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III B.Tech.

Computer Science & Engineering

CSE304: PYTHON PROGRAMMING WITH WEB FRAMEWORKS

UNIT – I: INTRODUCTION

By
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School of Computing

Agenda

- Overview of syllabus
- Text books and Reference books
- Python Installations
  - Using IDLE
  - Using Anaconda Navigator
- Introduction to Python

Syllabus

CSE304 PYTHON PROGRAMMING WITH WEB FRAMEWORKS

TEXT BOOKS

- Michael Urban, Joel Murach. *Murach's Python Programming,* Mike Murach & Associates, First Indian Reprint, 2017.
  - Unit-I: Chapters 1 to 6
  - Unit-II: Chapters 7 to 13
  - Unit-III: Part-1: Chapters 14 & 15
- Wesley J. Chun, *Core PYTHON Applications Programming*, Prentice Hall, Third Edition, 2013.
  - Unit-III: Part-2: Chapter 3
  - Unit-IV: Chapters 9 & 11

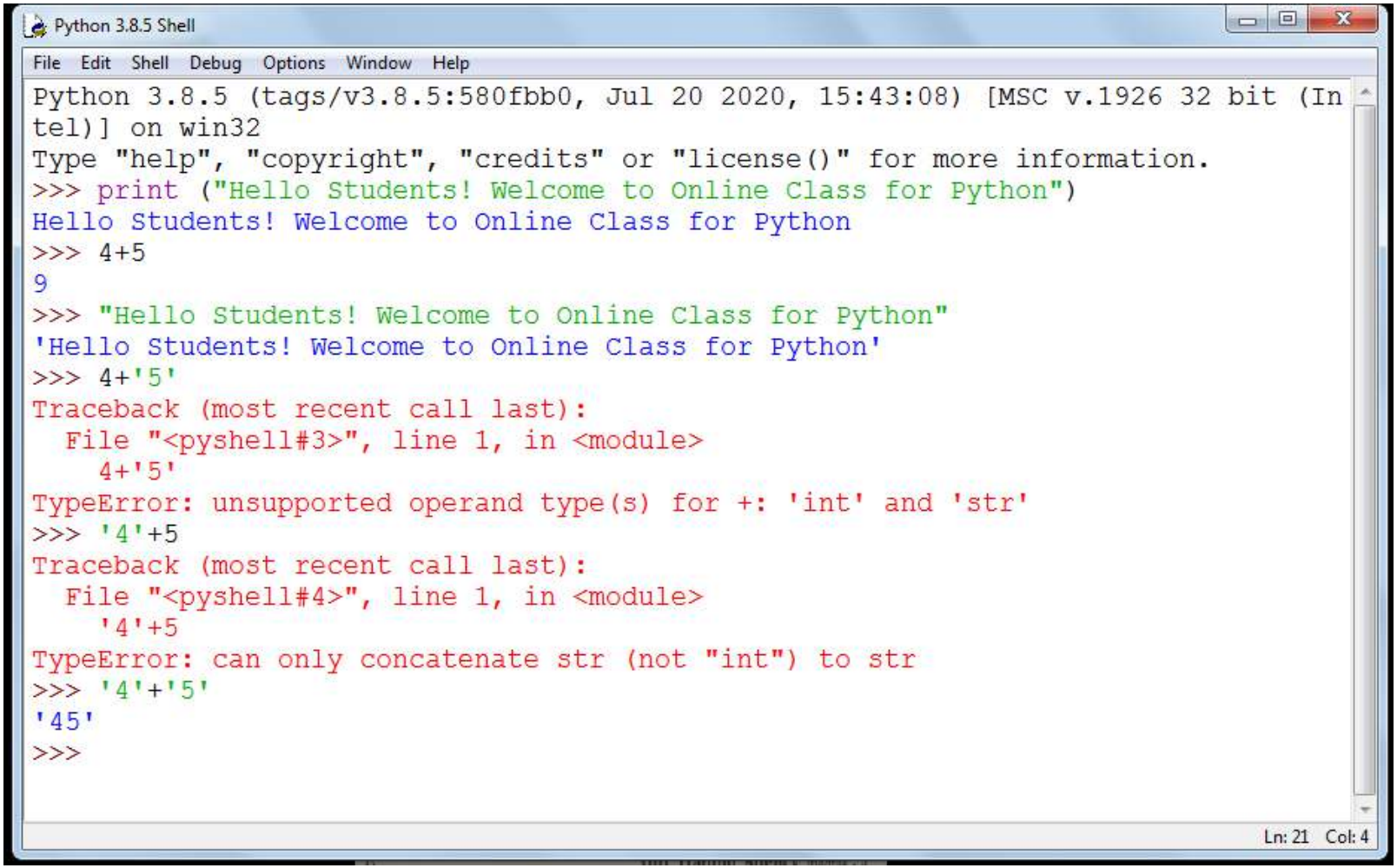
REFERENCE BOOKS

1. Mark Lutz, *Learning Python*, O'Reily Media, Fifth Edition, 2013
2. Adrian Holovoty, and Jacob Kaplan-Moss, *The Definitive Guide to Django: Web Development Done Right*, Second Edition, Apress, 2009

Installing Python IDLE

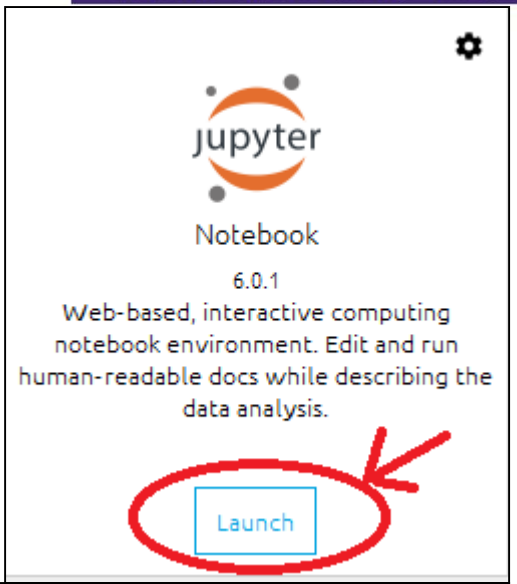
- Python 3.8.5 through IDLE
  - Download Python 3.8.5 for windows from GCR
  - Run the setup file
  - Check “Add Python 3.8.5 to PATH”
  - Press “Install Now”
- Run
  - Through IDLE platform
    - Through interactive shell
    - Through functions and modules
  - From command prompt

