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III B.Tech.

Computer Science & Engineering

CSE304: PYTHON PROGRAMMING WITH WEB FRAMEWORKS

UNIT – I: DATA TYPES, OPERATORS, STATEMENTS

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Agenda

- Assessments for CIA
- List of Lab Exercises
- Data Types
- Operators
- Statements

Assessment for CIA

- Evaluation Pattern
  - CIA – 25%
  - End Semester – 75%
- For CIA:
  - 8 assessments during every week Friday class hour at any 5 – 10 min. duration each for maximum 10 Marks
  - Best 5 out of 8 will be considered
  - Mode of tests will vary every week
  - It may be quiz or simple program or 2 marks descriptive type questions or scenario based programs
  - How to do lab exercises will also be dealt in the class and it also contributes to your CIA
- For End Semester:
  - Project-based Evaluation

List of Lab Exercises

1. Programs using numeric data types and string data
2. Programs using selection and iteration structures
3. Programs using functions and modules (built-in and user defined)
4. Programs using list, tuple, dictionary
5. Programs for file i/o with text and csv files
6. Programs for exception handling
7. Programs to demonstrate recursive algorithms
8. Programs to demonstrate inheritance
9. Programs to demonstrate file transfer between web clients and servers
10. Programs to host web applications using Django

Rules for coding Python Programs

- Proper Indentation should be used (standard 4 spaces)
- Incorrect indentation causes error
- You may continue a statement in next line
  - With implicit continuation, it may be divided after parentheses, braces, and before or after operators
  - With explicit continuation it may be divided using \ character to split the statement anywhere on a line
- To comment a line start with #.

DATA TYPES

- Every data is treated as object whether it is primitive or composite
- Even function is a callable object
- Primitive Data Types
  - Numeric Type
    - Integer
    - Floating Point
  - Non-numeric Type
    - String
    - Boolean (True, False)
- Composite Type
  - List
  - Tuple
  - Set
  - Dictionary
  - Function

Variable Names

- Rules
  - It can contain alphabets, digits, or underscore
  - Must begin with a letter or underscore
  - Cannot contain spaces or any special characters other than underscore
  - Cannot begin with a number
  - Cannot be a keyword
  - Case sensitive

Keywords


```
and       except    lambda    while
as        False     None      with
assert    finally   nonlocal  yield
break     for       not
class     from      or
continue  global    pass
def       if        raise
del       import    return
elif      in        True
else      is        try
```

Arithmetic Operators

- Addition (+)
- Subtraction (-)
- Multiplication (*)
- Division
  - Integer Division (//)
  - True Division (/)
  - Modulo Division (%)
- Exponentiation (**)

Other Operators

- Other Operators

  =, +=, -=, *=, /=, //=, %=, **=

- Relational Operators

  <, >, <=, >=, ==, !=

- Logical Operators

  and, or, not

- Common Escape Sequences

  \n, \r, \t, \\, \', \"

Simple functions

- To display - print () function
  - print(data [, sep=‘ ’] [, end=‘\n’])
- To convert any object to String - str() function
  - str(any_object)
- To get input from user - input() function
  - input([prompt])
- For conversion from string to integer or float
  - int(), float()
- For rounding a floating point number
  - round(number [, digits])