datetime Module in Python

The datetime module in Python provides classes and functions to work with **dates, times, and time intervals**.

The datetime module in Python is used to **work with dates and times**. It allows you to get the current date/time, format it, perform date arithmetic, and more.

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1. Importing the Module

```
import datetime
```

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2. Getting Current Date and Time

```
now = datetime.datetime.now()
print(now)  # Example: 2025-04-04 21:00:30.123456
```

To get only the **date** or **time**:

```
print(now.date())   # 2025-04-04
print(now.time())   # 21:00:30.123456
```

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3. Get Today's Date

```
today = datetime.date.today()
print(today)  # Example: 2025-04-04
```

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4. Create a Specific Date or Time

```
my_date = datetime.date(2025, 12, 25)
print(my_date)  # 2025-12-25

my_time = datetime.time(14, 30, 0)
print(my_time)  # 14:30:00
```

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5. Date Arithmetic (Add/Subtract Days)

Use timedelta for date calculations:

```
from datetime import timedelta

today = datetime.date.today()
tomorrow = today + timedelta(days=1)
yesterday = today - timedelta(days=1)

print("Today:", today)
print("Tomorrow:", tomorrow)
print("Yesterday:", yesterday)
```

Date Arithmetic (Timedelta)

➤ Creating a timedelta

```
from datetime import timedelta

delta = timedelta(days=5, hours=3)
print(delta)  # 5 days, 3:00:00
```

➤ Adding/Subtracting dates

```
now = datetime.now()
future = now + timedelta(days=7)
past = now - timedelta(days=30)

print(future)  # 7 days from now
print(past)    # 30 days ago
```

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6. Formatting Date and Time (strftime)

Convert a datetime object to a string format:

```
from datetime import timedelta



now = datetime.datetime.now()
formatted = now.strftime("%Y-%m-%d %H:%M:%S")
print(formatted)  # 2025-04-04 21:03:00


print(now.strftime("%Y-%m-%d"))      # 2025-04-04
print(now.strftime("%d/%m/%Y"))      # 04/04/2025
print(now.strftime("%I:%M %p"))      # 02:23 PM
print(now.strftime("%A, %B %d"))     # Friday, April 04
```

Format Code	Meaning	Example
%Y	Year (4 digits)	2025
%m	Month (01 to 12)	04
%d	Day of the month	04
%H	Hour (24-hour)	14
%I	Hour (12-hour)	02
%p	AM or PM	PM
%A	Full weekday name	Friday
%B	Full month name	April

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7. Parsing Date String (strptime)

Convert a string into a datetime object:

```
from datetime import datetime

date_string = "25/12/2023 10:30 AM"
parsed_date = datetime.strptime(date_string, "%d/%m/%Y %I:%M %p")
print(parsed_date)  # Output: 2023-12-25 10:30:00
```

8. Get Day, Month, Year, etc.

```
now = datetime.datetime.now()
print(now.year)    # 2025
print(now.month)   # 4
print(now.day)     # 4
print(now.hour)    # 21
print(now.minute)  # 0
```

9. Working with date and time classes

➤ **date object (only date)**

```
from datetime import date

today = date.today()
print(today)          # Output: 2025-04-04
print(today.year)     # 2025
```

