**1+st feb 2022**

**Internship Program**

**Instructor:** Rodgers Kimera

**Participants:**

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3. MUKIZA GIDEON
4. BUTEREMO JOEL
5. ABIGABA DEO MWEBAZE

Tentative Areas of Coverage

1. Virtual Reality
2. Networking and Server configuration
3. Website designing
4. High Performance Computing
5. Printer installation and setup: 3D printer and HP LaserJet Printer
6. Network installation
7. Linux Operating SYstem

* Installation and different versions]

1. Cloud Computing: AWS (Amazon Web Services)
2. Systems Development

* Dreamweaver: JSP, PHP
* Wampserver: MySQL

**Activities**

Installed VM with Centos 7 and learn some basic Linux

* Using putty to SSH into servers

- How to install updates: yum update -y

- How to install applications; yum install <application name>

- How to change Hostnames

- How to change Network configurations

- How to create directories and files

- How to modify files

- Some basic commands: hostname, hostnamectl, ip a, ifconfig

pwd - Prints working directoryputty

mkdir - creates directory/folder

ls- list content of a directory: ls -a, ls -al, ls -l, ll

Linux Editors

<https://phoenixnap.com/kb/best-linux-text-editors-for-coding>

https://citricks.net/?p=56

vi, vim, nano

**Task set 1**

1. Read about RAID

2. Read about and acquaint yourself with Network devices

Different Types of servers

<https://www.indeed.com/career-advice/career-development/types-of-servers>

1. Web servers
2. Proxy servers
3. Mail servers
4. And many others, check link above

Few linux commands for saving file content

https://www.tecmint.com/save-file-in-vi-vim-editor-in-linux/

QUESTION SIR

If at all I install Putty, cant it work like VM Centos7

—Putty is a free and open-source terminal emulator, serial console and network file transfer application. It supports several network protocols and helps you to SSH into linux servers.

Cloud Computing

Create a free account on AWS

[https://aws.amazon.com/free/?all-free-tier.sort-by=item.additionalFields.SortRank&all-free-tier.sort-order=asc&awsf.Free%20Tier%20Types=\*all&awsf.Free%20Tier%20Categories=\*all](https://aws.amazon.com/free/?all-free-tier.sort-by=item.additionalFields.SortRank&all-free-tier.sort-order=asc&awsf.Free%20Tier%20Types=*all&awsf.Free%20Tier%20Categories=*all)

Friday, February 4, 20221

Activities covered

1. Install ubuntu 7 on Virtula Server
2. Install Virtual box and install VMs
3. Create AWS user accounts
4. Installed Virtual Machine instance in AWS
5. Using Putty to SSH into servers
6. Install applications on linux servers
7. Using linux OS editors: VIM and VI

**Task set 2**

1. Read about the different Types of Servers (<https://www.indeed.com/career-advice/career-development/types-of-servers>)
2. Install Virtual box on your Laptop and install some VMs of Linux operating system (Centos 7/8 or Ubuntu 18.04/20.04 or Debian 10)
3. Use your Installed VM to practice some basic linux commands with vi or vim text editors

(cp, mv, mkdir, ls, ls -a, ll, ls -l, ls -al, cd, rm, rmdir, cat, e.t.c……)

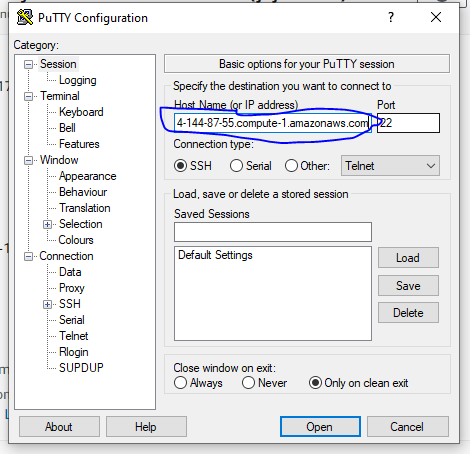
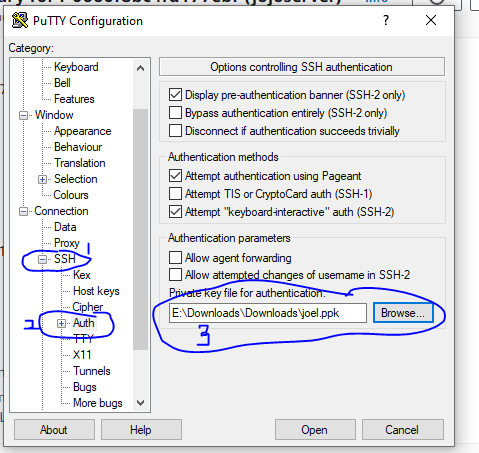
1. Read Linux file permissions
2. Create a free account on AWS

