

Java

Assignment 3.2



Prepared by:

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Roll No: 19

Batch: 2023-27

Dept. of CSE

Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 1

Title: WAP to demonstrate the constructors and methods of File class. • ArrayList(),

- ArrayList(Collection c),
- ArrayList(int capacity))

• **Code:**

```
import java.io.*;

public class FileMain {
    public static void main(String[] args) {
        File file = new File("assignment3.2/FileMain.java");
        System.out.println("File Name: " + file.getName());
        System.out.println("File Path: " + file.getPath());
        System.out.println("File Absolute Path: " +
file.getAbsolutePath());
        System.out.println("File Parent: " + file.getParent());
        System.out.println("File Exists: " + file.exists());
        System.out.println("File is Directory: " +
file.isDirectory());
        System.out.println("File is File: " + file.isFile());
        System.out.println("File is Hidden: " + file.isHidden());
        System.out.println("File Last Modified: " +
file.lastModified());
        System.out.println("File Length: " + file.length());
    }
}
```

Output: (screenshot)



```
14-arm64 not found
chaitanyadalvi@Mac assignment3.2 % cd "/Users/chai
tanyadalvi/Desktop/Dir1/a
ssignment3.2/" && javac F
ileMain.java && java File
Main
File Name: FileMain.java
File Path: assignment3.2/FileMain.java
File Absolute Path: /Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/assignment3.2/FileMain.java
File Parent: assignment3.2
File Exists: false
File is Directory: false
File is File: false
File is Hidden: false
File Last Modified: 0
File Length: 0
chaitanyadalvi@Mac assignment3.2 %
```

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Experiment No: 2

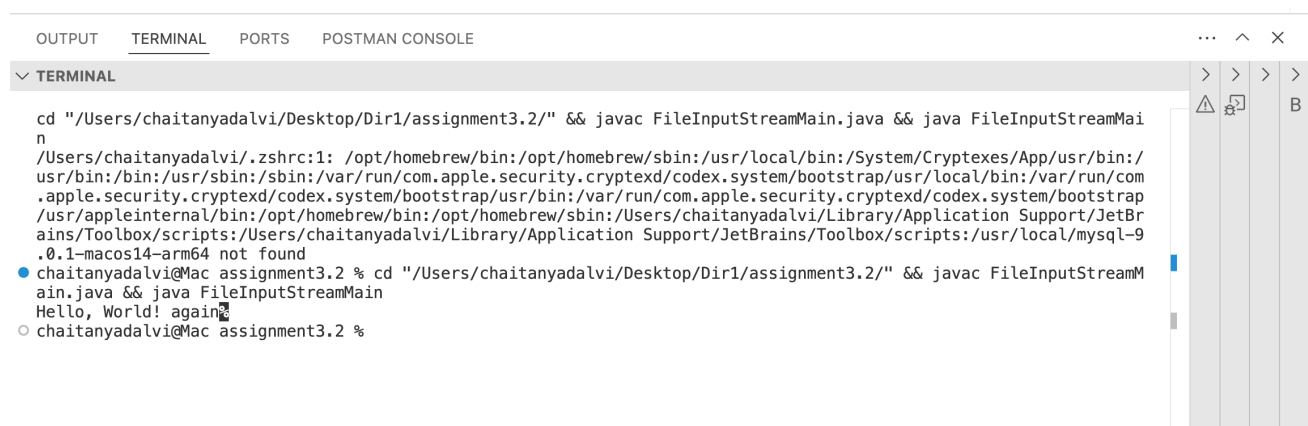
Title: WAP to demonstrate how to read a file using FileInputStream using different

read methods (read(), read(byte b[], read(byte b[], int off, int len). Use try, catch finally to handle exceptions and close the resources.

```
import java.io.*;

public class FileInputStreamMain {
    public static void main(String[] args) {
        try (FileInputStream fis = new
FileInputStream("hello.txt")) {
            int content;
            while ((content = fis.read()) != -1) {
                System.out.print((char) content);
            }
        } catch (FileNotFoundException e) {
            System.out.println("File not found: " +
e.getMessage());
        } catch (IOException e) {
            System.out.println("I/O error: " + e.getMessage());
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileInputStreamMain.java && java FileInputStreamMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9.0.1-macos14-arm64 not found
chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileInputStreamMain.java && java FileInputStreamMain
Hello, World! again
chaitanyadalvi@Mac assignment3.2 %
```