➤ **time object (only time)**

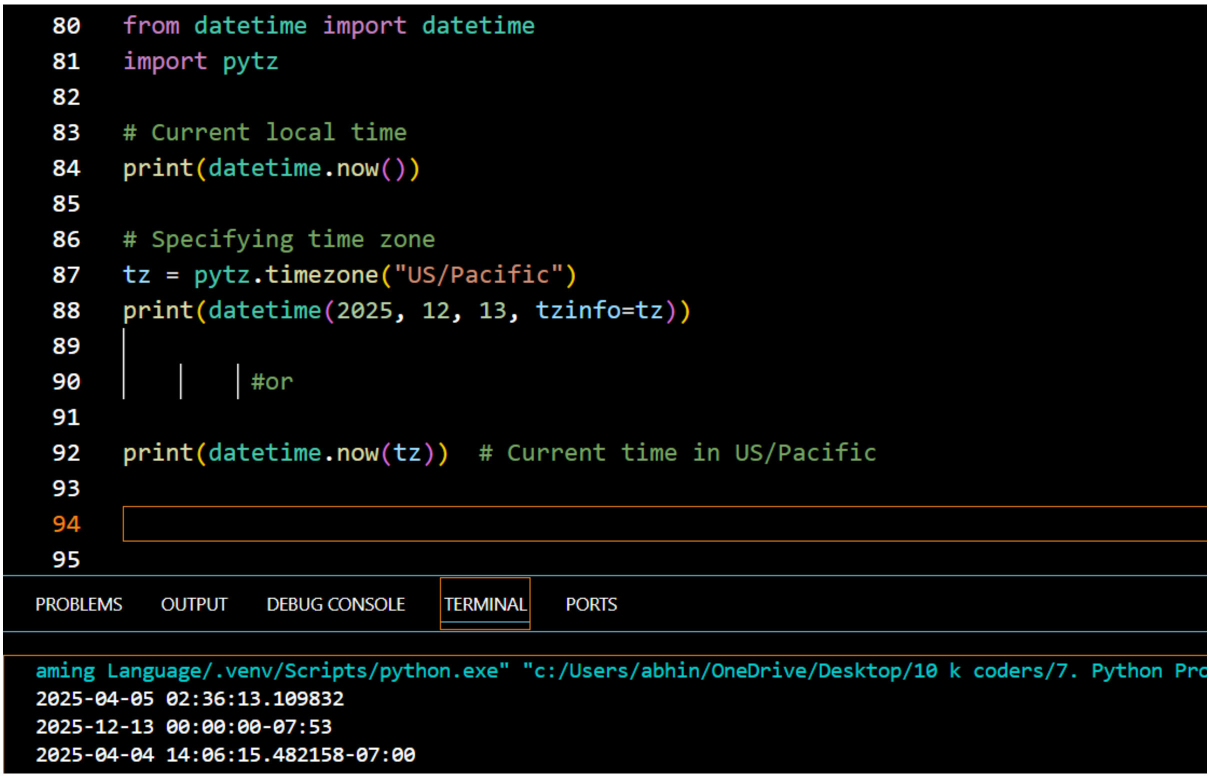
```
from datetime import time

t = time(10, 45, 30)
print(t)            # Output: 10:45:30
print(t.hour)       # 10
```

10. Get Day of the Week

```
today = datetime.today()
print(today.strftime("%A"))  # Output: Friday

# Using weekday() method
print(today.weekday())  # Output: 4 (Monday=0, Sunday=6)
```



```python
from datetime import datetime
import pytz

# Current local time
print(datetime.now())

# Specifying time zone
tz = pytz.timezone("US/Pacific")
print(datetime(2025, 12, 13, tzinfo=tz))

        #or

print(datetime.now(tz))  # Current time in US/Pacific


```

```
aming Language/.venv/Scripts/python.exe" "c:/Users/abhin/OneDrive/Desktop/10 k coders/7. Python Pro
2025-04-05 02:36:13.109832
2025-12-13 00:00:00-07:53
2025-04-04 14:06:15.482158-07:00
```

✅ Summary Table

Function / Class	Description
datetime.now()	Current date and time
datetime.today()	Today's date
datetime.strptime()	Parse string to datetime
datetime.strftime()	Format datetime to string
datetime(year, m, d, h, m)	Create custom datetime object
date.today()	Returns current date
timedelta(days=, hours=)	Create time difference
datetime + timedelta	Future date
datetime - timedelta	Past date

💡 Real-World Example: Countdown Timer

```
from datetime import datetime, timedelta

event_date = datetime(2025, 12, 31, 23, 59)
now = datetime.now()
remaining = event_date - now

print(f"Time remaining for New Year: {remaining.days} days and {remaining.seconds // 3600} hours")
```

Would you like a **mini-project using datetime** like a digital clock, birthday countdown, or age calculator? ⏳