Checklist:

	Task	Score	Check
1	Create a server instance on cloud	1	x
2	Get a domain name basiclogin.xyz	1	x
3	Set "A record for www" to point to your server	1	x
4	Set "A record for @" to point to your server	1	x

5	Change root password
	```root@LoginWebapp:~# passwd```
	```New password:```
	```Retype new password:```
	```passwd: password updated successfully```
		1	x

6	Create a sudo user on server
	```root@LoginWebapp:~# adduser salagoza sudo```
	```Adding user `salagoza' to group `sudo' ...```
	```Adding user salagoza to group sudo```
	```Done.```
		1	x

7	Disable root login
	```#LoginGraceTime 2m```
	```PermitRootLogin no```
	```#StrictModes yes```
	```#MaxAuthTries 6```
	```#MaxSessions 10```
	```ssh root@159.89.193.93```
	```ssh: connect to host 159.89.193.93 port 22: Connection refused```
		1	x

8		1	x

	Setup firewall to block all ports on public network interface, except port 22, 80 and 443		
| | ```
salagoza@LoginWebapp:~/BasicLogin$ sudo ufw show added
Added user rules (see 'ufw status' for running firewall):
ufw allow 22/tcp
ufw allow 80/tcp
ufw allow 443/tcp
ufw allow in on docker0 to 172.17.0.1 port 3306 proto tcp
``` | | |
| 9 | Setup SYNC cookie to protect DDOS | 1 | x |
| | ```
root@LoginWebapp:~# sed -i 's/#net.ipv4.tcp_syncookies.*/net.ipv4.tcp_syncookies=1/g' /etc/sysctl.conf

# Uncomment the next line to enable TCP/IP SYN cookies
# See http://lwn.net/Articles/277146/
# Note: This may impact IPv6 TCP sessions too
net.ipv4.tcp_syncookies=1
``` | | |
| 10 | Setup fail2ban to protect against brute force attack | 1 | x |
| | ```
salagoza@LoginWebapp:~$ sudo iptables -L f2b-sshd -v -n --line-number
Chain f2b-sshd (1 references)
num   pkts bytes target     prot opt in     out     source               destination
1       18  1560 REJECT     all  --  *      *       45.146.165.72        0.0.0.0/0            reject-with icmp-port-un
reachable
2     28594   11M RETURN     all  --  *      *       0.0.0.0/0            0.0.0.0/0
salagoza@LoginWebapp:~$ sudo fail2ban-client status sshd
Status for the jail: sshd
|- Filter
|  |- Currently failed: 2
|  |- Total failed:     1425
|  `- File list:        /var/log/auth.log
`- Actions
   |- Currently banned: 1
   |- Total banned:     160
   `- Banned IP list:   45.146.165.72
``` | | |
| 11 | Generate ssh key on your laptop/computer | 1 | x |
| | ```
  ~/.ssh  ls                                   ✔  05:32:59 PM ☉
Thanawat     Thanawat.pub id_rsa      id_rsa.pub   known_hosts
``` | | |
| 12 | Add your public ssh key to your server for passwordless login | 1 | x |
| | ```
  ~  ssh-copy-id -i /Users/copter/.ssh/id_rsa.pub salagoza@159.89.193.93
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/Users/copter/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
salagoza@159.89.193.93's password:

Number of key(s) added:        1

Now try logging into the machine, with:   "ssh 'salagoza@159.89.193.93'"
and check to make sure that only the key(s) you wanted were added.

  ~  ssh salagoza@159.89.193.93
``` | | |
| 13 | Update and upgrade your server | 1 | x |

```
root@LoginWebapp:~# apt-get update && apt-get upgrade -y && apt -get dist-upgrade -y && apt-get autoremove -y
Get:1 http://mirrors.digitalocean.com/ubuntu focal InRelease [265 kB]
Get:2 http://mirrors.digitalocean.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://mirrors.digitalocean.com/ubuntu focal-backports InRelease [101 kB]
Get:4 http://mirrors.digitalocean.com/ubuntu focal-updates/main amd64 Packages [1086 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:6 http://mirrors.digitalocean.com/ubuntu focal-updates/main Translation-en [239 kB]
Get:7 http://mirrors.digitalocean.com/ubuntu focal-updates/main amd64 c-n-f Metadata [13.7 kB]
Get:8 http://mirrors.digitalocean.com/ubuntu focal-updates/restricted amd64 Packages [318 kB]
Get:9 http://mirrors.digitalocean.com/ubuntu focal-updates/restricted Translation-en [46.1 kB]
Get:10 http://mirrors.digitalocean.com/ubuntu focal-updates/restricted amd64 c-n-f Metadata [456 B]
Get:11 http://mirrors.digitalocean.com/ubuntu focal-updates/universe amd64 Packages [841 kB]
Get:12 http://mirrors.digitalocean.com/ubuntu focal-updates/universe Translation-en [176 kB]
Get:13 http://mirrors.digitalocean.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [18.4 kB]
Get:14 http://mirrors.digitalocean.com/ubuntu focal-updates/multiverse amd64 Packages [23.6 kB]
Get:15 http://mirrors.digitalocean.com/ubuntu focal-updates/multiverse Translation-en [6472 B]
Get:16 http://mirrors.digitalocean.com/ubuntu focal-updates/multiverse amd64 c-n-f Metadata [648 B]
Get:17 http://mirrors.digitalocean.com/ubuntu focal-backports/main amd64 Packages [2568 B]
Get:18 http://mirrors.digitalocean.com/ubuntu focal-backports/main Translation-en [1120 B]
Get:19 http://mirrors.digitalocean.com/ubuntu focal-backports/main amd64 c-n-f Metadata [400 B]
Get:20 http://mirrors.digitalocean.com/ubuntu focal-backports/universe amd64 Packages [5792 B]
Get:21 http://mirrors.digitalocean.com/ubuntu focal-backports/universe Translation-en [2060 B]
Get:22 http://mirrors.digitalocean.com/ubuntu focal-backports/universe amd64 c-n-f Metadata [288 B]
Get:23 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [745 kB]
Get:24 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [148 kB]
Get:25 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [8028 B]
```

