# INF 2105: Software Application Development Practical Session 4 Solutions

## 1. Employee Salary Increment

import java.util.Scanner;  
  
public class EmployeeSalary {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.in);  
 System.out.print("Enter performance level (0-100): ");  
 int performance = scanner.nextInt();  
 System.out.print("Enter base salary: ");  
 double salary = scanner.nextDouble();  
  
 if (performance >= 90) {  
 salary += salary \* 0.03;  
 }  
 System.out.println("Salary is " + salary);  
 }  
}

## 2. Check Integer in Range

import java.util.Scanner;  
  
public class CheckIntegerRange {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.in);  
 System.out.print("Enter an integer: ");  
 int number = scanner.nextInt();  
  
 if (number >= 1 && number <= 100) {  
 System.out.println("OK");  
 } else {  
 System.out.println("Out of range.");  
 }  
 }  
}

## 3. Largest of Three Numbers

import java.util.Scanner;  
  
public class LargestNumber {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.in);  
 System.out.print("Enter first number: ");  
 int num1 = scanner.nextInt();  
 System.out.print("Enter second number: ");  
 int num2 = scanner.nextInt();  
 System.out.print("Enter third number: ");  
 int num3 = scanner.nextInt();  
  
 int largest = Math.max(num1, Math.max(num2, num3));  
 System.out.println("The largest number is: " + largest);  
 }  
}

## 4. Check for Duplicates

import java.util.HashSet;  
import java.util.Scanner;  
  
public class CheckDuplicates {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.in);  
 HashSet<Integer> numbers = new HashSet<>();  
 boolean hasDuplicate = false;  
  
 System.out.println("Enter five numbers:");  
 for (int i = 0; i < 5; i++) {  
 int num = scanner.nextInt();  
 if (!numbers.add(num)) {  
 hasDuplicate = true;  
 }  
 }  
  
 if (hasDuplicate) {  
 System.out.println("DUPLICATES");  
 } else {  
 System.out.println("ALL UNIQUE");  
 }  
 }  
}

## 5. Student Grade

import java.util.Scanner;  
  
public class StudentGrade {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.in);  
 System.out.print("Quiz score: ");  
 int quiz = scanner.nextInt();  
 System.out.print("Mid-term score: ");  
 int midTerm = scanner.nextInt();  
 System.out.print("Final score: ");  
 int finalScore = scanner.nextInt();  
  
 double average = (quiz + midTerm + finalScore) / 3.0;  
 char grade;  
  
 if (average >= 90) {  
 grade = 'A';  
 } else if (average >= 70) {  
 grade = 'B';  
 } else if (average >= 50) {  
 grade = 'C';  
 } else {  
 grade = 'F';  
 }  
  
 System.out.println("Your grade is " + grade);  
 }  
}

## 6. College Classification

import java.util.Scanner;  
  
public class CollegeClassification {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.in);  
 System.out.print("Enter the number of credits earned: ");  
 int credits = scanner.nextInt();  
  
 if (credits < 7) {  
 System.out.println("Freshman");  
 } else if (credits < 16) {  
 System.out.println("Sophomore");  
 } else if (credits < 26) {  
 System.out.println("Junior");  
 } else {  
 System.out.println("Senior");  
 }  
 }  
}

## 7. Speeding Ticket Fine

import java.util.Scanner;  
  
public class SpeedingTicket {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.in);  
 System.out.print("Enter the speed limit: ");  
 int speedLimit = scanner.nextInt();  
 System.out.print("Enter the clocked speed: ");  
 int clockedSpeed = scanner.nextInt();  
  
 if (clockedSpeed <= speedLimit) {  
 System.out.println("The speed is legal.");  
 } else {  
 int fine = 50 + (clockedSpeed - speedLimit) \* 5;  
 if (clockedSpeed > 90) {  
 fine += 200;  
 }  
 System.out.println("The speed is illegal. The fine is $" + fine);  
 }  
 }  
}