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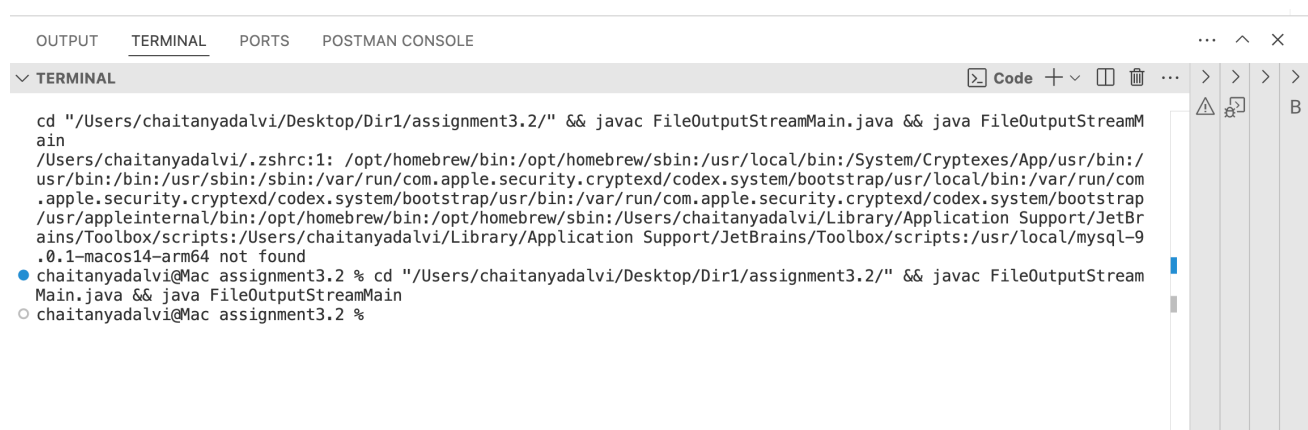
Experiment No: 3

Title:WAP to demonstrate how to write a file using FileOutputStream using different

write methods.

```
import java.io.*;
public class FileOutputStreamMain {
    public static void main(String[] args) {
        try (FileOutputStream fos = new
FileOutputStream("hello.txt");) {
            String content = "Hello, World!";
            fos.write(content.getBytes());
        } catch (FileNotFoundException e) {
            System.out.println("File not found: " +
e.getMessage());
        } catch (IOException e) {
            System.out.println("I/O error: " + e.getMessage());
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileOutputStreamMain.java && java FileOutputStreamMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileOutputStreamMain.java && java FileOutputStreamMain
○ chaitanyadalvi@Mac assignment3.2 %
```

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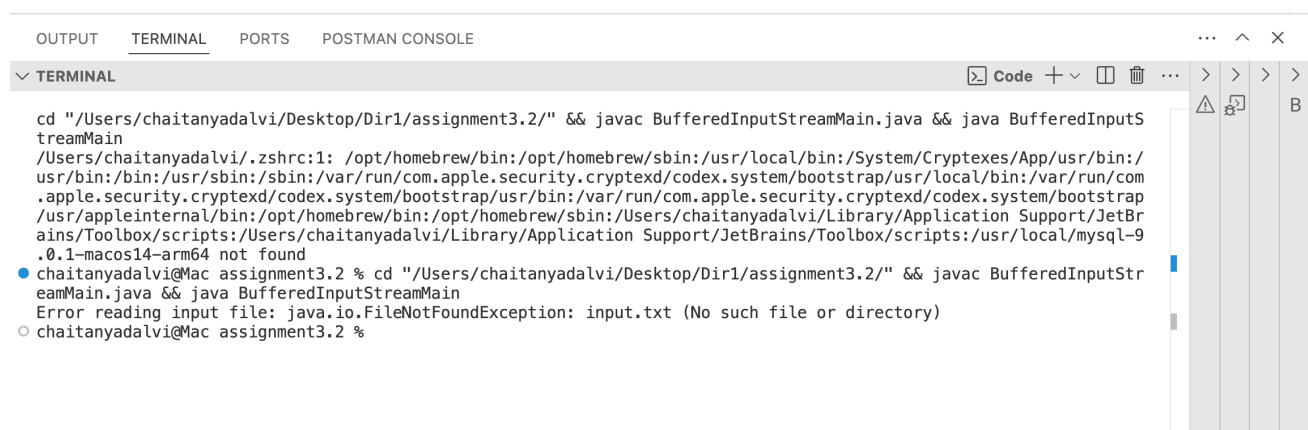
Roll Number: 19

