

Course No: TEC 2408
Course Title: Programming 2
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No. of Section: 6 Sections
Time: 2 hour

University of Palestine



Final Exam
3st semester 2010/2011
Total Grade: 100

Instructor Name: Mohammed Shbier
Student No.: _____
Student Name: _____
College Name: _____
Dep. / Specialist: _____
Using Dictionary (No)

INFORMATION FOR CANDIDATE

1. This examination is worth 60% of the overall semester assessment.
2. The total number of marks available for this final examination is 100.
3. This exam paper contains **SIX (6)** sections in **EIGHT (8)** pages including the cover page.

INSTRUCTIONS TO CANDIDATE

1. Answer **ALL** questions.
2. Write all your answers in the answer booklet provided.
3. If you make a mistake please put a single diagonal line through the section you wish to be ignored by the examiner.
4. Return the all exam papers and scripts upon completion of the examination including any workings.

SECTION A

[10 marks]

ANSWER ALL QUESTIONS

- ()The switch statement can only accept an integer value as an argument.
- ()An applet uses the println() method to display text.
- ()Applets can run only within a browser or viewer.
- ()A method may not be called twice in the same program.
- ()The default case in a switch statement is required.
- ()To create an array of integers you can use “anArray = new int[10]; “
- () public modifier— the field is accessible only within its own class.
- () Overloading Methods means that methods within a class can have the same name if they have different parameter lists
- ()Object-oriented programming do not allows classes to inherit commonly used state and behavior from other classes.
- () =! Means not equal to

SECTION B

[16 marks]

ANSWER ALL QUESTIONS

1. The most basic control flow statement supported by the Java programming language is the () statement.
2. The () statement allows for any number of possible execution paths.
3. The () statement is similar to the `while` statement, but evaluates its expression at the () of the loop.
4. Common behavior can be defined in a()and inherited into ()using the()keyword.
5. The term API stands for().

SECTION C

[10 marks]

ANSWER ONE (1) QUESTION

[QD1]

Answer ALL questions.

1. Convert the following for loop into a do-while loop

```
int sum = 0;
for (int i = 0; i < 100; i++) {
    sum += i;
}
```

[QD2]

Write a **static method** that asks the user to enter **TWO (2)** integer numbers and display the **Maximum, Minimum** and **Average** of the two numbers.

SECTION D

[10 marks]

Identify errors and fix it.

```
Public Class Program    \ A problem program
(
    Public static voided main[Strings( ) args]
    {
        system.out.println('This program');           \* oh, my... *\
        system.out.println('has several syntax errors'); \* lots of errors *\
    }
)
```

ANSWER ONE(1) QUESTION**[QG1]**

Analyze the following source code.

```
public class Box
{
    double length;
    double width;
    double height;

    double volume( )
    {
        return length * width * height;
    }
}
```

Based on the above source code, answer questions a to c.

- a) Define a constructor, which has 3 parameters: (length, width and height).
- b) Write a statement to create an object named blueBox, with a length of 6, width of 4, and height of 2.
- c) Write a statement to display the volume of the blueBox.

[QG2]

Fill in the blanks with an appropriate answer.

import _____;

class EchoSquare

```
{
    _____void main (String[] args)
    {
        _____input = new Scanner (_____);
        int num, square; // declaration of two int variables
        System.out.println("Enter an integer:");
        num = input._____;
        square = num * num ; // compute the square
        System.out.println("The square of is " + square);
    }
}
```

- a) The source file that this program is saved in should be called _____ (Be sure you use correct upper and lower case characters.)
- b) To compile the program, enter this command into the Command Prompt window:
C:\SomeDir> _____
- c) The compiler will create a file containing _____. This file will be named as _____.
- d) To run the bytecodes, enter this command into the Command Prompt window:
C:\SomeDir> _____

SECTION F

[40 marks]

