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| Instructor | ***Katherine Papademas*** | Due Date | **9/23/16** |

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| Part | **1** | **2** | **3** | **4** | Total |
| *Maximum Points* | **25** points | **25** points | **25** points | **25** points | **100**G101010 pointsG |
| ***Your Score*** |  |  |  |  |  |

**Textbook Reading Assignment**

Thoroughly read Chapter(s) 7 in your **Java: An Introduction to Computing** textbook.

**Part 1 Glossary Terms**

Define, in detail, each of these glossary terms from the realm of computer programming logic and design and computer topics, in general. If applicable, use examples to support your definitions. Consult your notes or course textbook(s) as references or the Internet by visiting Web sites such as:

[**http://www.askjeeves.com**](http://www.askjeeves.com) or [**http://www.webopedia.com**](http://www.webopedia.com/)

**(a) case**

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| --- |
| One of multiple situations a program could undergo while running due to user’s inputs and desired actions. |

**(b) default**

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| --- |
| Situation a program undergoes if no case requirements were made. |

**(c) if Statement**

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| Java statement that does a certain action if a set requirement is not met. |

**(d) if . . . then . . . else Statement**

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| --- |
| Java statement that makes a program do one of two situations depending on the user’s input. If they do not put what is required to go through the if statement then the program will undergo the else statement. |

**(e) switch Statement**

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| --- |
| Statement here you can set multiple cases with different scenarios a program could run depending on the user’s input. |

**Part 2 Textbook Exercises - Java Language Basics**

For each of the following, circle (a) if the answer is True, otherwise circle (b) for False.

**(1)** Given the statement at right, if p is 6 , then q becomes 4 . if(p = = 6) q = 4;

(a) True

**(2)** Given the statement at right, if q is 6 , then p becomes 4 . if(p = = 4) q = 6;

(b) False

**(3)** Given the statement at right, if p is 6 , then q becomes 4 . if(p ! = 6) q = 4;

(b) False

**(4)** Given the statement at right, if q is 7 , then p becomes 4 . if(q ! = 6) p = 4;

(a) True

**(5)** Given the statement at right, if q is 4 , then q becomes 4 . if(q > = 6) q = 4;

(b) False

**Part 3 Programming Exercises - Java Language Basics**

**(1)**  ( **DeMorgan’s Principles** )

According to DeMorgan’s Logic Principles, if p and q are logic statements, then:

**(i)** ! ( p && q ) is equivalent to ! p || ! q

and

**(ii)** ! ( p || q ) is equivalent to ! p && ! q

Use DeMorgan’s Principles to rewrite each of the following:

**(a)** ! (! p || ! q) **(b)**  (! p || ! q) && ! q

p && q !p || q

**(2)** Write an if statement to determine if the Boolean variable named check1 is currently set to True. If it is, set the value of the Boolean variable check2 to False. Otherwise, set it to True.

**if(check1 == true){**

**check 2 == false;**

**else{**

**check 2 == true;**

**}**

**(3)** Write an if statement that determines whether the variable balance is greater than 400.00 . If it is, multiply the variable balance by 1.06 . Otherwise, multiply balance by 1.05 .

**if(balance > 400.00){**

**balance \* 1.06;**

**else{**

**balance \* 1.05;**

**}**

**(4)** Assuming that an employee’s years of service is stored in the Integer variable intYears , write an if statement that will set the value of the Boolean variable blnAward to True, if the employee’s years of service is greater than 25 and less

than 35 . Otherwise, set the value of the Boolean variable to False.

**if(intYears > 25 && intYears < 35){**

**blnAward == true;**

**else{**

**blnAward == false;**

**}**

**(5)** Write a switch case statement that tests the value of the integer intNumber . If the value of intNumber is 0 , set the character variable named chrResult to " F ". If the value of intNumber is 1 , inclusive, set the String variable named chrResult to " P ". Add a default case which will set the character variable named chrResult to " I ".

**if (intNumber == 0) chrResult = 1;**

**if(intNumber == 1) chrResult = 2;**

**switch(chrResult){**

**case 1: chrResult == “F”; break;**

**case 2: chrResult == “P”; break;**

**default: chrResult == “I”; break;**

**}**

**chrResult = 0;**

**Part 4 Programming Exercises ( Selection Control Structures )**

Write a complete program that prompts the user for a student’s status and grade point average ( GPA ) and then determines whether or not the student should be placed on the Dean’s list. Assume that a student is placed on the Dean’s list when he / she has full - time status and a GPA of at least 3.50 . Part - time students cannot be placed on the Dean’s list regardless of their GPA.

Attach your completed source code.

/\* Erick Cabrera

\* September 25, 2016

\*/

import java.util.Scanner;

public class DeansList {

public static void main(String args[]){

Scanner sc = new Scanner(System.in);

System.out.println("What is the student's current status? (Half or Full)");

String status = sc.nextLine();

System.out.println("What is the student's GPA?");

double gpa = sc.nextDouble();

if(gpa >= 3.50 && status.equalsIgnoreCase("Full")){

System.out.println("This student belongs on the Dean's List");

}else if ((gpa > 4 || gpa < 0) || (!status.equalsIgnoreCase("Full") ||

!status.equalsIgnoreCase("Half"))){

System.out.println("Invalid data entry. Please verify and try again.");

} else{

System.out.println("This student does not belong on the Dean's List.");

}

}

}