[https://aws.amazon.com/free/?all-free-tier.sort-by=item.additionalFields.SortRank&all-free-tier.sort-order=asc&awsf.Free%20Tier%20Types=\*all&awsf.Free%20Tier%20Categories=\*all](https://aws.amazon.com/free/?all-free-tier.sort-by=item.additionalFields.SortRank&all-free-tier.sort-order=asc&awsf.Free%20Tier%20Types=*all&awsf.Free%20Tier%20Categories=*all)

I need help on hosting a server on the cloud…….!!! AWS

Steps

1. Log into AWS
2. Create an instance with favourite OS and correspond doing Key pair
3. Download keypair (.pem) to a known location on your PC
4. Access the VM Instance

* Open putty Gen and converter .pem Keypair to .ppk format
* Open Putty enter DNS name
* 
* Then browse for the .ppk keypair to log into the instance.
* 

February 8, 20221

Activities covered

1. Talk about some server room devices; ATS, PDU
2. Terminate network cables (straight through cables) for connecting PDUs to the network switch
3. Run cables through the cable managers and connect them between PDUs and network switch
4. Bringing up some network devices and basic configurations: PDUs, basic routers (TP Link, Mikrotic, Lynks)
5. Best practice for networking: like labling both sides of the cable
6. Quickly check through the Hardware components of server and Troubleshoot Server Hardware after failing to boot
7. Install Centos 7 on Physical server and done Hostname and STatic network configurations

