III B.Tech.

Computer Science & Engineering

CSE304: PYTHON PROGRAMMING WITH WEB FRAMEWORKS

UNIT-II: Working with Date and Time

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Classes supporting Date and Time

- Module - datetime
  - date – contains only date, not time information
  - time – contains only time, not date information
  - datetime – contains both date and time information
- Importing specific classes
  - from datetime import date
  - from datetime import time
  - from datetime import datetime
- Importing all classes
  - from datetime import date, time, datetime

Creating date/time objects

- To get current date:
  - date.today()

- To get current date and time:
  - datetime.now()

- To create a specific date / time object
  - date(year, month, day)
  - time([hour] [, min] [, sec] [, microsec])
  - datetime(year, month, day [, hour] [, min] [, sec] [, microsec])

Creating date/time objects by parsing string representation

- For creating specific datetime object by parsing the string representation
  - datetime.strptime(datetime_str, format_str)
- Format string codes

Code	Description
%d	Day of month as number
%m	Month as number
%y	2-digit year
%Y	4-digit year
%H	Hour of day in 24-hour format
%M	Minute as number
%S	Second as number

Printing Date/Time using format codes

- Printing date and time using strftime()
  - strftime(format_str)

Code	Description	Example
%a	Abbreviated weekday name	Sat
%A	Full weekday name	Saturday
%b	Abbreviated month name	Oct
%B	Full month name	October
%d	Zero padded day of month	01
%m	Zero padded month as number	01
%Y	4-digit Year	2020
%y	2-digit Year	20

Printing Date/Time using format codes

Code	Description	Example
%H	Hour of day in 24-hour format	15
%T	Hour of day in 12-hour format	03
%M	Minute as number	50
%S	Second as number	50
%p	AM / PM Specifier	AM
%f	Microsecond	01532219
%c	Date and time formatted for locale	Mon Oct 31 01:15:15 2016
%x	Date formatted for locale	10/31/16
%X	Time formatted for locale	01:15:15

Working with Time Span

- from datetime import timedelta

- Creating timedelta using constructor
  - timedelta([days] [, seconds] [, microseconds] [, milliseconds] [, minutes] [, hours] [, weeks])
  - Attributes of timedelta:
    - days   - Number of days
    - seconds   - Number of seconds in addition to days
    - microseconds   - Number of micro seconds in addition to days and seconds
    - total_seconds() - Total number of seconds and microseconds

Extracting date and time parts from datetime

Attribute	Description
year	Returns the year as a 4-digit number
month	Returns the month as a number from 1 to 12
day	Returns the day as a number from 1 to 31
hour	Returns the hour as a number from 0 to 23
minute	Returns the minute as a number from 0 to 59
second	Returns the second as a number from 0 to 59
microsecond	Returns the microsecond as a number from 0 to 999999