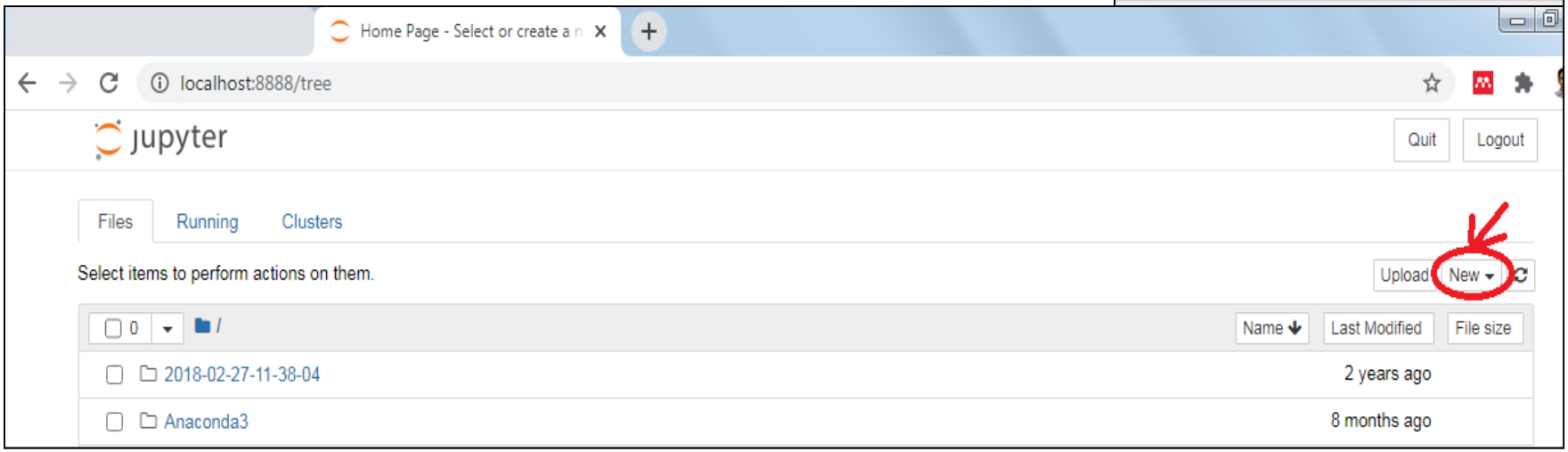
Interactive Shell



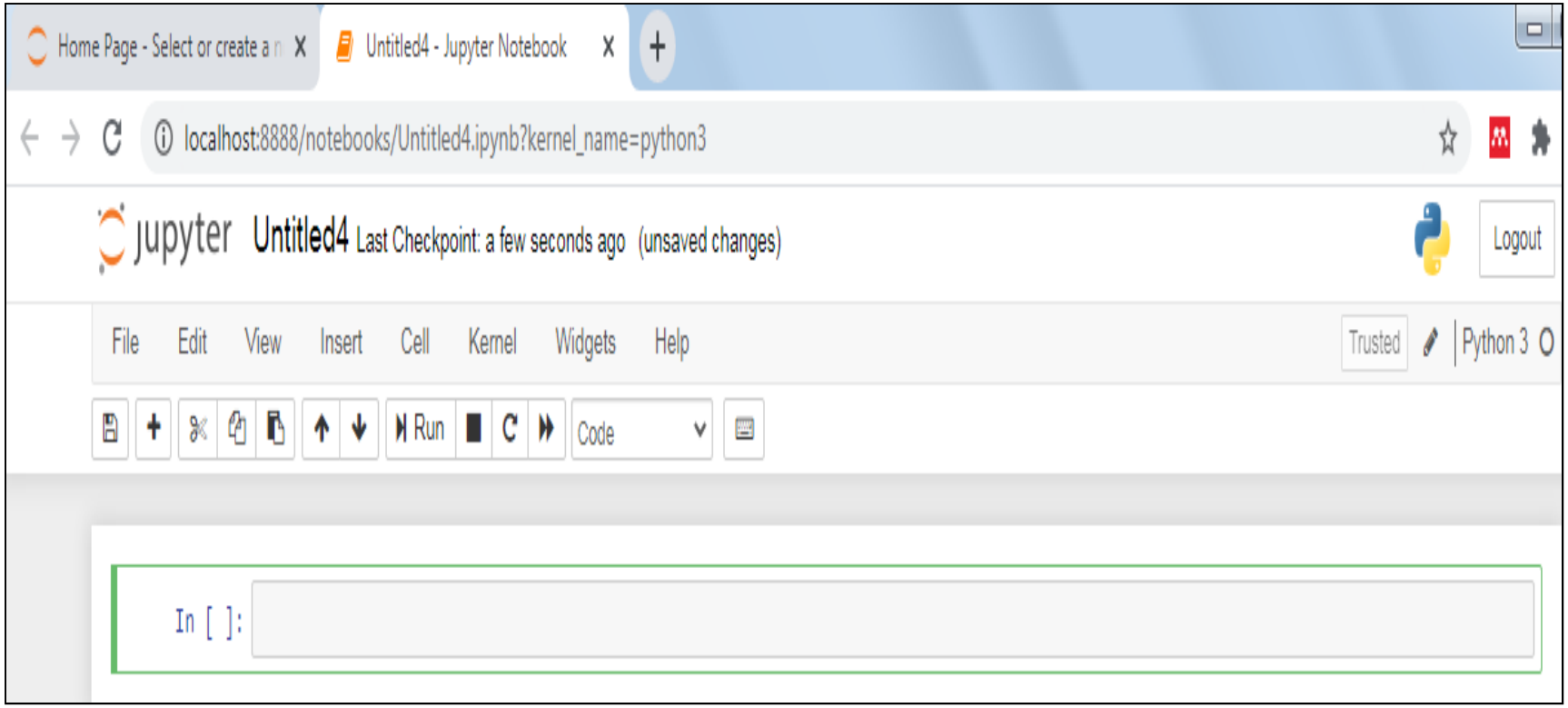
Installing Anaconda

- Install Anaconda
  - Download Python for windows from GCR
  - Run the setup file
- Start Anaconda Navigator
  - Launch Jupyter Notebook
  - Jupyter will launch in browser
  - Select New → Python 3