Information

About RAID

<https://www.startech.com/en-eu/faq/raid-modes-explanation>

Plan to install

* Dreamweaver
* Apche tomcat
* Wamp server
* Also install JDK

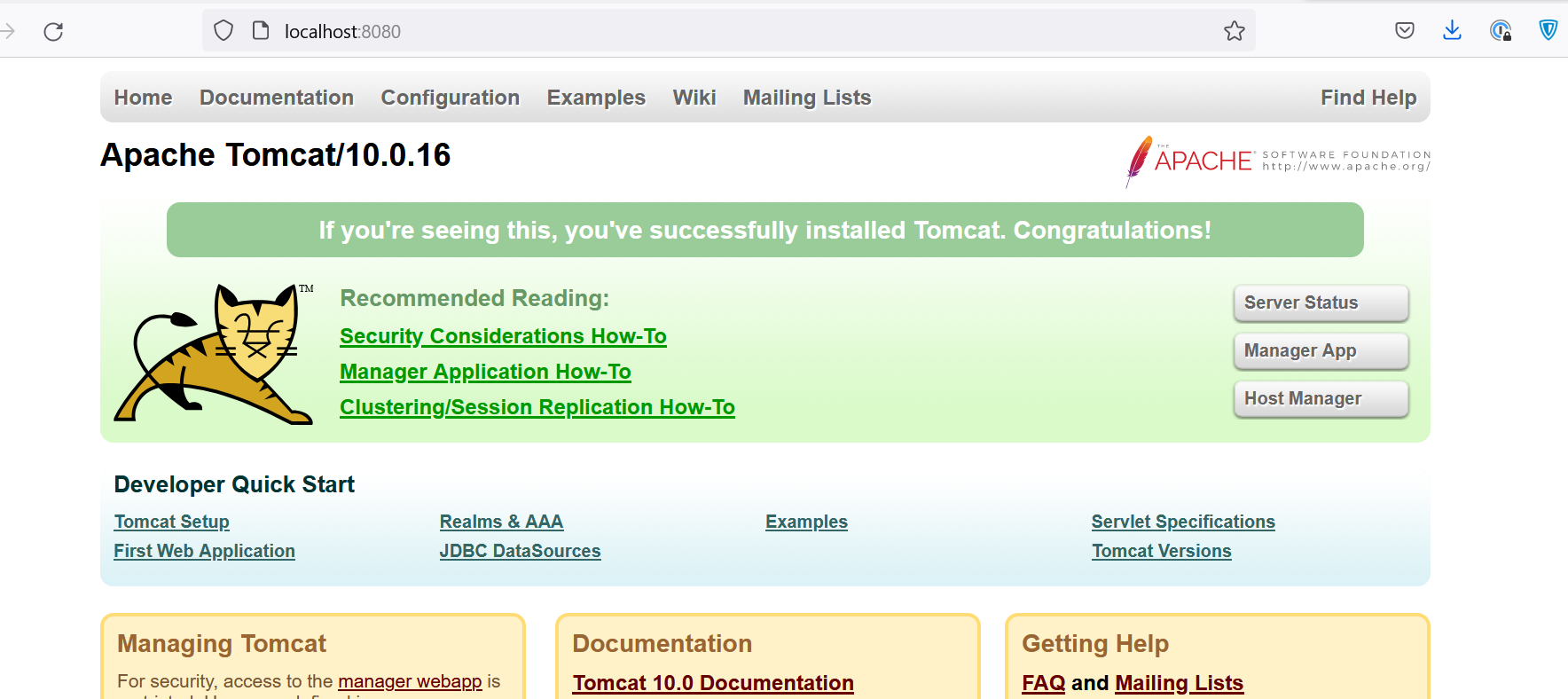
February 14 & 15, 2022

Information System Development

Tools:

1. Dreaweaver/Notepad++ for front end design
2. Apache tomcat - allows the users to run Servlet and JAVA Server Pages that are based on the web-applications
3. Wampserver - we shall use the mysql component for Database
4. JDK

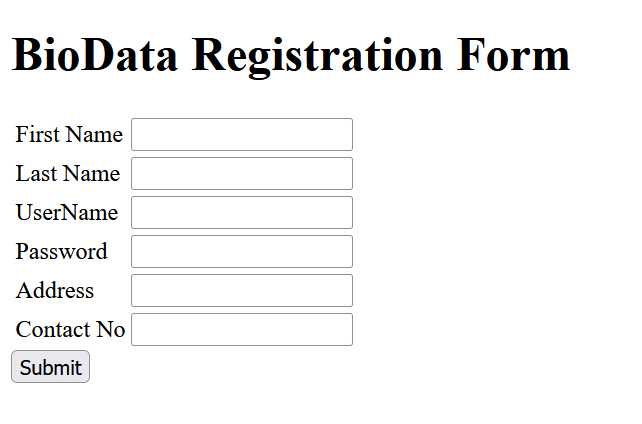
After successful installation ensure you get this page



Getting started

* Open Dreamweaver and create a HEllo world page

**Tasks/Assignments**

* Ensure your environment is working well
* Create Hello World Example follow <https://www3.ntu.edu.sg/home/ehchua/programming/howto/Tomcat_HowTo.html>
* Read about Servlet
* **LET’s work on this simple project together**
* Create another project under webapps and call it “**Test**”
* Design Simple form(**register.jsp**) in Dreamweaver after test it in the browser “**http://localhost:8080/Test/register.js**p”
* 
* Create database “**test**” a corresponding table ”**register**” in mySQL with following columns (user\_id, fname, lname, uname, passwd, address, contact). Note: user\_id is the primary key and set it to auto increment, use respective data types for your fields.
* ###Now that we have a front end file and backend table we need to create a connection file between these two.
* Create a file “connectionFile.jsp” under “webapps/Test” and add the following content