Experiment No: 4

Title: WAP to demonstrate how to read a file using BufferedInputStream. Code:

```
import java.io.*;
public class BufferedInputStreamMain {
    public static void main(String[] args) {
        try (FileInputStream fis = new
FileInputStream("input.txt");
            BufferedInputStream bis = new BufferedInputStream(fis))
        {
            int content;
            while ((content = bis.read()) != -1) {
                System.out.print((char) content);
            }
        } catch (IOException e) {
            System.out.println("Error reading input file: " + e);
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac BufferedInputStreamMain.java && java BufferedInputS
treamMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/
usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com
.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap
/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBr
ains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9
.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac BufferedInputStr
eamMain.java && java BufferedInputStreamMain
Error reading input file: java.io.FileNotFoundException: input.txt (No such file or directory)
○ chaitanyadalvi@Mac assignment3.2 %
```

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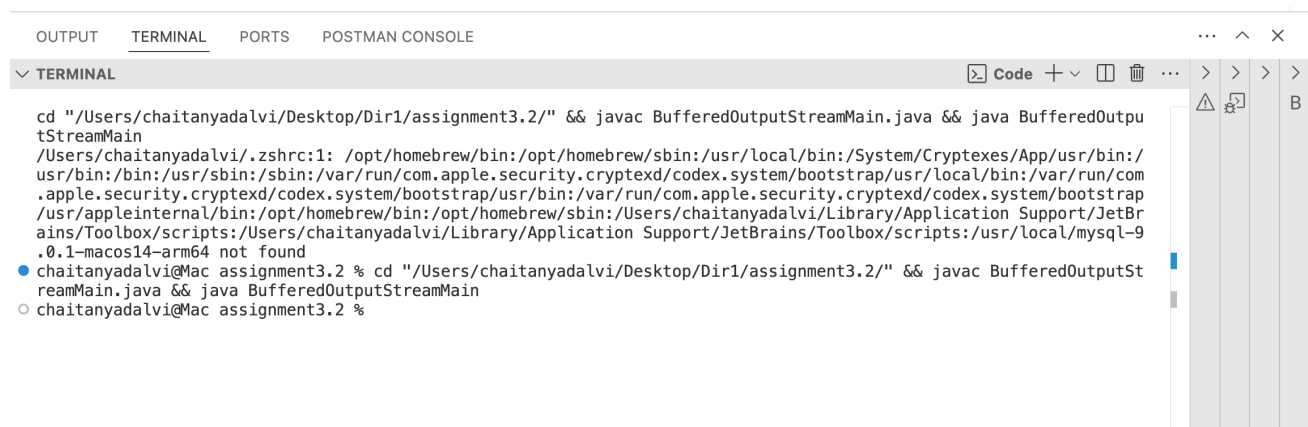
Roll Number: 19

Experiment No: 5

Title:WAP to demonstrate how to write a file using BufferedOutputStream.

```
import java.io.*;
public class BufferedOutputStreamMain {
    public static void main(String[] args) {
        try (FileOutputStream fos = new
FileOutputStream("hello.txt");
            BufferedOutputStream bos = new
BufferedOutputStream(fos)) {
            String content = "Hello, World again";
            bos.write(content.getBytes());
        } catch (FileNotFoundException e) {
            System.out.println("File not found: " +
e.getMessage());
        } catch (IOException e) {
            System.out.println("I/O error: " + e.getMessage());
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac BufferedOutputStreamMain.java && java BufferedOutpu
tStreamMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/
usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com
.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap
/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBr
ains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9
.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac BufferedOutputSt
reamMain.java && java BufferedOutputStreamMain
○ chaitanyadalvi@Mac assignment3.2 %
```

