Course Code	OCAJP8
Section	TOPIC_2
Student Name	Dominic Sekaole
Student Signature	
Date	14/01/2020

1. **Program Objective and Summary**

- Declare and initialize variables (including casting of primitive data types)
- Differentiate between object reference variables and primitive variables
- Know how to read or write to object fields
- Explain an Object's Lifecycle (creation, "dereference by reassignment" and garbage collection)
- Develop code that uses wrapper classes such as Boolean, Double, and Integer.

2. **Tools (Clearly state the IDE, Databases, languages used)**

    Intellij IDEA

3. **Code**

Course Code	OCAJP8
Section	TOPIC_2
Student Name	Dominic Sekaole
Student Signature	
Date	14/01/2020

```java
/*
    **** Topic 2: Java Basics ****
    * OBJECTIVES:
    * 1 Define the scope of variables
    * 2 Define the structure of a java class
    * 3 Create executable java applications with a main method; run a java program from the
    * command line; including console output
    * 4 Import other Java packages to make them accessible in your code
    * 5 Compare and contrast the features and components of Java such as:
    * platform independence, object orientation, encapsulation, etc.
    */

package com.company;

/**
 * @author dominic
 */

import java.text.DecimalFormat;
import java.util.Calendar;
import java.util.Scanner;

public class Main {

    public static void main(String[] args) {

        /*
```

Course Code	OCAJP8
Section	TOPIC_2
Student Name	Dominic Sekaole
Student Signature	
Date	14/01/2020

```java
public static void main(String[] args) {

    /*
        multiple variables of the same type declared on the same line below.
     */
    byte MONTHS_IN_YEAR = 12, PERCENTAGE = 100;
    String annualInterestRate = "6.50";


    /*
        line below makes a new object and stores the variable input.
     */
    Scanner scanner = new Scanner(System.in);


    System.out.println("Welcome this in a loan payment calculator\n");
    System.out.print("Please enter your name: ");
    String name = scanner.nextLine();


    System.out.print(name + " Please enter the loan amount you require: ");
    int loanAmount = scanner.nextInt();


    double monthlyInterest = Double.parseDouble(annualInterestRate) / PERCENTAGE / MONTHS_IN_YEAR;
    /*
        Above line and Double.parseDouble() is casting of variable methods.
     */


    System.out.print("Please enter period of years: ");
    byte years = scanner.nextByte();
    int numberOfPayments = years * MONTHS_IN_YEAR; //converting number of years into months.
```

Course Code	OCAJP8
Section	TOPIC_2
Student Name	Dominic Sekaole
Student Signature	
Date	14/01/2020

```java
47          Above line and Double.parseDouble() is casting of variable methods.
48     */
49
50     System.out.print("Please enter period of years: ");
51     byte years = scanner.nextByte();
52     int numberOfPayments = years * MONTHS_IN_YEAR; //converting number of years into months.
53     //convert numberOfPayments into wrapper objects
54     Integer paymentsObject = Integer.valueOf(numberOfPayments);
55
56     double loanToPay = loanAmount //this is the formula for loan repayment.
57             * (monthlyInterest * Math.pow(1 + monthlyInterest, paymentsObject))
58             / (Math.pow(1 + monthlyInterest, paymentsObject) - 1);
59
60     DecimalFormat df = new DecimalFormat( pattern: "#.##"); //This line is for converting numbers into two decimal places
61     System.out.println(name + "\nYou are required to pay: " + "R" +df.format(loanToPay) +
62             " per month\nfor: " + paymentsObject + " Months\nat "
63             + annualInterestRate + "% Annual interest rate."); //Printing Concatenated Strings
64
65     Calendar futureDate = Calendar.getInstance();
66     futureDate.add(Calendar.MONTH, numberOfPayments);
67     System.out.println("Your loan will be fully paid by: " + futureDate.getTime());
68     }//End of code block of the main function
69 }// End of code block of the class
70
```

4. **Output (Please attach screen output as evidence)**

Course Code	OCAJP8
Section	TOPIC_2
Student Name	Dominic Sekaole
Student Signature	
Date	14/01/2020


```
Run:    Main
        "C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2019.3.1
        Welcome this in a loan payment calculator

        Please enter your name: Dominic
        Dominic Please enter the loan amount you require: 50000
        Please enter period of years: 5
        Dominic
        You are required to pay: R978,31 per month
        for: 60 Months
        at 6.50% Annual interest rate.
        Your loan will be fully paid by: Tue Jan 14 11:15:44 CAT 2025

        Process finished with exit code 0
```



```
Run:    Main
        "C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2019.3.1\jbr\
        Welcome this in a loan payment calculator

        Please enter your name: Jacob
        Jacob Please enter the loan amount you require: 100000
        Please enter period of years: 7
        Jacob
        You are required to pay: R1484,94 per month
        for: 84 Months
        at 6.50% Annual interest rate.
        Your loan will be fully paid by: Thu Jan 14 11:17:35 CAT 2027

        Process finished with exit code 0
```

Course Code	OCAJP8
Section	TOPIC_2
Student Name	Dominic Sekaole
Student Signature	
Date	14/01/2020

5. **Completed Practical Assignment Template**
   Completed Practical Assignment Template and attach it on LMS as a pdf file