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Module?

Modules is a python file which contains python code like functions, classes , variables	

It is saved with .py

Why use modules?

- Reusability
- Code organization
- Easy debugging
- Save time
- Collaboration-friendly
- Reduce duplication

1. Built-in module
2. User defined

Builtin modules:
How to import :

1. Import module name : import complete module : import math -->math.sqrt(20)
2. From module import function names :from math import sqrt,pi --> sqrt()
3. From module import * : not recommended --> sin(1)
4. Import module as alias : import datetime as dt

```
# print(help("modules"))
##############  Math ###
# it contains mathematical functions like, sqrt,pi,logorithms,trigonometri,rounding,power,..etc
# # math.sqrt() --> gives caluculation squire root of a number
# import datetime as dt
import math
import random
import sys
# loc= r'c:\Users\babud\Desktop\wipro3\Day 4\function_python.py'
sys.path.append(r'c:/Users/babud/Desktop/wipro3/day4')
sys.path.append(r"C:\Users\babud\Desktop\wipro3\billing")
import billing
import  function_python
print(billing.addition(10,30))
# print(function_python.fact(5))
# print(math.sqrt(10))
# #math.pow(x,y)
#  it returns x power y
# print(math.pow(2,3))
# print(math.ceil(4.9)) #rounding UP
# print(math.floor(4.9)) # rounding Down
# r=10
# print(math.pi * r * r)
# print(f" from math {math.factorial(10)}")
# print(f" from udm {fac.fact(20)}")
########## datetime module #########
# its used to work with date,time,timestamps,time difference
from datetime import datetime,date,time,timedelta
# print(datetime.now()) # date along with timmestamp
# print(date.today()) #date
```

```
# formate datetime into string
# now=datetime.now()
# # format using strftime
# formatted=now.strftime("%d-%m-%y  %H:%M:%S")
# print("current date and atime : ",formatted)
# print(type(now))
# datetime.strptime()--> convert a string in to date time object
# date_string="2025-01-17"
# # print(type(date_string))
# converted_datetime=datetime.strptime(date_string,"%Y-%m-%d")
# print("year",converted_datetime.year)
# print("month",converted_datetime.month)
# print("Day",converted_datetime.day)
#timedelta
# differecnce between 2 dates
# now=datetime.now()
# print("current" , now)
# lswd=now + timedelta(days= 60)
# print(f"your last working day is {lswd}")
# joingdaay= now - timedelta(days=30)
# print(f"the day of joined 30dyays {joingdaay}")
# afterhours= now + timedelta(hours=3)
# print(afterhours)
# today= date.today()
# print(today)
# random module:
    # it is used for random  number generation,shuffling,
    # random.randint(a,b) random integers with i the range
# print("your otp is ",random.randint(10000,20000)) #generate OTP
# random.choice  pick one random item
# print(random.choice(["apple","banana","grapes","lime"]))
# numbers=[1,2,3,4,5,6]
# print("numbers before shuffle" ,numbers)
# random.shuffle(numbers)
# print("after shuffle" ,numbers)
# SYS module:
# provideds access to python interpreter internal
#print(sys.version) # used to find version of your python along with build information
# username=input("enter the name") #sys.exit() used to exit flow of execution safely
# if username=="":
#     print("no user name enerted ...exiting")
#     sys.exit()
# print("welcome ",username)
# sys.argv
# sys.path() it returns a list of directories python searches to find the module
# for p in sys.path:
#     print(p)

# x=10
# s="hello"
# print(sys.getsizeof(x)) # used to retun the size of memory taken by the variables (bytes)
# print(sys.getsizeof(s))

# print(os.getcwd()) # used to get current working directory
# print(os.listdir()) # print list of files inside ur directory
# os.mkdir("day8_notes")
# print("Folder created!")
# for  r in range(1,100):
#     os.mkdir(f"day{r}_note ")
```