CKCS 145: Lab 1.1 - First Python/Flask Application

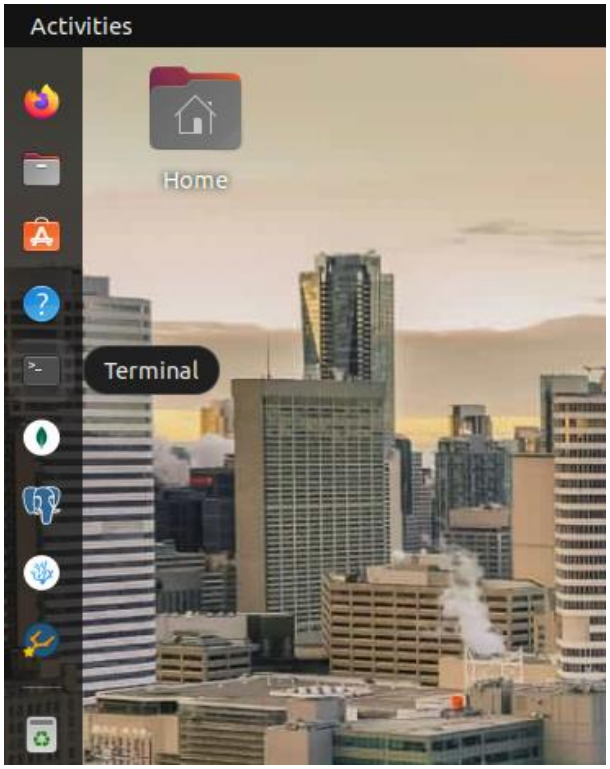
In this lab, you will be working with Python, Flask and the command prompt. You will need to use the virtual machine (VM) that was set up in Lab 1. To start your VM, log into the machine using your account ("TorontoMet" is the username and "torontomet123" is the password). Open up a Terminal or command prompt and start with step 1.

Prerequisites:

- Flask version 3.0.3 or higher
- Werkzeug 3.0.3 or higher

1. From your desktop open a terminal or command line prompt. Use figure 1 as a guide..

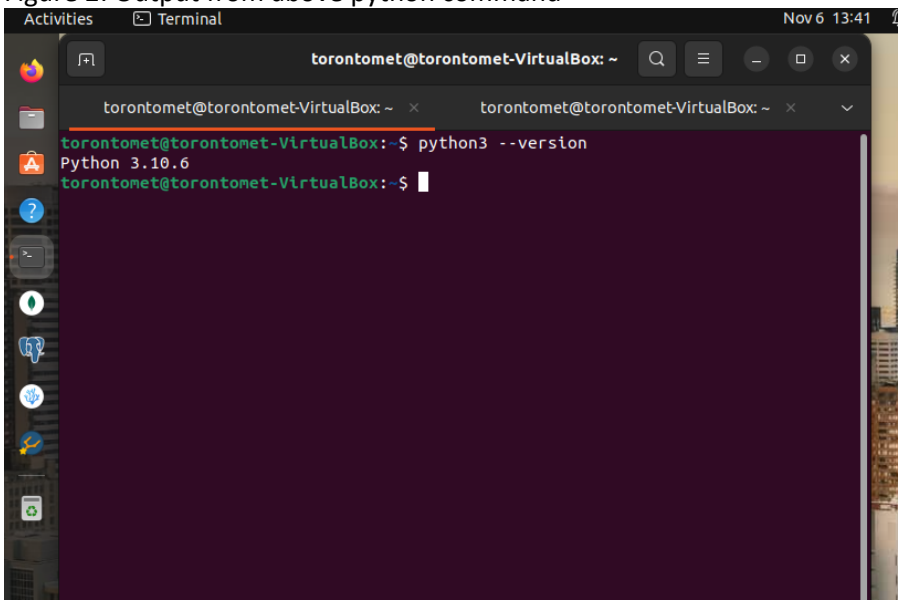
   Figure 1: Opening terminal from desktop environment.



2. What version of Python do you have installed? Use the command below in a Terminal. Use the command below in a Terminal. Use figure 2 as a guide.

```
python3 –version
```

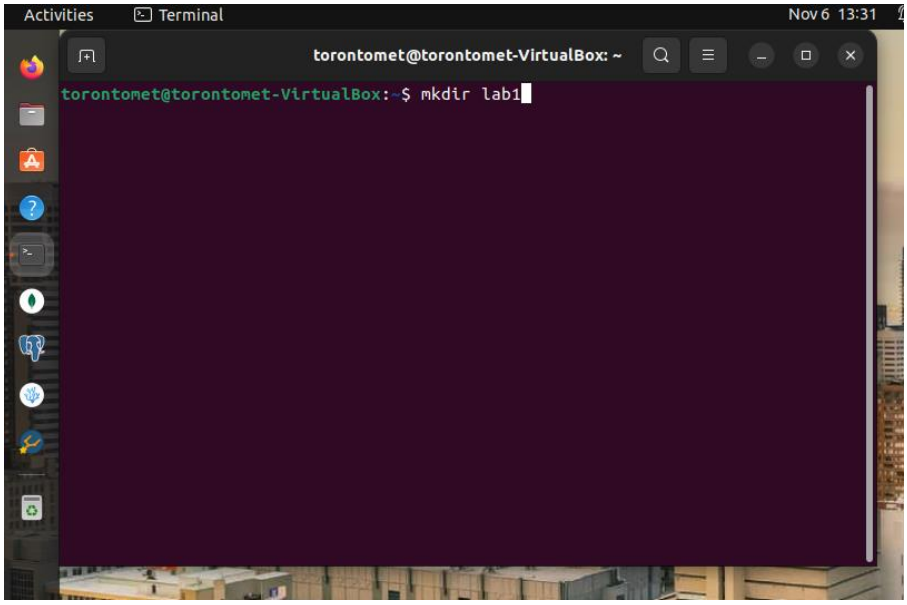
Figure 2: Output from above python command



