Network Directory Services Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Spring 2017 Midterm Exam (100 points)

**Instructions:** You are being assessed for all concepts covered up to this point within the course. You are free to use whatever resources that are at your disposal, except for talking to your peers, your instructor (unless you are asking a question to clarify the question), and this section of the exam must remain with the instructor at the end of every class session. Failure to do so will result in a score of zero for the entire exam.

**Section A: Virtualization Concepts** (20 points)

What is the super user of VMWare ESXI server? (2 points)

What is another name for a hypervisor? (2 points)

What is an example of a Type-II hypervisor? (2 points)

What is a ‘guest’ operating system? (2 points)

What is a ‘host’ operating system? (2 points)

What is a ‘bare metal’ hypervisor? (2 points)

True or False: It would make sense to use a hypervisor solution for a text-based staff directory service. (2 points)

True or False: It would make sense to use a hypervisor solution for setting up a workstation environment for an online introductory course in Windows 10. (2 points)

Are container technologies a replacement for VMs? Please briefly explain your answer. (4 points)

**Section B: Container Technologies** (10 points)

Draw a picture you would use to explain how virtualization works and how containers work to a fellow IT technician you work with. Note: Attention to detail is important here. (2 points)

What command did we use to build an image using Docker? Let’s call it ‘dockertest’ Note: Be sure to include all relevant options that are needed in order for it to successfully build. (2 points)

What command did we have to use to search for something in the Docker hub? Let’s say we wanted to find a common service called ‘elasticsearch’. (2 points)

What command would we use to run the ‘elasticsearch’ container service in the background? (2 points)

What command would we use to verify that this container is indeed running? (2 points)

**Section C: Scripting Basics** (20 points)

Using BASH or Powershell, please write a script that completes the following tasks:

1. Create a user named Bob McDugal within your script.
2. Create the following file structure in Bob’s home user directory:

Business / Properties / Residential / City / Addresses.xlsx

Business / Properties / Residential / City / PropertyListing.txt

Business / Properties / Residential / Rural / PropertyListing.txt

Business / Properties / Commercial / City / Addresses.xlsx

Business / Properties / Commercial / Rural / Addresses.xlsx

Business / Properties / Commercial / City / PropertyListing.txt

Business / Properties / Commercial / Rural / PropertyListing.txt

Business / Contacts / Contractors.xlsx

Business / Contacts / 2016-Residential-Customers.xlsx

Business / Contacts / 2016-Commercial-Customers.xlsx

Business / Contacts / 2017-Investors.xlsx

1. Using a loop, add the following records to the list of 2016 residential business contacts:

Roger,Lee, 3648 Forster Junction, Texas, 78245

Jacqueline,Day,803 Carioca Park,Florida,33961

Martin,Hughes,77972 Thompson Trail,Michigan,49018

Christine,West,0 Merrick Lane,Louisiana,70033

Wanda,Bennett,6078 Porter Terrace,Colorado,80945

Bobby,Burns,7 Dexter Terrace,Florida,33233

Karen,King,50 Russell Way,Maine,04109

Carol,Thomas,207 Cody Avenue,Nevada,89150

Paul,Jenkins,04004 Hoard Lane,New York,10019

1. Using a different loop other than what you used in Step 3, add the following records to the list of 2016 commercial business contacts:

Philip,Patterson,17983 Farmco Junction,New York,10160

Raymond,Kelly,18717 Waubesa Avenue,District of Columbia,20041

Donna,Flores,04 Paget Terrace,Alabama,36114

Earl,Alvarez,3 Farragut Center,District of Columbia,20456

Jason,Henderson,54 Tony Point,Georgia,30911

**Section D: Scenario.** You have recently been hired on as the new system administrator for a company called Homely Homes, which is a new player in the real estate industry. Cynthia, the IT Manager of the company, has learned you have scripting experience, so she has decided to give you a list of tasks she would like you to complete: (50 points)

1. Using the customer information provided in the last section, create user accounts for every person mentioned, both residential and commercial. The company has a kiosk system, which customers will use the login information you provide.
2. Create a file which lists all of the usernames and create a random temporary password.
3. For whatever reason, one of the production servers keeps crashing every Monday morning. Please write a script that can be used for troubleshooting of: when it happens, what is the name of the computer, how much resources it is using (memory and disk space), what processes are running, and any other information you feel would help solve this problem.
4. Members of the corporate office management team has asked IT to help explore possible business options or solutions to the following business scenarios (Cynthia has added more technical information for you to help). Using what we have learned in class, focus on the areas we have learned about in class and factor those into your answers. Use the back of the exam if you need additional space and make sure you are being detailed in your responses.

What’s the best way to expand the customer kiosk program? Currently, we have to purchase a new workstation computer, purchase/install an OS (Windows 10), and then install our kiosk software on it. We have 180 real estate agency offices and every office has multiple kiosks. Some of the older offices have Windows XP installed and in the newer offices we have Windows 10 installed.

The Homely Homes property listing service website is currently hosted on the server that has to be rebooted every Monday (both the database and website are on this system as well). Keeping this in mind and factoring in the fact that later this year we are planning on buying another real estate company, which will nearly double our property listings and user traffic; do we keep things running as is or do we change how we are running things?

**Section E: Done.** When you have completed all previous steps, please have the instructor verify and initial: \_\_\_\_\_