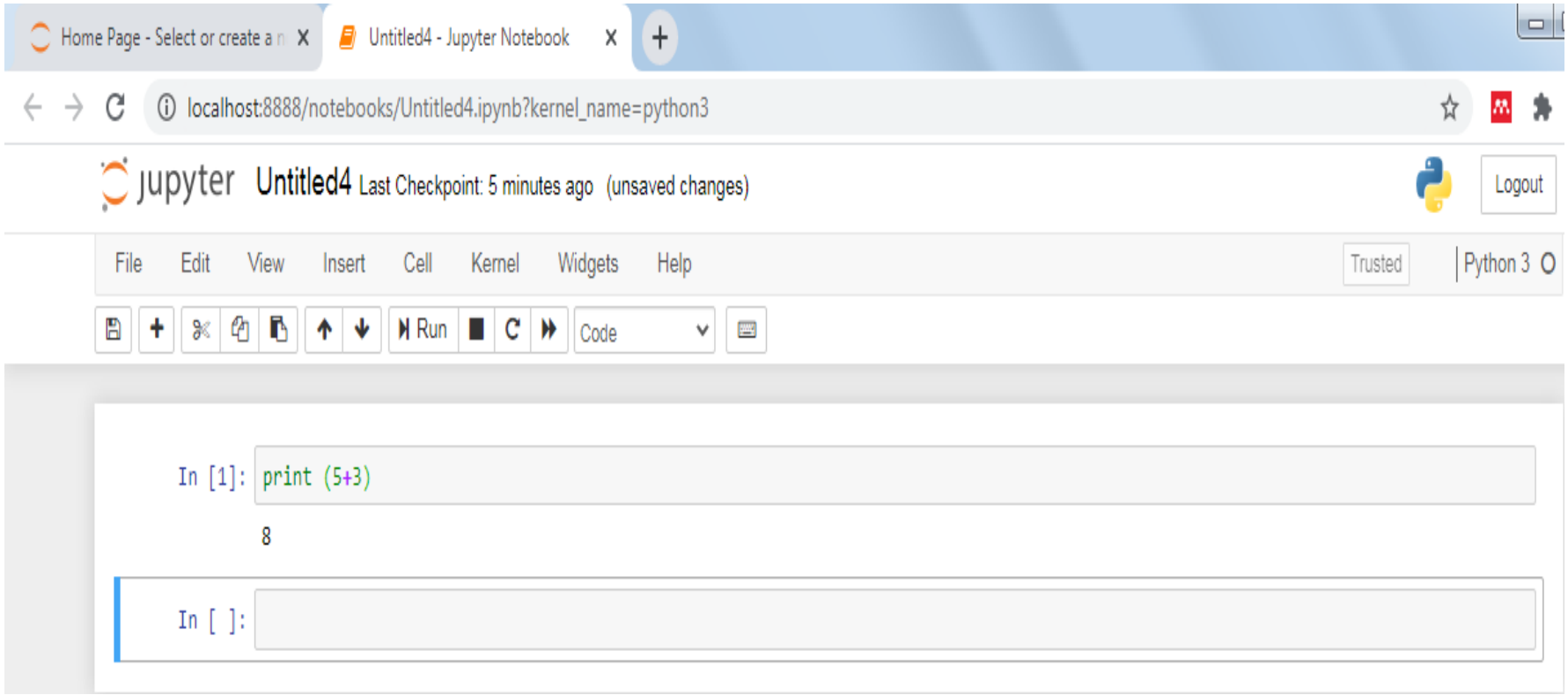




- The notebook will open in new browser window



- Type python code in In [ ] cell and press Shift+Enter to run it



Why Python?

- Software Quality
  - More readable, Reusable and Maintainable than other scripting tools due to Objected Oriented Approach
- Developer Productivity
  - Easy to type, debug, and maintain
  - Run interactively
- Program Portability
  - Portable to many OS platforms
- Support Libraries
  - Text Pattern Matching
  - Numeric Programming
  - Network Scripting
  - Game Development
  - Embedded Programming
- Component Integration
  - Integrate with modules in other programming languages C, C++, Java
  - Communicate over frameworks like COM, Silverlight
  - Interact with interfaces like SOAP, XML-RPC, CORBA

Introduction

- Started designing Python language in December, 1989
- Initial Python version 0.9 released in February, 1991
- Python 1 first released in January, 1994
- Python 2 first released in October, 2000
- Python 3 first released in December, 2008
- Latest version Python 3.8.5 released in October 2019
- Next version Python 3.9 planned to be released in October 2020
- Next version Python 3.10 planned to be released in October 2021

Comparison between Java and Python

- Java Code

```
private static double calculateFutureValue(
    double monthlyInvestment, double monthlyRate, int months)
{
    double futureValue = 0.0;
    for (int i = 1; i <= months; i++) {
        futureValue =
            (futureValue + monthlyInvestment) * (1 + monthlyRate);
    }
    return futureValue;
}
```

