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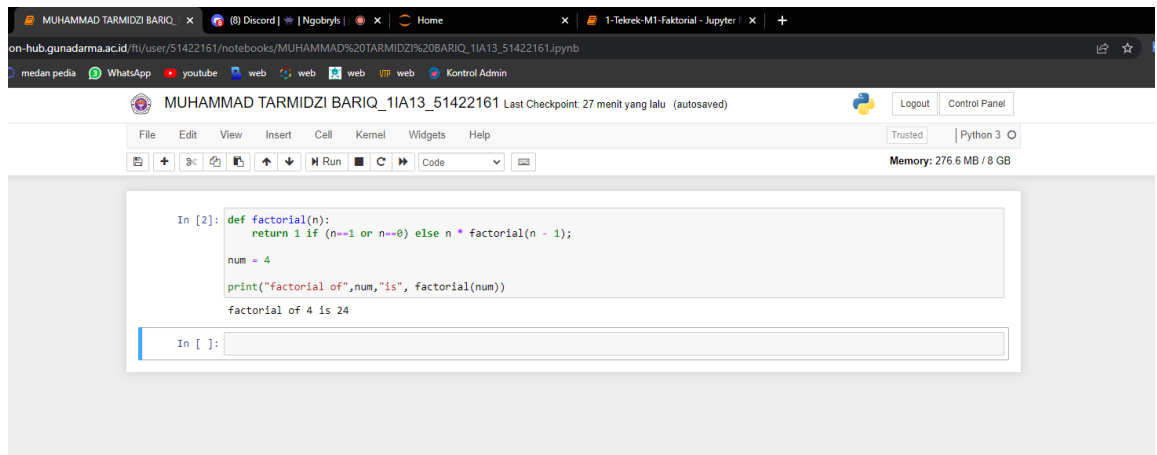
1. Factorial

def factorial(n):

 return 1 if (n==1 or n==0) else n * factorial(n - 1);

num = 4

print("factorial of",num,"is", factorial(num))



2. Fibonacci

```
def Fibo(n):
```

```
    if n <= 1:
```

```
        return n
```

```
    else:
```

```
        return Fibo(n-1) + Fibo(n-2)
```

```
n = 19
```

```
if n <= 0:
```

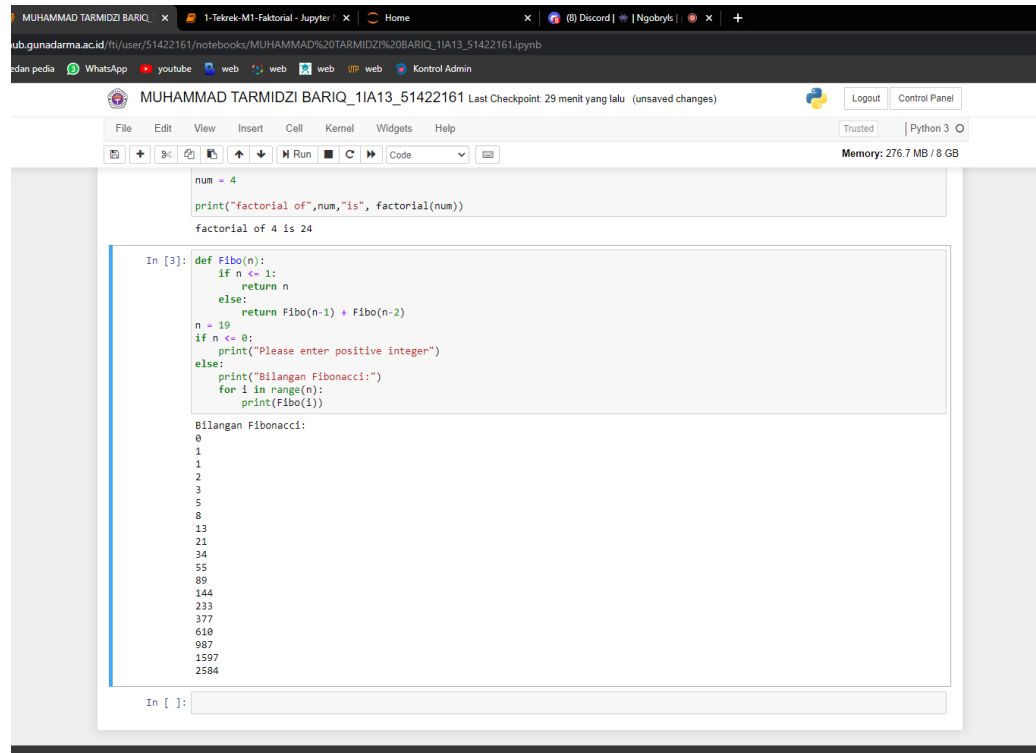
```
    print("Please enter positive integer")
```

```
else:
```

```
    print("Bilangan Fibonacci:")
```

```
    for i in range(n):
```

```
        print(Fibo(i))
```