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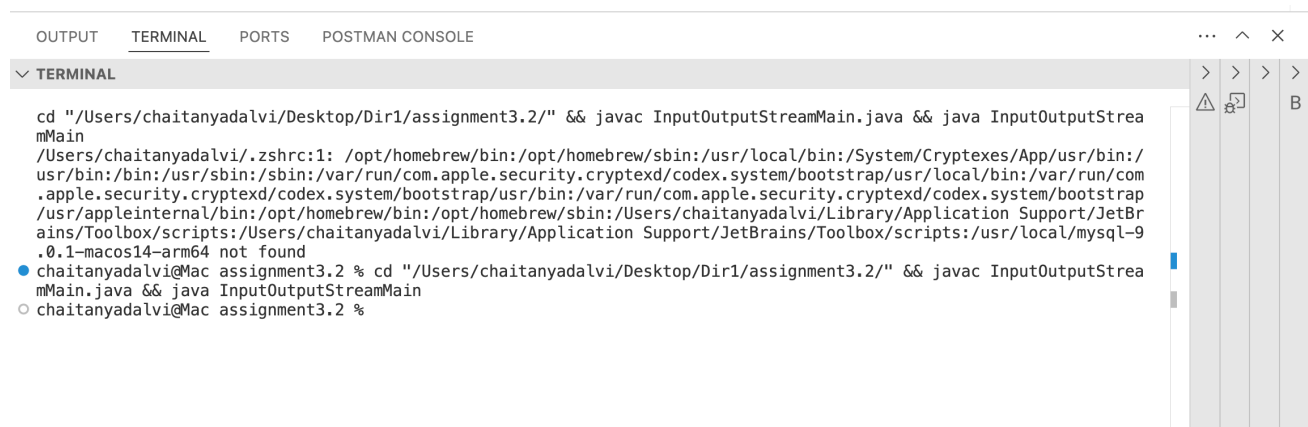
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Experiment No: 6

Title: WAP to copy an image file using the concept of InputStream and OutputStream.

```
import java.io.*;
public class InputOutputStreamMain {
    public static void main(String[] args) {
        try (FileInputStream fis = new
FileInputStream("input.png");
FileOutputStream fos = new
FileOutputStream("output.png")) {
            int content;
            while ((content = fis.read()) != -1) {
                fos.write(content);
            }
        } catch (IOException e) {
            System.out.println("Error reading input file: " + e);
        }
    }
}
```

Output: (screenshot)



The screenshot shows a terminal window with the following content:

```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac InputOutputStreamMain.java && java InputOutputStrea
mMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/
usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com
.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap
/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBr
ains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9
.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac InputOutputStrea
mMain.java && java InputOutputStreamMain
○ chaitanyadalvi@Mac assignment3.2 %
```

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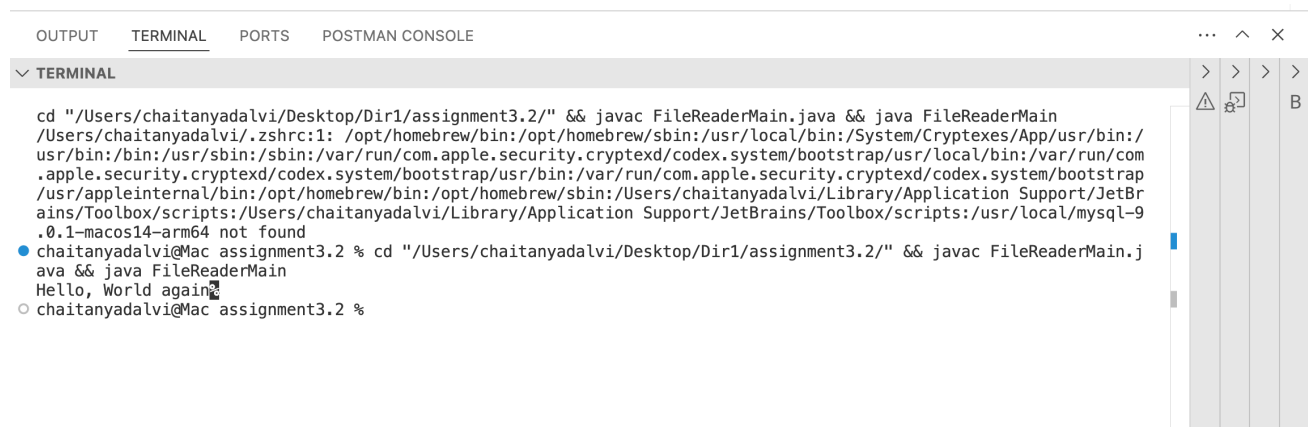
Roll Number: 19

