FACULTY OF COMPUTING & INFORMATION TECHNOLOGY
KING ABDULAZIZ UNIVERSITY

كلية الحاسبات وتقنية المعلومات
جامعة الملك عبدالعزيز

CPIT 110

Instructor Manual

For 50 Minutes Lectures

Week 5

29/9/2019 – 03/10/2019

Chapter 2

Elementary Programming

Chapter 3

Mathematical Functions, and Strings

This Week Events	– Lab #4 (Chapter 2 – Part 2)
Next Week Events	– Lab #5 (Chapter 3)

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Instructor Manual – Lecture #1 in Week 5

Chapter	2. Elementary Programming
Number of Lectures	3 (50 minutes / Lecture)
Lecture	6 of 6
Slides	158 - 179
Date	Sunday 29/09/2019

Week	Lecture
5	6 of 6
	Slides 158 - 179

Topics to Be Covered

- **2.13. Software Development Process [...Continued]**
- **2.14. Case Study: Computing Distances**
  - Listing 2.9

Topics Not to Be Covered

- **2.14. Case Study: Computing Distances**
  - Listing 2.10

Learning Objectives

Learning Outcomes	Topics
– To describe the software development process by applying it to develop a loan payment program.	1.13. Software Development Process
– To compute the distance between two points.	1.14. Case Study: Computing Distances

Exercises

- **2.13. Software Development Process**
  1. In which process involves translating the system design into programs?
  2. In which process seeks to identify the system input and output?
  3. In which process ensures that the code meets the requirements specification and weeds out bugs?
- **1.14. Case Study: Computing Distances**
  1. Write a statement that computes $\sqrt{a}$

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Instructor Manual – Lecture #2 in Week 5

Chapter	3. Mathematical Functions, and Strings
Number of Lectures	3 (50 minutes / Lecture)
Lecture	1 of 3
Slides	1 - 28
Date	Tuesday 01/10/2019

Week	Lecture
5	1 of 3
	Slides 1 - 28

Topics to Be Covered

- **3.1. Introduction**
- **3.2. Common Python Functions**

Learning Objectives

Learning Outcomes	Topics
– To solve mathematics problems by using the functions in the math module.	3.2. Common Python Functions

Exercises

- **3.2. Common Python Functions**
  1. Evaluate the following functions:

math.sqrt(4)	math.floor(-2.5)	round(3.5)	round(-2.5)
min(2, 2, 1)	math.ceil(2.5)	math.floor(2.5)	max(2, 3, 4)
round(-2.5)	abs(-2.5)	round(2.6)	math.ceil(-2.5)

  2. Write a statement that converts 47 degrees to radians and assigns the result to a variable.
  3. Write a statement that converts π / 7 to an angle in degrees and assigns the result to a variable.

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Instructor Manual – Lecture #3 in Week 5

Chapter	3. Mathematical Functions, and Strings
Number of Lectures	3 (50 minutes / Lecture)
Lecture	2 of 3
Slides	29 - 62
Date	Thursday 03/10/2019

Week	Lecture
5	2 of 3
	Slides 29 - 62

Topics to Be Covered

- **3.3 Strings and Characters**
  - 3.3.4. Escape Sequences for Special Characters
  - 3.3.5. Printing without the Newline
  - 3.3.6. The str Function
  - 3.3.7. The String Concatenation Operator
  - 3.3.8. Reading Strings from the Console
- **3.4. Case Study: Minimum Number of Coins**

Topics Not to Be Covered

- **3.3. Strings and Characters**
  - 3.3.1. ASCII Code
  - 3.3.2. Unicode Code
  - 3.3.3. The ord and chr Functions

Learning Objectives

Learning Outcomes	Topics
– To represent special characters using the escape sequence – To invoke the print function with the end argument. – To convert numbers to a string using the str function. – To use the + operator to concatenate strings. – To read strings from the keyboard.	3.3 Strings and Characters

Exercises

❖ **1.7. Programming Style and Documentation**

1. What is wrong in the following code? How do you fix it?

```
1  title = "Chapter " + 1
```

2. Show the result of the following code:

```
1  sum = 2 + 3
2  print(sum)
3  s = '2' + '3'
4  print(s)
```