The screenshot shows a Jupyter Notebook interface with a browser window at the top displaying the URL `ub.gunadarma.ac.id/fti/user/51422161/notebooks/MUHAMMAD%20TARMIDZI%20BARIQ_1IA13_51422161.ipynb`. The notebook's title bar reads "MUHAMMAD TARMIDZI BARIQ_1IA13_51422161" and indicates "Last Checkpoint: 29 menit yang lalu (unsaved changes)". The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for file operations, running, and code execution. The code cell, labeled "In [3]:", contains the following Python code:

```
num = 4
print("factorial of", num, "is", factorial(num))
factorial of 4 is 24

In [3]: def Fibo(n):
        if n <= 1:
            return n
        else:
            return Fibo(n-1) + Fibo(n-2)
n = 19
if n <= 0:
    print("Please enter positive integer")
else:
    print("Bilangan Fibonacci:")
    for i in range(n):
        print(Fibo(i))
```

The output of the code cell shows the result of the factorial calculation and the first 19 numbers of the Fibonacci sequence:

```
factorial of 4 is 24

Bilangan Fibonacci:
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
610
987
1597
2584
```

The bottom of the notebook shows the prompt "In []:" followed by an empty input field.

3. Bilangan Prima dalam Interval

```
num = int(input("Masukan Bilangan : "))
```

```
#bilangan prima harus lebih besar dari 1
```

```
if num > 1:
```

```
for i in range(2, num):
```

```
if (num % i) == 0:
```

```
print(num, "bukan bilangan prima")
```

break

else:

```
print(num, "adalah bilangan prima")
```

#bilangan kurang atau sama dengan satu

else:

```
print(num,"bukan bilangan prima")
```

[illegible]

