

Tugas I Tutorial

SK5003 30/3/2023

Dalam tugas tutorial ini diharapkan mahasiswa melakukan percobaan, eksplorasi, dan mengembangkan code program yang diberikan. Tugas dikumpulkan dalam **format pdf** pada **Hari Minggu, 2 April 2023 Jam 16.30 WIB (batas maksimal)**. Dikirim melalui email: 20921007@mahasiswa.itb.ac.id dengan **subject dan nama file Tugas I Tutorial_NIM_Nama**

Untuk soal 1 s/d 4, tentukanlah output dari program tersebut. Kemudian kembangkan satu dari empat program yang diberikan. Sertakan juga penjelasan singkat mengenai program yang anda kembangkan tersebut.

Soal 1

```
print("The number pi is a mathematical constant
that is the ratio of a circle's ")

print("Pi = 3.14159265358979323846", end='\r')

print("The first recorded algorithm for
rigorously calculating the value of  $\pi$  was a
geometrical approach using polygons", end='\r')

print("(*)")
```

Soal 2

```
#x = 0 -- change code but reserve the old one

x = 2*5

print("Nilai x=", x+1)

""" -- change lines of code but reserve the old ones

y = 10

print(y)

"""

y = x + 3 + 4 * (10-3)

print("Nilai y=", y+4)
```

Soal 3

```
a = [1, 2, 3, 4]
y = [10, 5, 3.75, 4]

for i in a:
    for j in y:
        print(i, j*5)
```

Soal 4

```
# Membuat fungsi dengan parameter
def luas_persegipanjang(panjang, lebar):
    luas = (panjang * lebar)
    print("Luas persegi panjang: %d" % luas);

# Pemanggilan fungsi
luas_persegipanjang(3, 5)
```

Untuk soal 5 dan 6, kerjakan soal-soal tersebut dengan menggunakan teknik Markdown dalam menuliskan non code pada IDE Python (Jupyter Notebook, VS Code).

Soal 5

Energy	Energy store	Renewable or non-renewable	Uses	Power output	Impact on environment
Fossil fuels (oil, coal and natural gases)	Chemical	Non-renewable	Transport, heating, electricity generation	High	Releases CO ₂ (causes global warming)
Nuclear fuels	Nuclear	Non-renewable	Electricity generation	Very high	Radioactive waste (needs to be disposed of safely)
Biofuel	Chemical	Renewable	Transport, heating, electricity generation	Medium	Carbon-neutral so low impact
Wind	Kinetic	Renewable	Electricity generation	Very low	Take up large areas that could be used for farming, people say windmills spoil their view
Hydroelectricity	Gravitational potential	Renewable	Electricity generation	Medium	Local habitats are affected by the large areas that need to be flooded to build dams
Geothermal	Internal	Renewable	Electricity generation, heating	Medium	Very low
Tides	Kinetic	Renewable	Electricity generation	Potentially very high but hard to harness	Tidal barrages can block sewage which needs to go out to sea
Sun	Nuclear	Renewable	Electricity generation	Potentially very high, but hard to harness	Very little
Water waves	Kinetic	Renewable	Electricity generation	Low	Very low

(source: bbc.co.uk)

Soal 6

Buatlah suatu definisi dari Persamaan Matematika (ODE, PDE, Numerik, dan lainnya) disertai dengan bentuk umum persamaannya.

Good Luck!