Experiment No: 7

Title: WAP to demonstrate how to read a text file using FileReader.

```
import java.io.*;
public class FileReaderMain {
    public static void main(String[] args) {
        try (FileReader fr = new FileReader("hello.txt")) {
            int content;
            while ((content = fr.read()) != -1) {
                System.out.print((char) content);
            }
        } catch (IOException e) {
            System.out.println("Error reading file: " + e);
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileReaderMain.java && java FileReaderMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileReaderMain.j
ava && java FileReaderMain
Hello, World again!
○ chaitanyadalvi@Mac assignment3.2 %
```


Name of Student: Chaitanya Dalvi

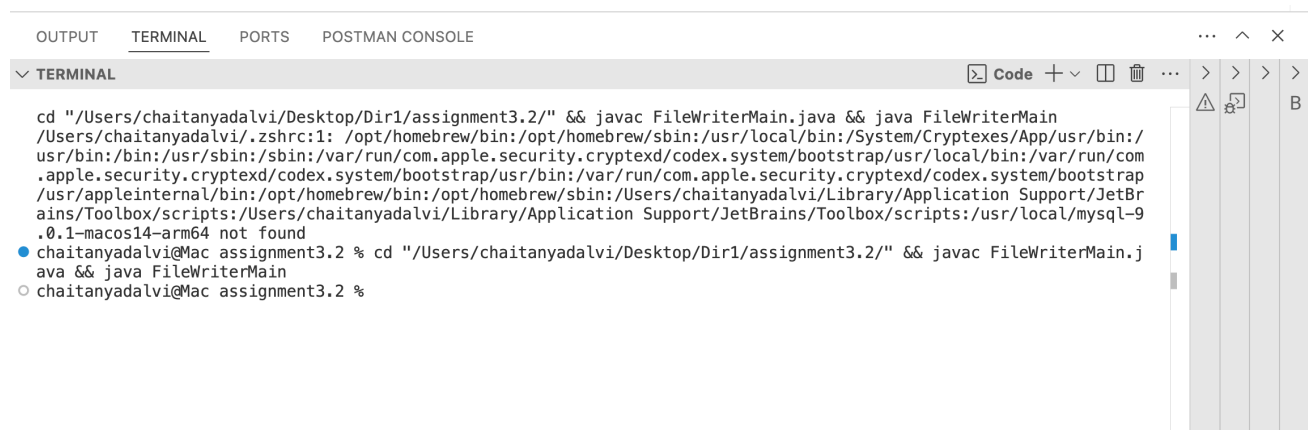
Roll Number: 19

Experiment No: 8

Title: WAP to demonstrate how to write a text file using FileWriter. Use all the write methods and append methods present in the PPT.

```
import java.io.*;
public class FileWriterMain {
    public static void main(String[] args) {
        try (FileWriter fw = new FileWriter("hello.txt")) {
            String content = "Hello, World!";
            fw.write(content);
            fw.append(" again");
        } catch (IOException e) {
            System.out.println("Error writing file: " + e);
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileWriterMain.java && java FileWriterMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileWriterMain.j
ava && java FileWriterMain
○ chaitanyadalvi@Mac assignment3.2 %
```

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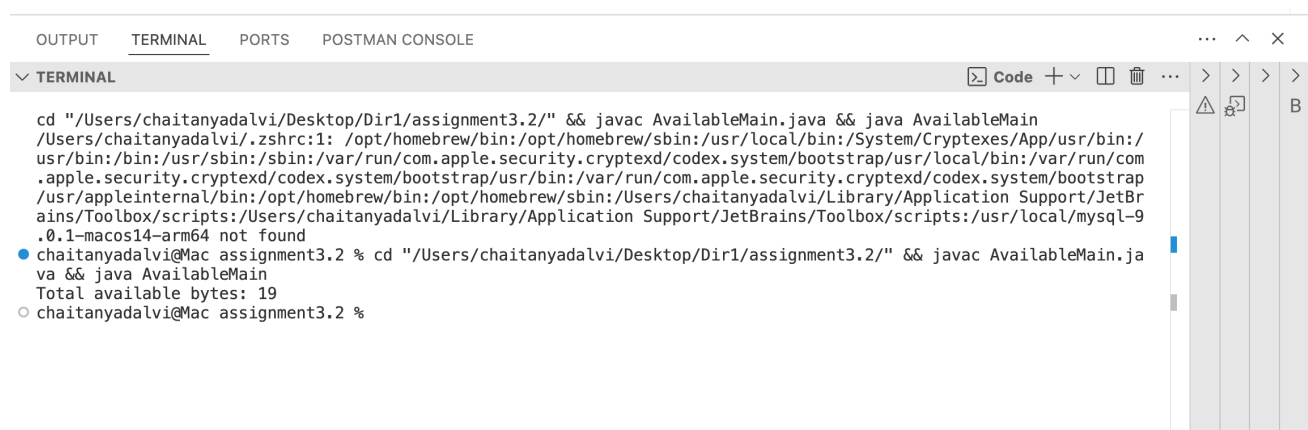
Roll Number: 19

