Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
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Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problemsolving skills through emerging technologies.

Session 2025-2026

Vision: *To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration*	**Mission:** *To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.*

Program Educational Objectives of the program (PEO): (broad statements that describe the professional and career accomplishments)

knowledge, Problem analysis, Design/development of solutions, Conduct Investigations

PEO1	**Preparation**	**P: Preparation**	**Pep-CL abbreviation pronounce as Pep-si-lL easy to recall**
PEO2	**Core Competence**	**E: Environment (Learning Environment)**	
PEO3	**Breadth**	**P: Professionalism**	
PEO4	**Professionalism**	**C: Core Competence**	
PEO5	**Learning Environment**	**L: Breadth (Learning in diverse areas)**	

Program Outcomes (PO): (statements that describe what a student should be able to do and know by the end of a program)

Keywords of POs: Engineering of Complex Problems, Engineering Tool Usage, The Engineer and The World, Ethics, Individual and Collaborative Team work, Communication, Project Management and Finance, Life-Long Learning

PSO Keywords: Cutting edge technologies, Research

"I am an engineer, and I know how to apply engineering knowledge to investigate, analyse and design solutions to complex problems using tools for entire world following all ethics in a collaborative way with proper management skills throughout my life." *to contribute to the development of cutting-edge technologies and Research*.

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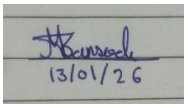
Integrity: I will adhere to the Laboratory Code of Conduct and ethics in its entirety.

Name and Signature of Student and Date
(Signature and Date in Handwritten)
Madhuri Bansode
13/01/2026



Session	2025-26 (EVEN)	Course Name	JAVA FSD Lab
Semester	4	Course Code	23ADS1407
Roll No	08	Name of Student	Madhuri Suresh Bansode

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Practical Number	02
Course Outcome	Understand and implement basic Java programs using primitive and non-primitive data types and execute them using JDK in IntelliJ IDEA. To explore the Java Development Kit (JDK) using IntelliJ IDEA and execute a simple Java program demonstrating various primitive and non-primitive data types.
AIM	Write a program to demonstrate concept of class, object and methods in Java.
Problem Definition	1. Write a Java program to demonstrate **class, object, and method** by performing addition using multiple objects. 2. Write a Java program to demonstrate **class, object, and methods** by displaying batch and practical details using objects. 3. Write a Java program to demonstrate **class, object, and methods** by displaying college and department information.

Theory	Java is an **object-oriented programming (OOP) language**.
	The main concepts of OOP used in Java are **Class, Object and Methods**.
	These concepts help in organizing the program, improving code reusability, and making the program easy to understand and maintain.
	
	1. Class
	A **class** is a **blueprint or template** used to create objects.
	It defines the **data members (variables)** and **member functions (methods)** that an object will have.
	Key Points:
	• Class does not occupy memory until an object is created.
	• It contains variables and methods.
	• It represents a logical entity.
	Syntax:
	class ClassName {
	// data members
	// methods

```
}
```

2. Object

An **object** is a **real-world entity** and an **instance of a class**.

When an object is created, memory is allocated for it.

Key Points:

- Object represents a real entity.
- It accesses class variables and methods.
- Multiple objects can be created from a single class.

Syntax:

```
ClassName objectName = new ClassName();
```

3. Methods

A **method** is a **block of code** that performs a specific task.

Methods are used to define the behavior of an object.

Key Points:

- Improves code reusability.
- Reduces code repetition.
- Makes program modular and readable.

Syntax:

```
returnType methodName() {
   // method body
}
```

Working of Class, Object and Methods

- First, a **class** is defined which contains variables and methods.
- Then, an **object** of the class is created using the new keyword.
- Using the object, **methods** of the class are called to perform operations.

Advantages of Using Class and Object

- Provides **data security**
- Improves **code reusability**
- Makes program **easy to maintain**
- Supports **real-world modeling**

(100 words)	
Procedure and Execution	**Program 1 (Add Class)** 1. Start the program. 2. Create a class named Add. 3. Define a method addNum() to add two integers. 4. Create three objects of the class in main() method. 5. Call the addNum() method using each object with different values. 6. Display the result for each object. 7. End the program.
	Program 2 (A1Batch Class) 1. Start the program. 2. Create a class named A1Batch. 3. Define methods display() and prDetails(). 4. Create three objects of the class in main() method. 5. Call both methods using each object. 6. Display batch and practical details. 7. End the program.
	Program 3 (YCCE Class) 1. Start the program. 2. Create a class named YCCE. 3. Define methods collegeInfo(), departmentInfo(), and practicalBatchInfo(). 4. Create three objects of the class in main() method. 5. Call all methods using each object. 6. Display college, department, and practical batch information. 7. End the program.

