

ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Computer Science)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Internet Programming Language (3427/3582)

Level: MBA/IT – PGD (CS)

Semester: Autumn, 2012

Total Marks: 100

ASSIGNMENT No. 1

Note: All questions carry equal marks.

- Q.1 a) Explain what a Java application is. Why we use comments in Java applications?
b) Explain different data types used in Java with examples.
- Q.2 a) Briefly explain different types of loops used in Java Language?
b) What are the four essentials of counter controlled repetition?
- Q.3 Write Java statements to accomplish each of the following:
a) Display the value of the seventh element of character array.
b) Total the elements of floating-point array **c** of **100** elements.
c) Copy 11-element array **a** into the first portion of array **b**, containing 34 elements.
d) Determine and print the smallest and largest values contained in 99-element floating-point array **w**.
- Q.4 The factorial of a nonnegative integer n is written $n!$ (Pronounced “ n factorial”) and is defined as follows:
 $n! = n(n-1)(n-2)\dots 1$ (for values of n greater than or equal to 1) and $n! = 1$ (for $n = 0$).
For example, $5! = 5.4.3.2.1$, which is 120.
a) Write an application that reads a nonnegative integer from an input dialog and computes and prints its factorial.
b) Write an application that estimates the value of the mathematical constant e by using the formula
- $$e = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \dots$$

- Q.5 Differentiate between the following;
- a) References and reference parameter
 - b) Single subscripted array and multiple subscripted arrays
 - c) Third element of array and array element 3
 - d) Applet and application

ASSIGNMENT No. 2

- Q.1 Distinguish between inheriting interface and inheriting implementation. How do inheritance hierarchies designed for inheriting interface differ from those designed for inheriting implementation?
- Q.2
- a) What are packages in Java? Briefly describe the Java API packages.
 - b) Discuss why casting a superclass reference to a subclass reference is potentially dangerous?
- Q.3
- a) Distinguish between non-abstract methods and abstract methods.
 - b) Create a class **Rectangle**. The class has attributed length and width, each of which defaults to 1. It has method that calculates the perimeter and the area of the rectangle. It has set and get methods for both length and width. The set methods should verify that length and width are each floating-point numbers larger than 0.0 and less than 20.0.
- Q.4
- a) What is polymorphism? Describe the role of dynamic method binding in polymorphism.
 - b) Write an application that uses String method compare to compare to strings input by the user. Output whether the first string is less than, equal to or greater than the second.
- Q.5 Write a note on each of the following:
- a) This Reference
 - b) Protected members
 - c) Dynamic method Binding
 - d) Exception Types

3582 (Old 3427) Internet Programming Languages

Recommended Book:

JAVA, How to Program, By Deital & Deital 3rd Edition

Course Outlines:

Unit No.1 Introduction

- a) Introduction to Java Applications, Introduction
- b) Using Comments, Block of Codes, a Simple Java Program

Unit No.2 Data Types & Arrays

- a) Data Types, Declaring & Allocating Arrays
- b) References and Reference Parameters
- c) Searching Arrays, Multiple Subscripted Arrays

Unit No.3 Control Structures-I

- a) Selection Structure, While Repetition Structure

Unit No.4 Control Structures-II

- a) For Repetition Structure, Do/While Repetition Structure
- b) Break and Continue
- c) Multiple Selection Structure

Unit No.5 Object Oriented Programming-I

- a) Introduction to Class, Class Scopes, Creating Packages,
- b) Constructors, Set & Get Method
- c) This Reference, Finalizer, Static Class Member

Unit No.6 Object Oriented Programming-II

- a) Super Class, Sub Classes, Protected Members
- b) Inheritance, Polymorphism
- c) Dynamic Method Binding, Inner Class Definitions

Unit No.7 Packages, Interfaces, and Exception Handling

- a) Defining a Package, Access Protection, Importing Packages, Interfaces
- b) Exception-Handling Fundamentals, Exception Types, Using Try & Catch
- c) Java Built-In-Exceptions

Unit No.8 Strings & Characters

- a) String Constructors, String Comparing, String Methods
- b) String Concatenating
- c) String Classes, String Methods

Unit No.9 GUI

- a) Graphics Context, Graphic Methods, Color and Font Control
- b) Drawing Shapes, Java 2d API
- c) Java 2d Shapes, Swing Overview, Jtable, Event Handling Model
- d) Jbutton, Jtextfield, Jradiobutton, Jcheckbox, Jlist
- e) Multiple Selection List, Mouse Event Handling
- f) Keyboard Event Handling, Layout Managers.