Experiment No: 9

Title:WAP to demonstrate the use of available() method.

```
import java.io.*;
public class AvailableMain {
    public static void main(String[] args) {
        try (FileInputStream fis = new
FileInputStream("hello.txt")) {
            System.out.println("Total available bytes: " +
fis.available());
        } catch (IOException e) {
            System.out.println("Error reading file: " + e);
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac AvailableMain.java && java AvailableMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/
usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com
.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap
/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBr
ains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9
.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac AvailableMain.ja
va && java AvailableMain
Total available bytes: 19
○ chaitanyadalvi@Mac assignment3.2 %
```

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Experiment No: 10

Title: WAP to demonstrate the use of the following methods:

markSupported()

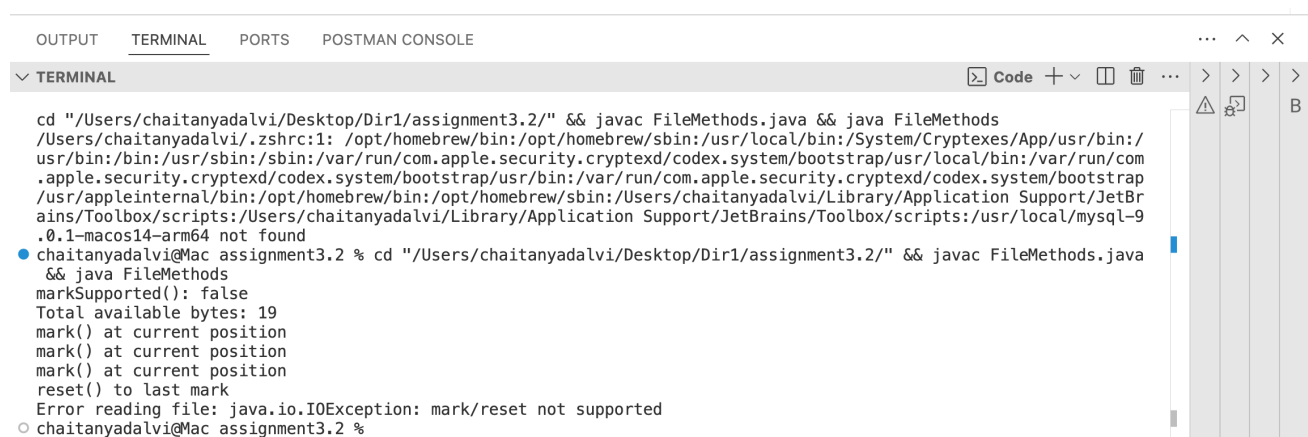
mark()

reset()

skip()

```
import java.io.*;
public class FileMethods {
    public static void main(String[] args) {
        try (FileInputStream fis = new
FileInputStream("hello.txt")) {
            System.out.println("markSupported(): " +
fis.markSupported());
            System.out.println("Total available bytes: " +
fis.available());
            System.out.println("mark() at current position");
            fis.mark(0);
            System.out.println("mark() at current position");
            fis.mark(0);
            System.out.println("mark() at current position");
            fis.mark(0);
            System.out.println("reset() to last mark");
            fis.reset();
            System.out.println("skip(5) bytes");
            fis.skip(5);
        } catch (IOException e) {
            System.out.println("Error reading file: " + e);
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileMethods.java && java FileMethods
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac FileMethods.java && java FileMethods
markSupported(): false
Total available bytes: 19
mark() at current position
mark() at current position
mark() at current position
reset() to last mark
Error reading file: java.io.IOException: mark/reset not supported
○ chaitanyadalvi@Mac assignment3.2 %
```

