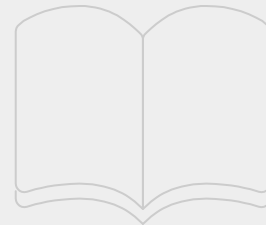


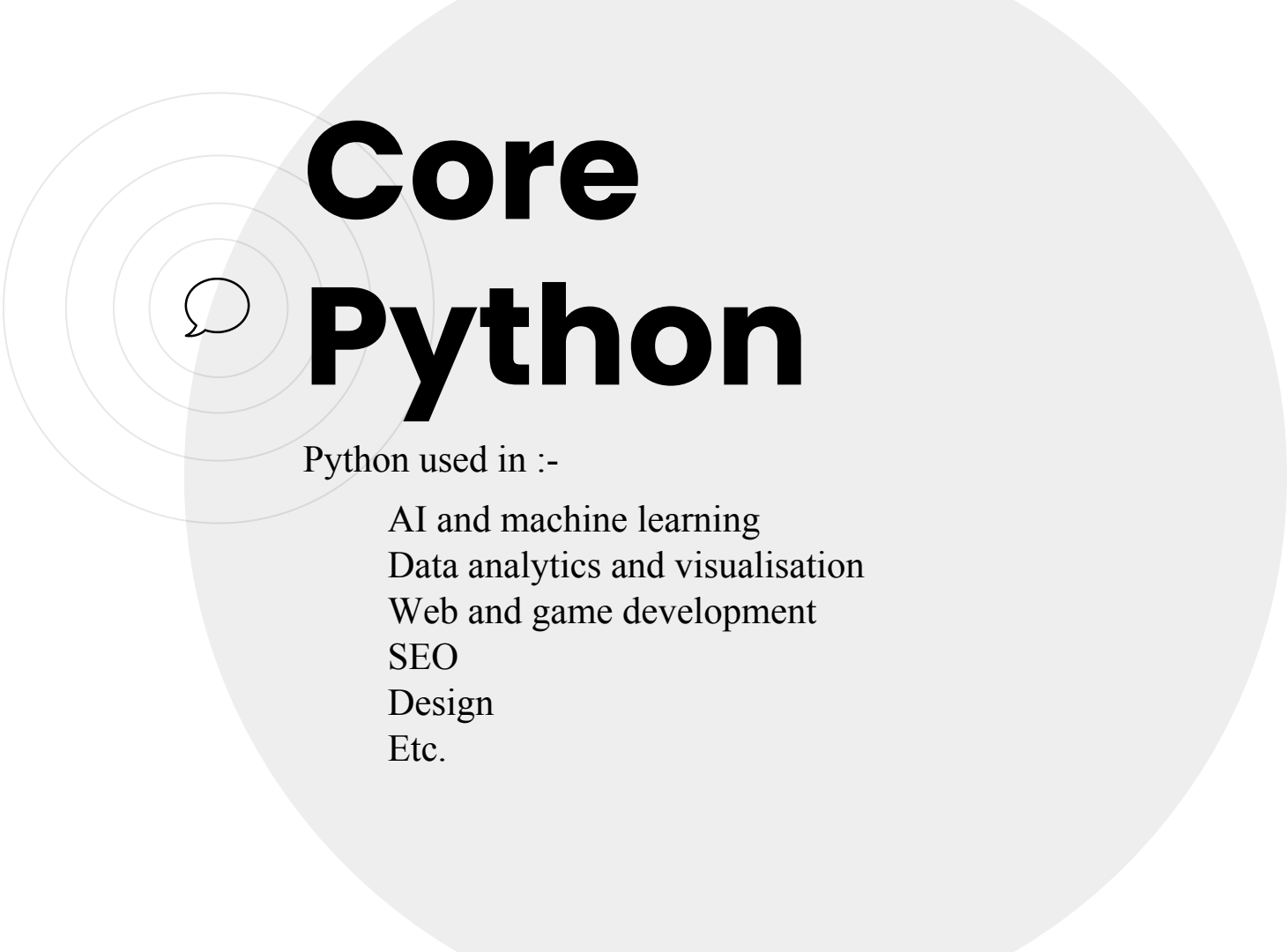
Programming using Python – I



Syllabus Overview

1. Core Python
2. Python GUI
3. Django
4. Flask





Core Python

Python used in :-

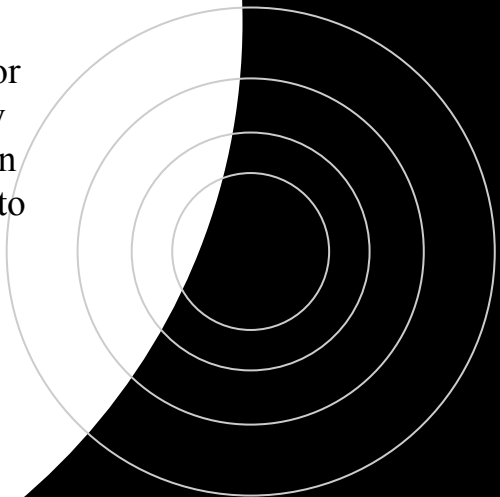
- AI and machine learning
- Data analytics and visualisation
- Web and game development
- SEO
- Design
- Etc.



1

Map

Map in Python is a function that works as an iterator to return a result after applying a function to every item of an iterable (tuple, lists, etc.). It is used when you want to apply a single transformation function to all the iterable elements.



Syntax of Map :

`map(function, iterables)`

1. **function:** It is the transformation function through which all the items of the iterable will be passed.
2. **iterables:** It is the iterable (sequence, collection like list or tuple) that you want to map.





Example 1:

```
def multiply(i):
```

```
    return i * i
```

```
# Using the map function
```

```
x = map(multiply, (3, 5, 7, 11, 13))
```

```
print(list(x))
```

OUTPUT : [9,25,49,121,169]

Map and for loop difference

```
num = [3, 5, 7, 11, 13]
```

```
mul = []
```

```
for n in num:
```

```
    mul.append(n ** 2)
```

```
print (mul)
```

```
def mul(i):
```

```
    return i * i
```

```
num = (3, 5, 7, 11, 13)
```

```
resu = map(mul, num)
```

```
print(resu)
```

```
mul_output = list(resu)
```

```
print(mul_output)
```



Example 2: Map with built in function

```