- Python Code

```
def calculateFutureValue(monthlyInvestment, monthlyRate, months):
    futureValue = 0.0
    for i in range(months):
        futureValue =
            (futureValue + monthlyInvestment) * (1 + monthlyRate)
    return futureValue
```

Types of Python Applications

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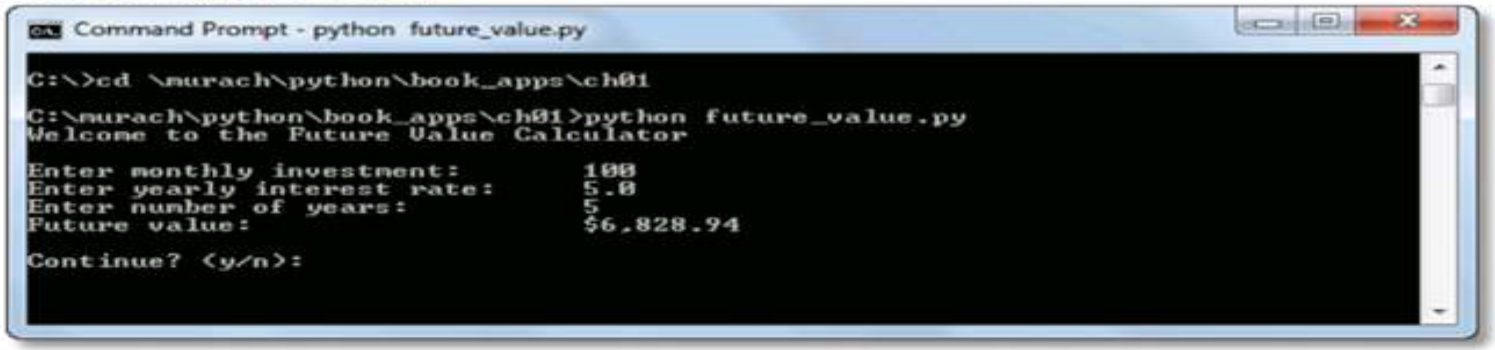
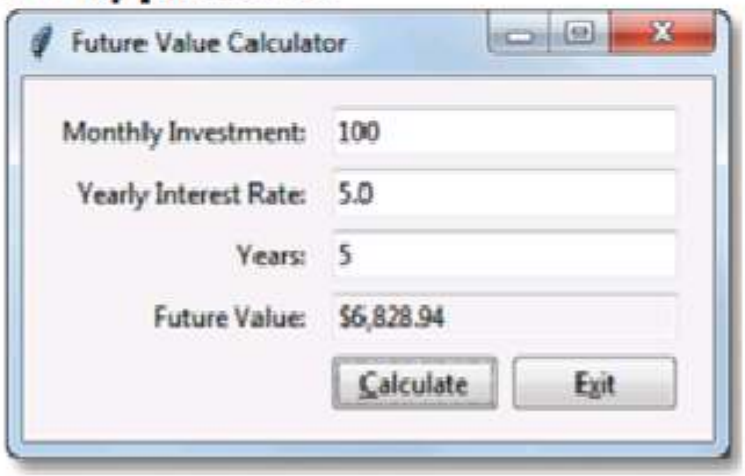
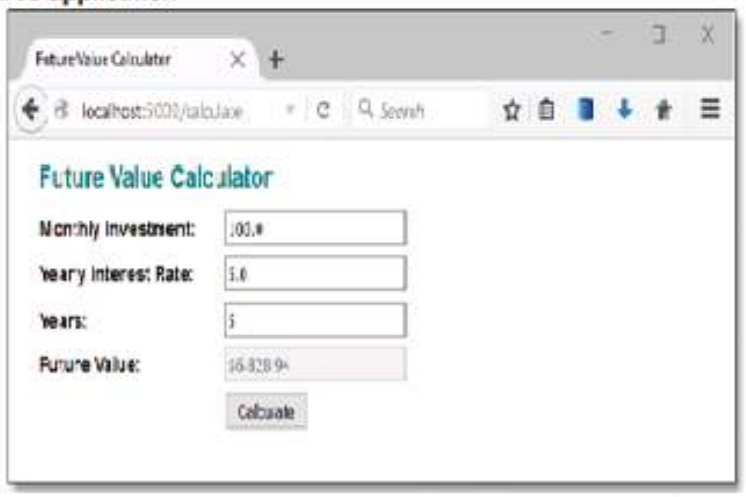
A console application



A GUI application



A web application



Python Program Execution