts to monitor system execution.

There are several unix shells such as bash, zsh, fish, C shell, sh.

Shell	Advantages	Disadvantages
bash	- Can create aliases - Make functions - Run commands	Limited set of configurable options
zsh	- similar to bash but much faster and customizable - color customizable - spelling correction - command history across multiple terminals - naming directory shortcuts	Larger than bash, may run slower in outdated machines.
fish	- more user friendly - tab completion - excellent runtime help	Doesn't support POSIX
csh	great for large scale machine	May lead confusion when quoting characters

	● C-like expression syntax	
sh	● Support for POSIX Standard Compliant	No autocompletion

macOS Catalina update uses zsh as a default shell to replace bash.

Shell variables

A shell variable is a special variable that the shell determines and that the shell needs in order to operate properly. Environmental variables are some of these variables, while others are local variables.

Bash/Prompt Customization

Source: https://wiki.archlinux.org/index.php/Bash/Prompt_customization

Bash has four prompt strings that can be customized:
- PS1 is the primary prompt before each command is displayed, because it is the one most people configure.
- PS2 is the secondary prompt displayed when a command needs more input (e.g. a multi-line command).
- PS3 is not very commonly used. It is the prompt displayed for Bash's select built-in which displays interactive menus. Unlike the other prompts, it does not expand Bash escape sequences. Usually you would customize it in the script where the select is used rather than in your .bashrc.
- PS4 is also not commonly used. It is displayed when debugging bash scripts to indicate levels of indirection. The first character is repeated to indicate deeper levels.

Bash Prompt:
- \u → to display username
- \h → to display hostname
- \w → to display pathname from current working directory
- \s → to display type of shell used
- \v → to display Bash version
- \d → to display date
- \@ → to display time in 12 hour format (AM/PM)

Add Colors (digunakan pada tiap Bash Prompt yang ingin diganti warna):
- \e[→ to change color

- \e[m → to restrict the change of color
- ([num])m → change [num] with color codes
- Color code:
- 31 = Red
- 32 = Green
- 33 = Yellow
- 34 = Blue
- 35 = Magenta
- 36 = Cyan

Example of customized bash shell

```
[Tuesday, 03-11-2020||02:44 PM WIB][Joses-MacBook-Pro of josedevian:~/Documents/School/Semest
er7/SysProg/ws/ws07] $ vi /etc/bashrc
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