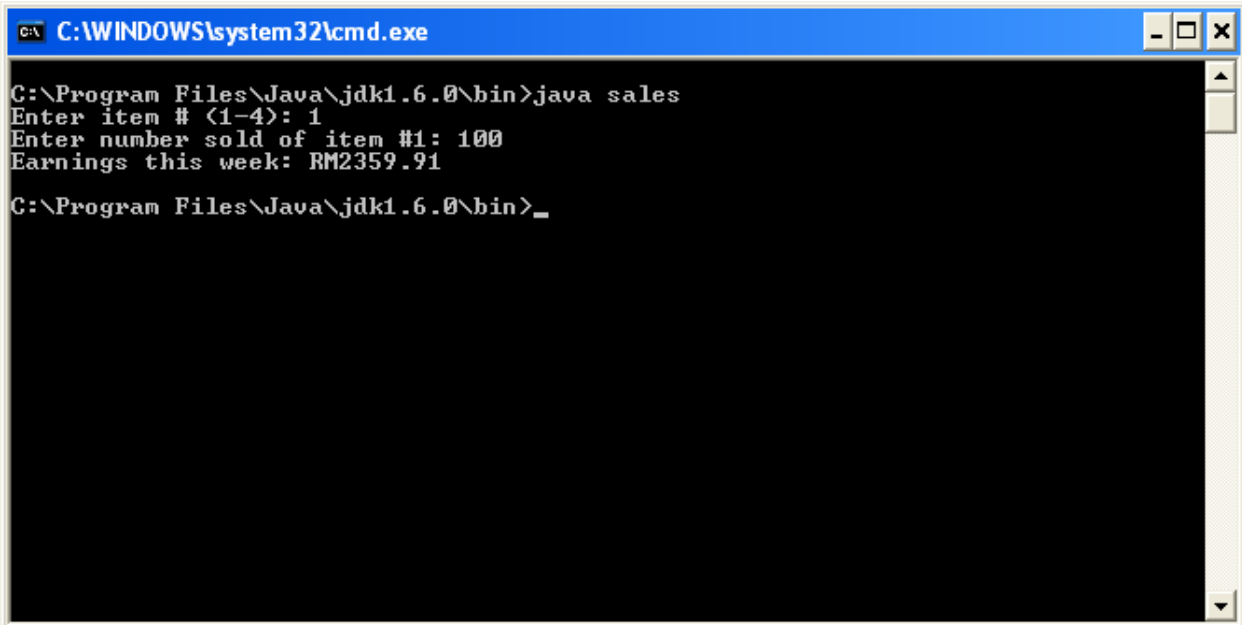
Choose any **TWO (2)** of the questions below and write a complete program for each of them. (Each question carries 20 marks)

Question 1

A large company pays its salespeople on a commission basis. The salespeople receive \$200 per week plus 9% of their gross sales for that week. For example, a salesperson who sells \$5000 worth of merchandise in a week receives \$200 plus 9% of \$5000, or a total of \$650. You have been supplied with a list of the items sold by each salesperson. The values of these items are as follows:

Item	Value
1	239.99
2	129.75
3	99.95
4	350.89

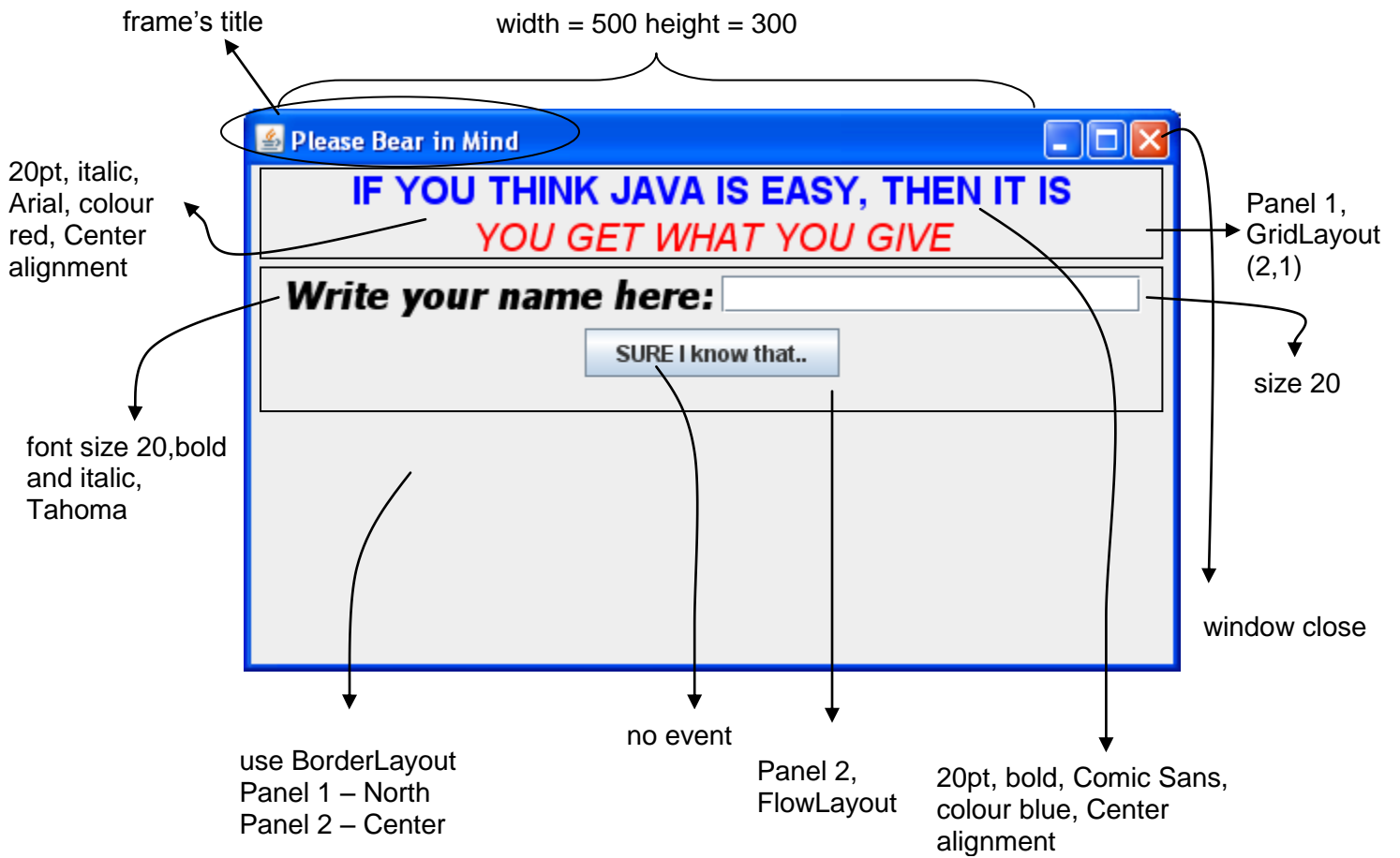
Develop a console application program that inputs salesperson's item number and number of the items sold for last week, calculates and displays that salesperson's earnings. There is no limit to the number of items that can be sold by a salesperson. Use instance methods to capture the structure and redundancy of the program. Your program should have at least two instance methods. (Hint: Sample output as given below).



```
C:\WINDOWS\system32\cmd.exe
C:\Program Files\Java\jdk1.6.0\bin>java sales
Enter item # (1-4): 1
Enter number sold of item #1: 100
Earnings this week: RM2359.91
C:\Program Files\Java\jdk1.6.0\bin>_
```

Question 2

Write a GUI application program based on the output attached below.



Question 3

Write a GUI application program that enables the user to enter the **annual interest rate**, the **number of years**, and the **loan amount**. When the user clicks the Compute Payment button, the program displays the **monthly payment** and the **total payment**. (Hint: Sample output as given below)

Formula:

```
/** Find monthly payment */
```

```
monthlyInterestRate = annualInterestRate / 1200;
```

```
MonthlyPayment = loanAmount * monthlyInterestRate / (1 - (Math.pow(1 / (1 + monthlyInterestRate), numberOfYears * 12)));
```

```
/** Find total payment */
```

```
TotalPayment = MonthlyPayment * numberOfYears * 12;
```

Enter interest rate, year and loan amount	
Annual Interest Rate	4.65
Number of Years	3
Loan Amount	20000
Monthly Payment	596.28
Total Payment	21466.09

Compute Payment