Code:

1.

```
class Add {
int addNum(int a, int b) {
return a + b;
}
public static void main(String[] args) {
Add obj1 = new Add();
Add obj2 = new Add();
Add obj3 = new Add();
int res1 = obj1.addNum(10, 20);
int res2 = obj2.addNum(30, 40);
int res3 = obj3.addNum(50, 60);
System.out.println("Result of object 1: " + res1);
System.out.println("Result of object 2: " + res2);
System.out.println("Result of object 3: " + res3);
}
}
```

2.

```
class A1Batch {
void display() {
System.out.println("Batch Name: A1");
System.out.println("Subject: Java Programming");
System.out.println("Type: Practical Batch");
}
void prDetails() {
System.out.println("Practical: Basic Java Concepts");
System.out.println("Topics: Class, Object, Method");
}
public static void main(String[] args) {
A1Batch batch1 = new A1Batch();
A1Batch batch2 = new A1Batch();
A1Batch batch3 = new A1Batch();
batch1.display();
batch1.prDetails();
```

```
batch2.display();
batch2.prDetails();
batch3.display();
batch3.prDetails();
}
}
```

3.

```
class YCCE {
void collegeInfo() {
System.out.println("College Name: Yeshwantrao Chavan College of
Engineering");
System.out.println("Location: Nagpur");
System.out.println("Established: 1984");
}
void departmentInfo() {
System.out.println("Department: Computer Science & Engineering");
System.out.println("Course: B.E / B.Tech");
}
void practicalBatchInfo() {
System.out.println("Batch: A1");
System.out.println("Subject: Java Programming");
System.out.println("Type: Practical Batch");
}
public static void main(String[] args) {
YCCE college1 = new YCCE();
YCCE college2 = new YCCE();
YCCE college3 = new YCCE();
college1.collegeInfo();
college1.departmentInfo();
college1.practicalBatchInfo();
college2.collegeInfo();
college2.departmentInfo();
college2.practicalBatchInfo();
college3.collegeInfo();
college3.departmentInfo();
```

```
college3.practicalBatchInfo();
}
}
```