14	Setup ntpdate and its cronjob to ensure that your server time is synchronized	1	x

```
root@LoginWebapp:~# timedatectl
              Local time: Sat 2021-07-17 03:22:42 +07
         Universal time: Fri 2021-07-16 20:22:42 UTC
               RTC time: Fri 2021-07-16 20:22:43
              Time zone: Asia/Bangkok (+07, +0700)
System clock synchronized: yes
              NTP service: n/a
            RTC in local TZ: no
```

15	Setup bangkok timezone on server	1	x

```
root@LoginWebapp:~# timedatectl set-timezone Asia/Bangkok
```

16	Install git	1	x

```
salagoza@LoginWebapp:~/BasicLogin$ git --version
git version 2.25.1
```

17	Install openjdk 11	1	x

```
salagoza@LoginWebapp:~/BasicLogin$ java --version
openjdk 11.0.11 2021-04-20
OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2.20.04)
OpenJDK 64-Bit Server VM (build 11.0.11+9-Ubuntu-0ubuntu2.20.04, mixed mode, sharing)
```

18	Install maven	1	x

```
salagoza@LoginWebapp:~$ mvn --version
Apache Maven 3.6.3
Maven home: /usr/share/maven
Java version: 11.0.11, vendor: Ubuntu, runtime: /usr/lib/jvm/java-11-openjdk-amd
64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "5.4.0-77-generic", arch: "amd64", family: "unix"
```

19	Install mysql	1	x

```
salagoza@LoginWebapp:~$ mysql -V
mysql  Ver 8.0.25-0ubuntu0.20.04.1 for Linux on x86_64 ((Ubuntu))
```

20	Visitor is redirected to login page when visit root domain if not authenticated	3	x
21	If visitor fails to login, it will redirect visitor back to login page with login failure message	3	x

22	If user successfully login, it will redirect to to user list page	3	x
23	If the url does not exist and user is authenticated, user will be redirected to user list page	3	x
24	If user access root domain and is authenticated, user will be redirected to user list page	3	x
25	On user list page, it contains a button or link to go to add user page (or add user modal)	3	x
26	On user list page, it lists all user in the system in a table	10	x
27	On user list page, for each user row in the tale, there must be a remove user button	5	x
28	Can remove user	5	x
29	When remove a user, there must be a confirmation page/modal/dialog	5	x
30	Can add user	10	x
31	Add user function must be for authenticated user only	5	x
32	Remove user function must be for authenticated user only	5	x
33	User information must be persist on database	10	x
34	User password must be hashed and salted	5	x
35	User must have username	5	x
36	User cannot remove their own account	3	x
37	When a user is removed, the table must be refreshed (no need to be fancy)	3	x

38	User should be able to edit other user information (e.g. username, firstname)	10	x
39	Username must be unique	2	x
40	Currently login user must be able to logout	5	x
41	On user page, it must also show information of currently login user	5	x
42	Use git repository for SCM	5	x
43	Use maven for project management	5	x
44	Must compile into a runnable fat jarfile	5	x
45	Must ignore .idea, target *.iml, .DS_Store and any unrelated files. (lose 1 mark for each type)	5	x
	Total	150	

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- `Last login: Sat Jul  3 16:15:10 2021 from 124.120.19.92`

- docker run -p 3307:3306 --name login-mysql -v user_db:/var/lib/mysql -e MYSQL_ROOT_PASSWORD=secret -d mysql
- https://linuxize.com/post/how-to-set-or-change-timezone-in-linux/
- https://www.digitalocean.com/community/tutorials/how-to-set-up-a-firewall-with-ufw-on-ubuntu-18-04
- https://www.cyberciti.biz/faq/enable-tcp-syn-cookie-protection/
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Set up dns
- Go to namecheap.com
- Manage → name server → custom dns
- Copy and paste from discord
- Go to digital ocean
- Networking → domains
- Create A record
- Install nginx on server

- Go to link in discord → karmaln7