<%@ page import="java.sql.\*"%>

<%@ page import="java.io.\*"%>

<%

String connectionURL = "jdbc:mysql://localhost:3306/test";

Connection connection = null;

Class.forName("com.mysql.jdbc.Driver").newInstance();

connection = DriverManager.getConnection(connectionURL, "root", "");

%>

* Create another file called “submit.jsp” under “webapps/Test” and add the following content

<%@ page import="java.sql.\*" %>

<%@ page import="java.io.\*" %>

<%@ page import="java.security.MessageDigest" %>

<%@ include file="connectionFile.jsp" %>

<%

String fname=request.getParameter("txtfname");

String lname=request.getParameter("txtlname");

String uname=request.getParameter("txtuname");

String passwd=request.getParameter("txtpasswd");

String address=request.getParameter("txtaddress");

String contact=request.getParameter("txtcontact");

PreparedStatement stmt = connection.prepareStatement("insert into register (fname, lname, uname, passwd, address, contact)values(?,?,?,?,?,?)");

stmt.setString(1,fname);

stmt.setString(2,lname);

stmt.setString(3,uname);

stmt.setString(4,passwd);

stmt.setString(5,address);

stmt.setString(6,contact);

stmt.executeUpdate();

out.println("Saved Successsfuly...");

%>

February Friday 18, 2022

* Continue with Information System Development
* Work on Select query, update query and delete query

**Mr Kimera give some light on the file updatequary.jsp, its functionality… because it's a little confusing to me, despite the fact that I have run the whole project well. thanks**

Yesterday …..

**February Saturday 18, 2022**

* Physical Network installation and design
* Running cables
* Some tools required: Screw drivers, Punchdown tool, Crimping tool e.t.c…
* Installing data socket in a 3 compartment
* Punching ethernet cables into a Patch panel and RJ45 module
* Terminate Straight through patch code.

Need to Know/Read about

1. Diff btn Private and Public IP addresses
2. Subnetting
3. Classes of IP addresses

Ip adress document plz

Tuesday Feb 22, 2022

Sample search query

String value=request.getParameter("record");

PreparedStatement stmt1 = connection.prepareStatement("select user\_id,fname,lname,uname,passwd, address, contact from register where fname LIKE '"+value+"%'");

Wednesday Feb 22, 2022

Using Framesets to design front pages

<https://www.roseindia.net/jsp/jsp-frameset.shtml>

The frameset element **decides the number of columns and rows within** a frameset. The frameset tag holds two or more frames and each frame holds a separate document. By using its attributes rows and columns, you can set the number of rows and columns you want to be in the frameset.

**Sample code(the one we generated together in class)**

<frameset rows="120,\*,25" cols="\*" framespacing="0" frameborder="0">

<frameset rows="\*,40" cols="\*" framespacing="0" frameborder="0">

<frame src="header.jsp" name="frame1" scrolling="no">

<frame src="sessions.jsp" name="frame2" scrolling="no">

</frameset>

<frameset rows="\*" cols="220,\*" framespacing="0" frameborder="0"/>

<frame src="frmMenu.jsp" name="frame3" scrolling="no">

<frame src="displayrecords.jsp" name="frame4" scrolling="yes" />

</frameset>

<frame src="footer.jsp" name="frame5" scrolling="no"/>

</frameset>

**Introduction to GitHub**



GitHub is an online code hosting platform/website for version control and collaboration.

It has over 73 million users/developers.

Why is Github useful

1. **Version Control**

- No need for; script, script\_v2, script\_final, script\_final\_final. It keeps track of all versions and you can always easily go back to any previous version.

- Done using **git** a cmd-line tool developed by github

1. **Collaboration**

Multiple people can work on the same project while keeping record of who did what and when.

1. **Documentation**

Put all scripts in a single place (repository) with accompanying readme (description) files of what the project is about.

1. **Reproducibility**

You or others can easily recreate and/or modify a script you created, even many years later.

1. **Visibility**

Showcase your work to potential employers or as school projects.

1. **Safe storage of code**

Link to github:<https://github.com>