CPIT 110

Instructor Manual

For 50 Minutes Lectures

Week 1

1/9/2019 – 5/9/2019

Chapter 0
Introduction to Problem-Solving

This Week Events	– None
Next Week Events	– Lab #1 (Chapter 1 – Part 1)

CPIT 110
Instructor Manual – Lecture #1 in Week 1

Chapter	0. Introduction to Problem-Solving
Number of Lectures	3 (50 minutes / Lecture)
Lecture	1 of 3
Slides	1 - 17
Date	Sunday 1/9/2019

Week 1	Lecture 1 of 3
	Slides 1 - 17

Topics to Be Covered

❖ **0.1. Problem-Solving & Computer Science**
- 0.1.1. What is Computer Science?
- 0.1.2. Algorithms

Learning Objectives

Learning Outcomes	Topics
− To explain what problem solving is, and why it is important. − To understand how to write algorithms.	0.1. Problem-Solving & Computer Science

Exercises

❖ **0.1 Problem-Solving & Computer Science**
- o What is the difference between Computer Science and Problem Solving?
- o What is an algorithm?

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Instructor Manual – Lecture #2 in Week 1

Chapter	**0. Introduction to Problem-Solving**
Number of Lectures	3 (50 minutes / Lecture)
Lecture	**2 of 3**
Slides	**18 - 47**
Date	Tuesday 3/9/2019

Week 1	Lecture **2 of 3**
	Slides **18 - 47**

Topics to Be Covered

❖ **0.2. Program Design & Problem-Solving Techniques**
- 0.2.1. How Do We Write a Program?
- 0.2.2. Problem-Solving Phase
- 0.2.3. Implementation Phase

❖ **0.3. Steps in Program Development**
- 0.3.1. Steps in Program Development
- 0.3.2. Designing a Solution (Algorithm)
- 0.3.3. Verifying the Algorithm

Learning Objectives

Learning Outcomes	Topics
− To describe how a program can be designed.	0.2. Program Design & Problem-Solving Techniques
− To describe algorithms in different forms.	0.3. Steps in Program Development

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Exercises

- ❖ **0.2. Program Design & Problem-Solving Techniques**
  - ○ What is the first step to write a program?
- ❖ **0.3. Steps in Program Development**
  - ○ What are the steps in Program Development?

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Instructor Manual – Lecture #3 in Week 1

Chapter	**0. Introduction to Problem-Solving**
Number of Lectures	3 (50 minutes / Lecture)
Lecture	3 of 3
Slides	48 - 101
Date	Thursday 5/9/2019

Week **1**	**Lecture** **3 of 3**
	Slides **48 - 101**

Topics to Be Covered

❖ **0.4. Algorithms, Pseudocode, and Flowcharts**
❖ **0.5. Decision Structures**

Learning Objectives

Learning Outcomes	Topics
− To understand the difference between algorithms and pseudocode. − To draw program flowcharts.	0.4. Algorithms, Pseudocode, and Flowcharts
− To understand the concept of decision structures.	0.5. Decision Structures

Exercises

❖ **0.4. Algorithms, Pseudocode, and Flowcharts**
   o What is the difference between the algorithm and Pseudocode?
❖ **0.5. Decision Structures**
   o Write an Algorithm, Pseudocode, and draw a flowchart that will:
     ▪ Check whether a person can drive or not.
     ▪ Check if a number is prime.
     ▪ Calculate Zakat of any amount. (Note: No Zakat if the amount is lower than 1200).