4. Perbandingan CPU vs GPU

```
import numpy as np

import cupy as cp

import time

### Numpy dan CPU

s = time.time()

x_cpu = np.ones((1000,1000,1000))

e = time.time()

print("Waktu yang diperlukan untuk CPU :", e - s)

### CuPy dan GPU

s = time.time()

x_gpu = cp.ones((1000,1000,1000))

cp.cuda.Stream.null.synchronize()

e = time.time()

print("Waktu yang diperlukan untuk GPU :", e - s)

### Nilai yang akan dikalikan dengan array

n = 7

### Numpy dan CPU

s = time.time()

x_cpu *= n

e = time.time()

print("Waktu yang diperlukan untuk CPU :", e - s)

### CuPy and GPU

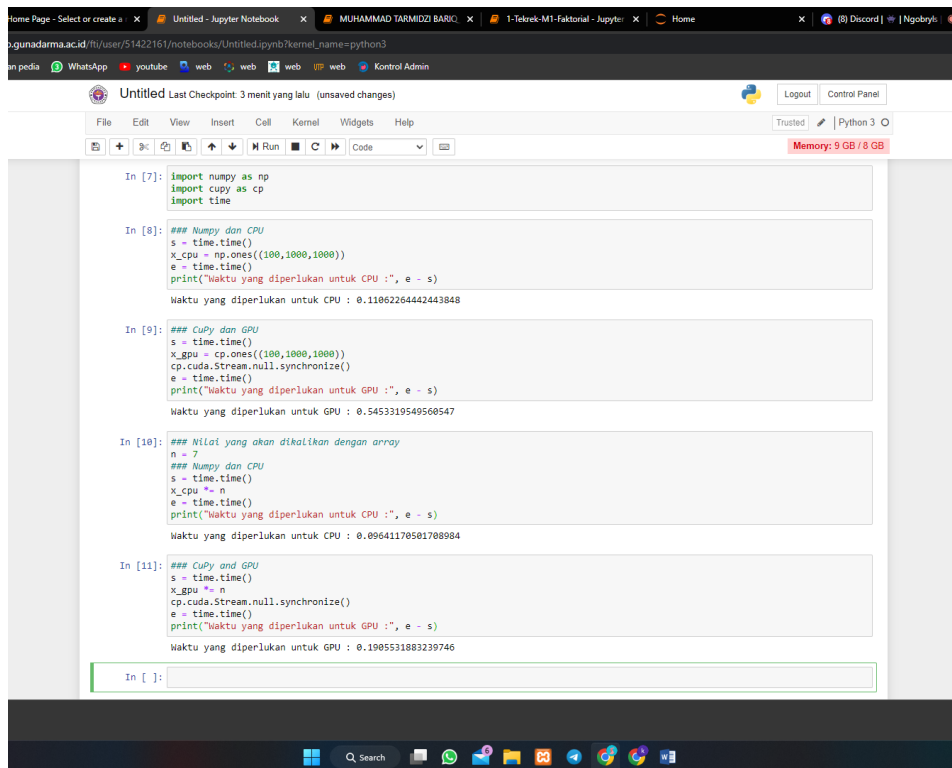
s = time.time()

x_gpu *= n

cp.cuda.Stream.null.synchronize()

e = time.time()
```

```
print("Waktu yang diperlukan untuk GPU :", e - s)
```



The screenshot displays a Jupyter Notebook interface with the following components:

- Browser Tabs:** Home Page, Untitled - Jupyter Notebook, MUHAMMAD TARMIDZI BARIQ, 1-Telesek-M1-Faktorial - Jupyter, Home, (8) Discord, Ngobyb.
- Address Bar:** gunadarma.ac.id/iti/user/51422161/notebooks/Untitled.ipynb?kernel_name=python3
- Navigation Bar:** Untitled, Last Checkpoint: 3 menit yang lalu (unsaved changes), Logout, Control Panel.
- Menu Bar:** File, Edit, View, Insert, Cell, Kernel, Widgets, Help.
- Toolbar:** Includes icons for file operations, a 'Run' button, and a 'Code' dropdown menu.
- Memory Status:** A red bar indicates 'Memory: 9 GB / 8 GB'.
- Code Cells:**
 - In [7]:** Imports numpy as np, cupy as cp, and time.
 - In [8]:** Titled '### Numpy dan CPU'. It initializes a 100x1000x1000 array on the CPU, times the execution, and prints 'Waktu yang diperlukan untuk CPU : 0.11062264442443848'.
 - In [9]:** Titled '### CuPy dan GPU'. It initializes a 100x1000x1000 array on the GPU, times the execution, and prints 'Waktu yang diperlukan untuk GPU : 0.5453319549560547'.
 - In [10]:** Titled '### Nilai yang akan dikalikan dengan array'. It sets n=7, initializes an array on the CPU, times the execution, and prints 'Waktu yang diperlukan untuk CPU : 0.09641170581708904'.
 - In [11]:** Titled '### CuPy and GPU'. It sets n=7, initializes an array on the GPU, times the execution, and prints 'Waktu yang diperlukan untuk GPU : 0.1005531883239746'.
- Input Field:** A new cell labeled 'In []:' is at the bottom.
- Taskbar:** The Windows taskbar at the bottom shows the Start button, Search, and several open applications including WhatsApp, a file explorer, and a terminal.