3. Create a folder named “lab1”. This folder can be in your home folder or in your project folder. Use the command below in a Terminal. Use figure 3 as a guide.

```
mkdir lab1
```

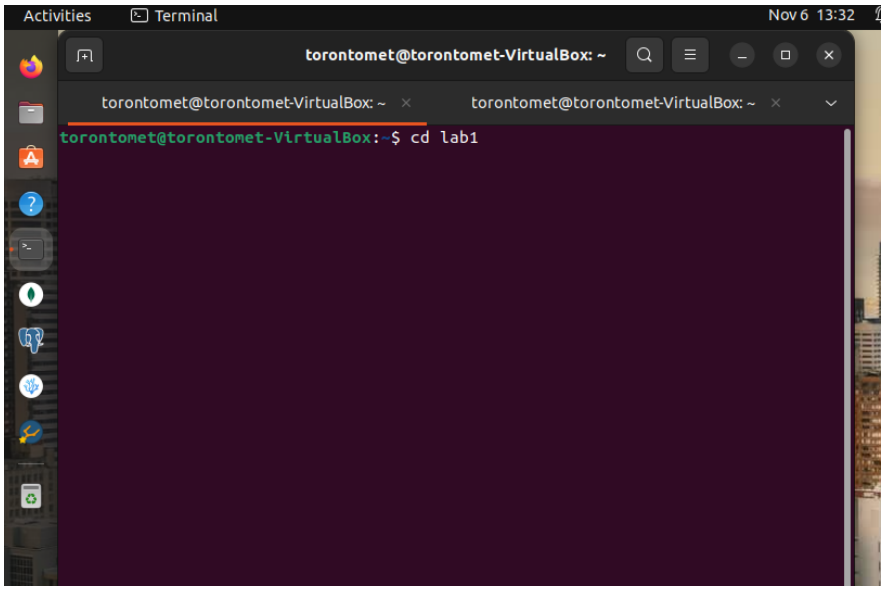
Figure 3: Output from above command



4. Change the current directory to “lab1”. This can be achieved using the cd command. Use the command below in a Terminal. Use figure 4 as a guide.

```
cd lab1
```

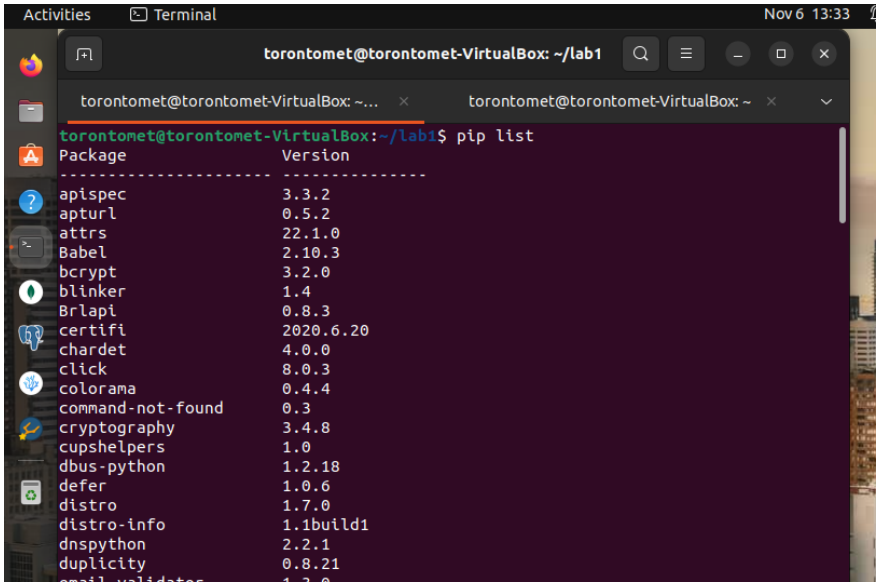
Figure 4: Output from above command



5. Use pip to list Python packages available. Is Flask one of the packages available? Use the command below in a Terminal. Use figure 5 as a guide

```
pip list
```

Figure 5: Output from above command



6. If Flask is not available, then it can be installed using pip.

```
pip install flask
```

7. Create a text file named “test.py”.

```
touch test.py
```

8. Open file named “test.py”.

```
gedit test.py &
```

9. Open the above text file using a text editor and add the following inside it.

```
from flask import Flask

app = Flask(__name__)


@app.route('/')

def test1():

   return 'Accessed endpoint powered by Flask and Python'


if __name__ == '__main__':

   app.run()
```

10. Start the above application.

```
python3 test.py
```

11. The above application is middleware. This means that it is a service that may be accessed on port 5000 using the Firefox web browser. The URL that may be used is http://localhost:5000. What do you see in your web browser when you visit this URL?
12. Add the following code (called a route) to “test.py”.

```
@app.route('/param')

def param_home():

   return 'Parameter may be submitted to this url.'
```

13. Restart “test.py” like in step 10.
14. Use a web browser and visit http://localhost:5000/param. What do you see? Then visit http://localhost:5000/param/echo. What do you see? Then visit http://localhost:5000/param/test. What do you see?
15. Add the following code (called a route) to “test.py”.

```
@app.route('/param/<name>')

def param_submit(name):

   return f"Parameter {name=}"
```

16. Restart “test.py” like step 8.
17. Use a web browser and visit http://localhost:5000/param. What do you see? Then visit http://localhost:5000/param/echo. What do you see?
18. You can now shut down your middleware script “test.py” by pressing CTRL-C to terminate the Python process.