FILE HANDLING IN JAVA – THEORY NOTES

1. Introduction

- File handling is used to store data permanently in a storage device.
- Data stored in memory (RAM) is temporary and lost when the program ends.
- Files allow programs to save and retrieve data whenever required.
- Common operations include create, write, read, append and delete.

2. java.io Package

- Java provides file handling support through the java.io package.
- To use file classes, import statement is required.
- Example: import java.io.*;

3. File Class

- The File class is used to represent a file or directory.
- It is used to create, delete and get information about files.
- Creating a File object does not create the file physically.
- The file is created only when createNewFile() method is called.

Important Methods of File Class

Method	Purpose
createNewFile()	Creates a new file
exists()	Checks whether file exists
delete()	Deletes the file
getName()	Returns file name
getAbsolutePath()	Returns full file path
length()	Returns file size
canRead()	Checks read permission
canWrite()	Checks write permission

4. Writing to a File (FileWriter)

- FileWriter class is used to write text data into a file.
- If the file does not exist, it will be created automatically.
- By default, FileWriter overwrites the existing content.
- Always close the file using close() method.

5. Appending Data

- Appending means adding new data without deleting existing data.
- Use: new FileWriter("sample.txt", true);
- The true parameter enables append mode.

6. Reading from a File

- Files can be read using Scanner, FileReader or BufferedReader.
- Scanner class is simple and commonly used for beginners.
- Data is usually read line by line.

7. Deleting a File

- The delete() method of File class is used to remove a file.
- It returns true if deletion is successful, otherwise false.

8. Exception Handling in File Operations

- File operations may generate errors such as file not found or access denied.
- These errors are called exceptions.
- They can be handled using try-catch or throws Exception.
- For simple programs, throws Exception is commonly used.

9. Important File Handling Classes

Class	Purpose
File	Create, delete and get file information
FileWriter	Write data to file
FileReader	Read characters from file
BufferedReader	Efficient reading of text
Scanner	Easy file reading

10. File Handling Process Flow

- Create File
- Write Data
- Read Data
- Append Data
- Delete File