LAPORAN PRAKTIKUM
ARSITEKTUR DAN ORGANISASI KOMPUTER

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MPI (parallel computing)

```
mpiuser@dayat-VirtualBox:~$ sudo adduser mpiuser
[sudo] password for mpiuser:
```

1. Membuat user

```
mpiuser@dayat-VirtualBox:~$ sudo usermod -aG sudo mpiuser
```

2. Memberikan izin

```
mpiuser@dayat-VirtualBox:~$ sudo apt update && sudo apt upgrade
Hit:1 http://id.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://id.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Hit:3 http://id.archive.ubuntu.com/ubuntu jammy-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Reading package lists... Done
```

3. Update dan upgrade Ubuntu desktop

```
mpiuser@dayat-VirtualBox:~$ sudo apt install net-tools vimS
```

4. Install net-tools vim

```
mpiuser@dayat-VirtualBox:~$ sudo apt install openssh-server
```

5. Selanjutnya kita install openssh-server di Ubuntu desktop

```
mpiuser@dayat-VirtualBox:~$ mkdir /home/mpiuser/bubble
```

6. Kita membuat file directory untuk menyimpan file

```
mpiuser@dayat-VirtualBox:~$ sudo nano /etc/hosts
mpiuser@dayat-VirtualBox:~$ sudo apt install nfs-common
```

7. Install nfs-common

```
mpiuser@dayat-VirtualBox:~$ sudo mount master:/home/mpiuser/bubble /home/mpiuser/bubble
```

8. Jalankan perintah tersebut untuk master

```
mpiuser@dayat-VirtualBox:~$ sudo apt install openmpi-bin libopenmpi-dev
```

9. Install mpi

```
mpiuser@dayat-VirtualBox:~$ sudo apt install python3-pip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
python3-pip is already the newest version (22.0.2+dfsg-1ubuntu0.4).
0 upgraded, 0 newly installed, 0 to remove and 5 not upgraded.
mpiuser@dayat-VirtualBox:~$ pip install mpi4py
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: mpi4py in ./.local/lib/python3.10/site-packages (3.1.5)
mpiuser@dayat-VirtualBox:~$
```

10. Install python3-pip
11. Install mpi4py