Name of Student: Chaitanya Dalvi

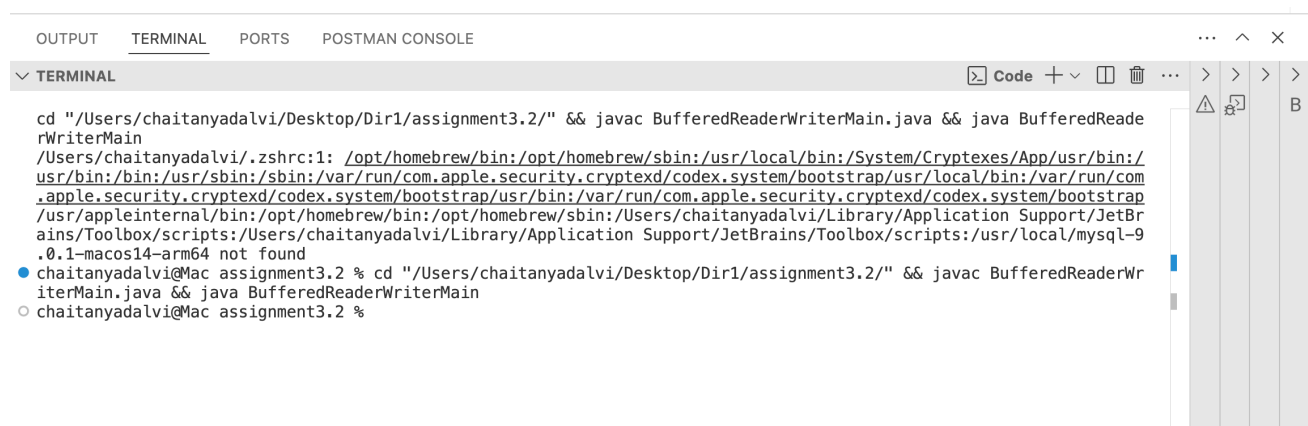
Roll Number: 19

Experiment No: 11

Title:WAP to demonstrate the use of **BufferedReader** and **BufferedWriter**. Use **readLine()**, **new Line()**, **read(String)** methods

```
import java.io.*;
public class BufferedReaderWriterMain {
    public static void main(String[] args) {
        try (BufferedReader br = new BufferedReader(new
FileReader("hello.txt"));
            BufferedWriter bw = new BufferedWriter(new
FileWriter("hello_copy.txt"))) {
            String line;
            while ((line = br.readLine()) != null) {
                bw.write(line);
                bw.newLine();
            }
        } catch (IOException e) {
            System.out.println("Error reading file: " + e);
        }
    }
}
```

Output: (screenshot)



```
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac BufferedReaderWriterMain.java && java BufferedReade
rWriterMain
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/
usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com
.apple.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap
/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBr
ains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9
.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac BufferedReaderWr
iterMain.java && java BufferedReaderWriterMain
○ chaitanyadalvi@Mac assignment3.2 %
```

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Roll Number: 19

Experiment No: 12

Title: WAP to demonstrate the serialization and deserialization of objects. Also demonstrate transient, static data member for Cat class. Cat class has instance variable: String color, String breed, int age, String country.

```
import java.io.*;
class Cat implements Serializable {
    String color;
    String breed;
    int age;
    String country;
    static String owner;
    transient String address;
    Cat() {
        color = "Black";
        breed = "Persian";
        age = 2;
        country = "India";
        owner = "ABC";
        address = "Mumbai";
    }
}

public class CatSerialize {
    public static void main(String[] args) {
        Cat cat = new Cat();
        try (FileOutputStream fos = new
FileOutputStream("cat.ser");
            ObjectOutputStream oos = new ObjectOutputStream(fos)) {
            oos.writeObject(cat);
        } catch (IOException e) {
            System.out.println("Error serializing cat: " + e);
        }
        try (FileInputStream fis = new FileInputStream("cat.ser");
            ObjectInputStream ois = new ObjectInputStream(fis)) {
            Cat deserializedCat = (Cat) ois.readObject();
            System.out.println("Deserialized Cat:");
            System.out.println("Color: " + deserializedCat.color);
            System.out.println("Breed: " + deserializedCat.breed);
            System.out.println("Age: " + deserializedCat.age);
        }
    }
}
```

```

        System.out.println("Country: " +
deserializedCat.country);
        System.out.println("Owner: " + Cat.owner);
        System.out.println("Address: " +
deserializedCat.address);
    } catch (IOException | ClassNotFoundException e) {
        System.out.println("Error deserializing cat: " + e);
    }
}
}
}