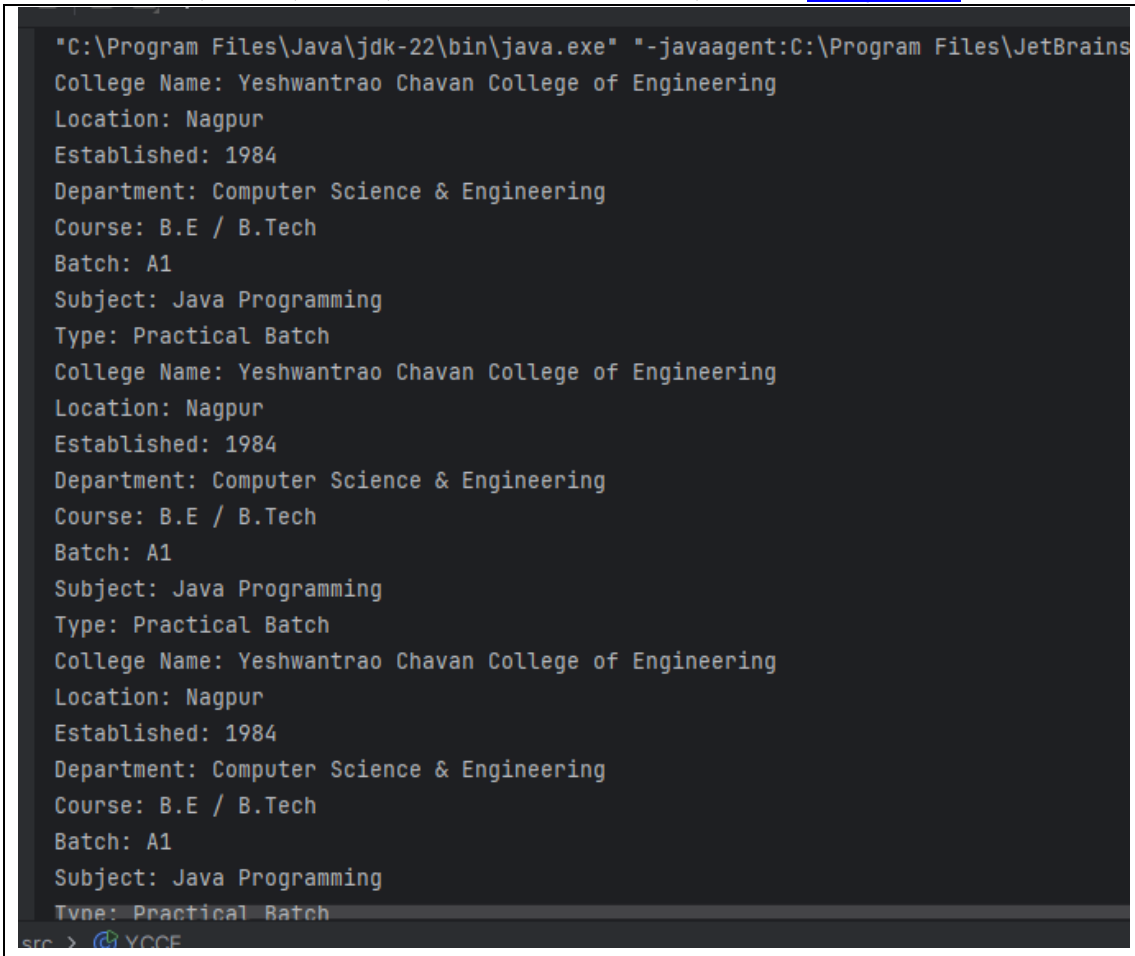
Output:

```
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 20
Result of object 1: 30
Result of object 2: 70
Result of object 3: 110

Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\Intel
Batch Name: A1
Subject: Java Programming
Type: Practical Batch
Practical: Basic Java Concepts
Topics: Class, Object, Method
Batch Name: A1
Subject: Java Programming
Type: Practical Batch
Practical: Basic Java Concepts
Topics: Class, Object, Method
Batch Name: A1
Subject: Java Programming
Type: Practical Batch
Practical: Basic Java Concepts
Topics: Class, Object, Method

Process finished with exit code 0
```



Output Analysis	**Program 1** In this program, three objects of the Add class are created. The addNum() method is called using each object with different values. The program displays different addition results, showing that the same method can be used by multiple objects. **Program 2** In this program, three objects of the A1Batch class are created. The methods display() and prDetails() are called using each object. The program displays batch and practical information, demonstrating object creation and method reuse.

	Program 3 In this program, three objects of the YCCE class are created. The methods collegeInfo(), departmentInfo(), and practicalBatchInfo() are called using each object. The program displays college, department, and batch details, showing the use of class, object, and methods.

Github profile where lab assignment has been uploaded	
Conclusion	Thus, the given programs successfully demonstrate the concepts of **class, object, and methods** in Java. Multiple objects are created from the same class and the same methods are accessed using different objects. This shows **code reusability**, **modularity**, and the **object-oriented nature** of Java programming.

