Linux Shell Scripting

Creating a Local Linux Shell Scripting Enviroment (S2)

- Setting up a centos7 VM with VirtualBox and Vagrant

User and Account Creation (S3)

Getting Started with Shell Scripting: Naming, Permissions, Variables, Builtins

- Shebang(#!) → sets the interpreter for script
- See permissions with ls –l
- chmod 755 <file> → make it executable for all
    - chmod +x does the same
- Builtin: command that is executable with shell only
    - type <command> → to see if it's a builtin
    - use builtins when available
- help <command> and man <command> for help for commands
- Variables:
    - no spaces for variable assignment
    - no dashes in variables
    - all uppercase in convention
    - get variable value with $<variable> or ${<variable>}
        - single quotes prevent variable assignment

Special Variables, Pseudocode, Command Substitution, if Statement, Conditionals

- shell variables are predefined (see in manpage)
- whoami same as id –un → print username
- add command output to variable:

```
USER_NAME=$(id -un)
```

- if-then-else statement(bash specific):

```
if [[ "${UID}" -eq 0 ]]
then
    echo 'You are root'
else
    echo 'You are not root'
fi
```

    - help test → to see operators
- make sanity check for required stuff

Exit Statuses, Return Codes, String Test Conditionals, More Special Variables

- exit status:
    - number can be given to exit command
    - 0: succesfull
- **$? → special variable with exit status of last executed command**
- String comparison:
    - = → string comparison
    - == → pattern string comparison

Reading Standard Input, Creating Accounts, Username Conventions, More Quoting

- read builtin to get stdin
    - stdin(0), stdout(1), stderr(2)
- useradd to add user
    - usernames are case sensitive
    - – l → no login
    - – m → create home directory
- passwd to change password
    - –stdin → to pipe password in
        - Not in ubuntu (use chpasswd instead)
    - -e → user have to change password after first login
- su to change user

Password Generation and Shell Script Arguments (S4)

Linux Programming Conventions (S5)

Parsing Command Line Options (S6)

Transforming Data/ Data Processing/ Reporting (S7)

Networking Scripting & Automation of Distributed Systems (S8)