example = ["Welcome", "to", "Sem 3"]
```

```
x = list(map(len, example))
```

```
print(x)
```

OUTPUT : [7,2,4]



Example 3: Map with lambda

```
num = (6, 9, 21, 44)
```

```
resu = map(lambda i: i + i, num)
```

```
print(list(resu))
```

OUTPUT : [12,18,42,88]



Example 4: Map with tuple

```
def example(s):  
    return s.upper()  
  
tuple_exm = ('this','is','map')  
  
upd_tup = map(example, tuple_exm)  
  
print(tuple(upd_tup))
```

OUTPUT : ('THIS', 'IS', 'MAP')

Example 5: Map with dictionary

```
car_dict = {'a': 'Mercedes-Benz', 'b': 'BMW', 'c': 'Ferrari', 'd': 'Lamborghini', 'e': 'Jeep'}
```

```
# adding an '_' to the end of each value
```

```
car_dict = dict(map(lambda x: (x[0], x[1] + '_'), car_dict.items() ))
```

```
print('The modified dictionary is : ')
```

```
print(car_dict)
```



Example 6: Map with set

```
def example(i):
```

```
    return i%3
```

```
set_exm = {33, 102, 62, 96, 44, 28, 227}
```

```
upd_itms = map(example, set_exm) # divisible by 3 or not
```

```
print(set(upd_itms))
```

Assignment

1. Triple all the numbers given in list
2. Separate even odd number from given list
3. Print all string in lower case from given tuple
4. Print square root of numbers given in list
5. Eliminate duplicate letter from given string
6. Print table of any number
7. Add two list
8. Convert all float digits into integer using built in function from given list.
9. Reverse given set
10. Add '@gmail.com' to all the values of given dictionary and convert it to lower case.