



# Object Oriented Programming

برمجة شيئية

Midterm





**Taif University**  
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## *Mid-Term Exam / Fall 1439/1440 H*

### *Object Oriented Programming (501323-3)*

Assessment of Course Learning Objectives covered in the examination		Question Mapping	Marks Obtained	Max Marks
<b>CLO 1</b>	Understand the features of object oriented programming paradigm	<b>Q1</b>		<b>5</b>
<b>CLO 2</b>	Be able to use the tools and techniques of an object oriented language			
<b>CLO 3</b>	Be able to design object oriented applications	<b>Q3</b>		<b>5</b>
<b>CLO 4</b>	Be able to implement object oriented applications			<b>10</b>

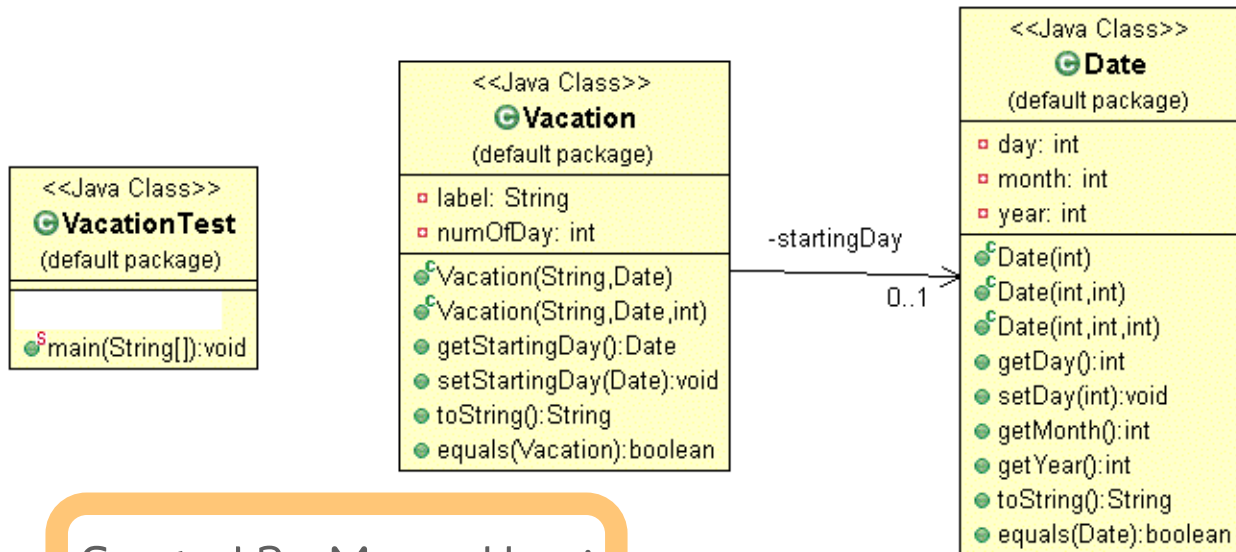
<b>Instructor: Dr. Walid MAHDI</b>	<b>Student Name:</b> .....	<div style="border: 2px solid orange; padding: 10px; display: inline-block;">           Created By Mazen Hrazi            Telegram @MazIn         </div>		
<b>Department of CS</b>	<b>Student ID:</b> .....			
<b>Course: OOP</b>	<b>Section:</b> .....			
<b>Course Code: 501323-3</b>	<b>Serial No.</b> .....			
<b>Campus: Boys</b>				
<b>Date: 23/10/2018</b>	<b>Question</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>
<b>Time: 09:00 am to 10h00 am</b>	<b>Student Mark</b>	.....	.....	.....
<b>Time Allowed: one Hour</b>	<b>Max. Mark</b>	<b>5</b>	<b>10</b>	<b>5</b>
<b>Total No. of Pages: 7</b>	<b>Total Marks</b>	...../20		
<b>Questions Pages: 2-7</b>	<b>Signature:</b>	.....		

### Instructions:

- Do not forget to write your name (in Arabic), your ID and serial number.
- The Exam consists of 3 Questions.
- Answer all questions.
- 

### Problem

We need to propose an appropriate Java implementation for the following **Uml Class Diagram**.



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**Question 1** Telegram @MazIn **CLO 3 [5 Marks]**

Identify the vocabulary word for each definition below

<b>Driven class or Main class or Principal class</b>	A class that contains a main method
<b>Constructor</b>	A special kind of method that has the same name of the class
<b>Class</b>	The outline of an object, including class variables, constructors and methods
<b>Comment</b>	Code that is preceded by //
<b>Encapsulation</b>	Wrapping attributes and methods into objects

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**Question 2** **CLO 3 [10 Marks]**

a. Write the class Date.java

```
public class Date {  
  
    private int day;  
    private int month;  
    private int year;  
  
    public Date(int day) {  
        this.day = day;  
    }  
  
    public Date(int d, int m) {  
        this(d); // calling the first constructor --> day=d;  
        month = m;  
    }  
  
    public Date(int d, int m, int y) {  
        this(d, m); // calling the second constructor --> day=d; month=m;  
        year = y;  
    }  
  
    public int getDay() {  
        return day;  
    }  
  
    public void setDay(int day) {  
        this.day = day;  
    }  
  
    public int getMonth() {  
        return month;  
    }  
  
    /*  
    * public void setMonth(int m) { month = m; }  
    */  
  
    public int getYear() {  
        return year;  
    }  
  
    public String toString() {  
        // return day+"/"+month+"/"+year;  
        return String.format("%d / %d /%d", day, month, year);  
    }  
}
```

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```
public boolean equals(Date d) {  
    return day == d.day && month == d.month && year == d.year;  
}  
}
```

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b. Write the class Vacation.java

```
public class Vacation {

    private String label;
    private Date startingDay;
    private int numOfDay;

    public Vacation(String name, Date s) {

        label = name;
        // startingDay = s; this is a correct statement but not professional
        startingDay=new Date(s.getDay(),s.getMonth(),s.getYear());

    }

    public Vacation(String name, Date s, int n) {

        label = name;
        startingDay = new Date(s.getDay(),s.getMonth(),s.getYear());
        numOfDay=n;

    }

    public Date getStartingDay() {
        return startingDay;
    }

    public void setStartingDay(Date s) {
        startingDay = new Date(s.getDay(),s.getMonth(),s.getYear());
    }

    public String toString(){
        return String.format("Vacation :%s, Staring Day= %s, Number of Day= %d",
label,startingDay,numOfDay);
    }

    public boolean equals(Vacation v){
        return label.equals(v.label) && startingDay.equals(v.startingDay) &&
numOfDay==v.numOfDay;
    }

}
```

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### Question 3

CLO 3 [5 Marks]

Write a class VacationTest.java to:

- Create a Vacation object “v” corresponding to the “Saudi National Day”;
- Display on the screen all information’s of object v.

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```
public class VacationTest {  
  
    public static void main(String[] args) {  
  
        Date d1 = new Date(23, 9, 2018);  
        Vacation v1 = new Vacation("Saudi Nationa Day", d1, 1);  
        System.out.println(v1);  
  
    }  
}
```

*End of Exam Questions*

*- Good Luck -*