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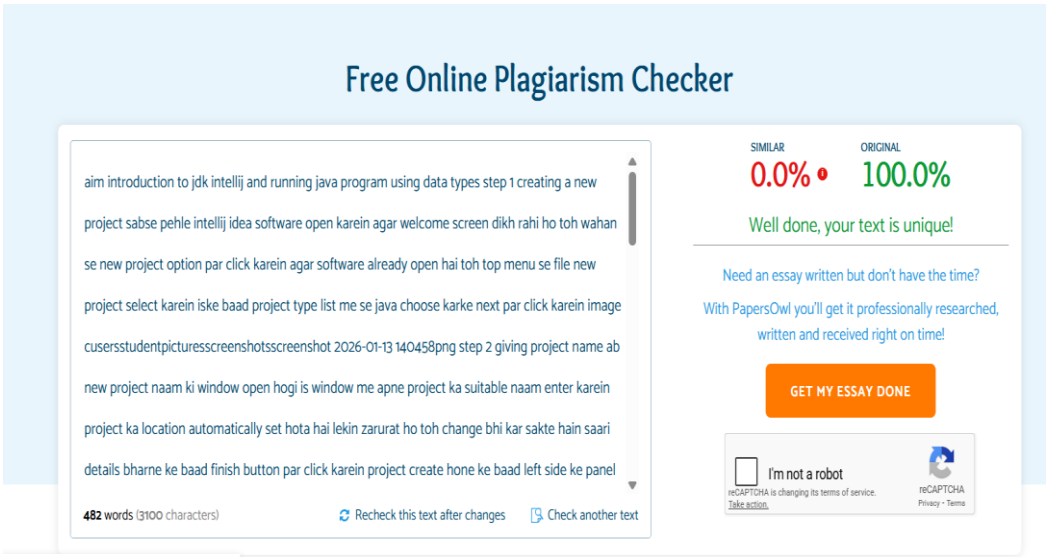
Plag Report (Similarity index < 12%)	
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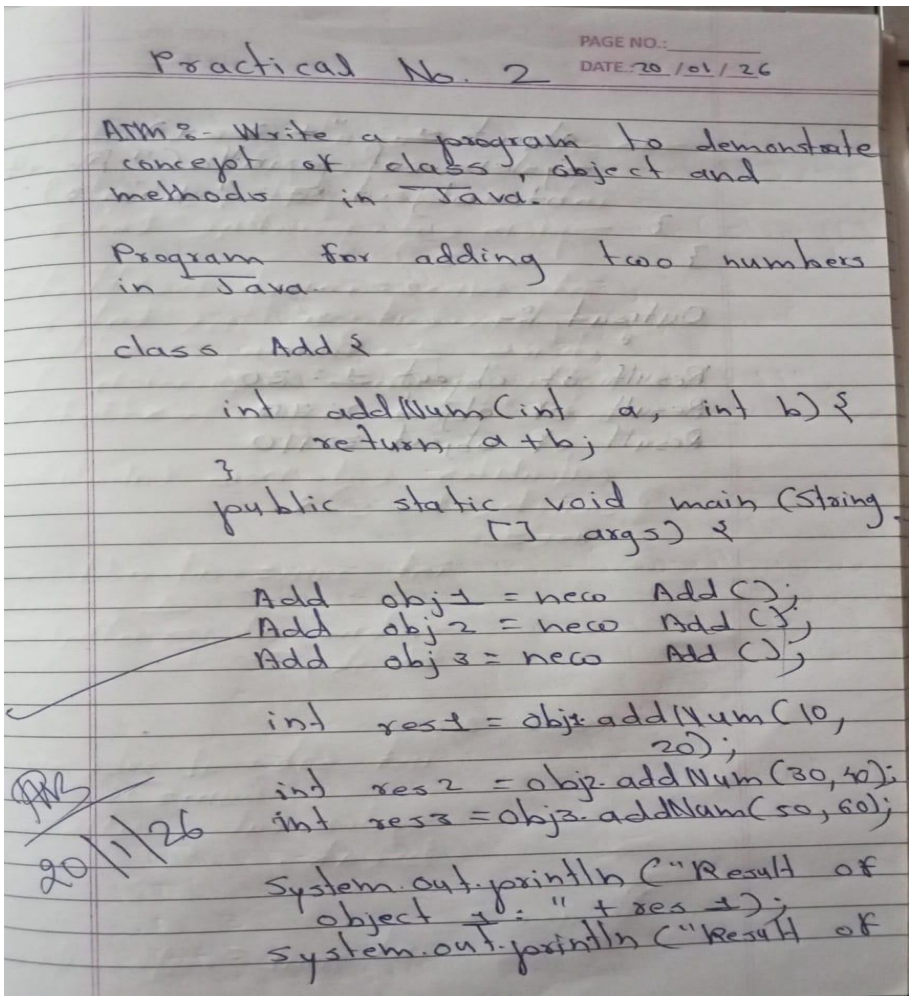

Practical No. 2

PAGE NO.:
DATE: 20/01/26

AIM :- Write a program to demonstrate concept of class, object and methods in Java.

Program for adding two numbers in Java.

```
class Add {
    int addNum(int a, int b) {
        return a+b;
    }
    public static void main(String[] args) {
        Add obj1 = new Add();
        Add obj2 = new Add();
        Add obj3 = new Add();
        int res1 = obj1.addNum(10, 20);
        int res2 = obj2.addNum(30, 40);
        int res3 = obj3.addNum(50, 60);
        System.out.println("Result of object 1: " + res1);
        System.out.println("Result of
```

20/1/26

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