```

Output: (screenshot)

The screenshot shows a terminal window with the following content:

```

cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac CatSerialize.java && java CatSerialize
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/usr/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/appleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9.0.1-macos14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac CatSerialize.java && java CatSerialize
Deserialized Cat:
Color: Black
Breed: Persian
Age: 2
Country: India
Owner: ABC
Address: null
○ chaitanyadalvi@Mac assignment3.2 %

```

Name of Student: Chaitanya Dalvi

Roll Number: 19

Experiment No: 13

Title: WAP to demonstrate:

Create an Address class with instance variables of String type:

apptDetails

district

state

country

Create a class Person with instance variables:

int id

String name

Address addr

Create an Employee class and inherit Person class. It's instance variables:

String EmpId

String Dept

String Designation

You have to serialize and deserialize object of Employee class

```
import java.io.*;
class Address implements Serializable {
    String apptDetails;
    String district;
    String state;
    String country;
    Address() {
        apptDetails = "A-101";
        district = "Mumbai";
        state = "Maharashtra";
        country = "India";
    }
}
```

```

class Person implements Serializable {
    int id;
    String name;
    Address addr;
    Person() {
        id = 1;
        name = "John Doe";
        addr = new Address();
    }
}

class Employee extends Person {
    String empId;
    String dept;
    String designation;
    Employee() {
        empId = "E101";
        dept = "IT";
        designation = "Software Engineer";
    }
}

public class EmpSerialize {
    public static void main(String[] args) {
        Employee emp = new Employee();
        try (FileOutputStream fos = new
FileOutputStream("emp.ser");
            ObjectOutputStream oos = new ObjectOutputStream(fos)) {
            oos.writeObject(emp);
        } catch (IOException e) {
            System.out.println("Error serializing employee: " + e);
        }
        try (FileInputStream fis = new FileInputStream("emp.ser");
            ObjectInputStream ois = new ObjectInputStream(fis)) {
            Employee deserializedEmp = (Employee) ois.readObject();
            System.out.println("Deserialized Employee:");
            System.out.println("ID: " + deserializedEmp.id);
            System.out.println("Name: " + deserializedEmp.name);
            System.out.println("ApptDetails: " +
deserializedEmp.addr.apptDetails);
            System.out.println("District: " +
deserializedEmp.addr.district);
            System.out.println("State: " +
deserializedEmp.addr.state);
            System.out.println("Country: " +
deserializedEmp.addr.country);
            System.out.println("EmpID: " + deserializedEmp.empId);
            System.out.println("Dept: " + deserializedEmp.dept);
        }
    }
}

```



```

        System.out.println("Designation: " +
deserializedEmp.designation);
    } catch (IOException | ClassNotFoundException e) {
        System.out.println("Error deserializing employee: " +
e);
    }
}
}
}

```

Output: (screenshot)

```

OUTPUT  TERMINAL  PORTS  POSTMAN CONSOLE
▼ TERMINAL
cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac EmpSerialize.java && java EmpSerialize
/Users/chaitanyadalvi/.zshrc:1: /opt/homebrew/bin:/opt/homebrew/sbin:/usr/local/bin:/System/Cryptexes/App/usr/bin:/us
r/bin:/bin:/usr/sbin:/sbin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/local/bin:/var/run/com.app
le.security.cryptexd/codex.system/bootstrap/usr/bin:/var/run/com.apple.security.cryptexd/codex.system/bootstrap/usr/a
ppleinternal/bin:/opt/homebrew/bin:/opt/homebrew/sbin:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Too
lbox/scripts:/Users/chaitanyadalvi/Library/Application Support/JetBrains/Toolbox/scripts:/usr/local/mysql-9.0.1-macos
14-arm64 not found
● chaitanyadalvi@Mac assignment3.2 % cd "/Users/chaitanyadalvi/Desktop/Dir1/assignment3.2/" && javac EmpSerialize.jav
a && java EmpSerialize
Deserialized Employee:
ID: 1
Name: John Doe
ApptDetails: A-101
District: Mumbai
State: Maharashtra
Country: India
EmpID: E101
Dept: IT
Designation: Software Engineer
○ chaitanyadalvi@Mac assignment3.2 %

```