**Advanced Java**

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| **Course Code** | **18CS552** | **Credits** | 3 |
| **Course type** | PE | **CIE Marks** | 50 |
| **Hours/week: L-T-P** | 2-0-2 | **SEE Marks** | 50 |
| **Total Hours** | 40 | **SEE Duration** | 03 hours |

**LIST OF PROBLEM STATEMENTS**

1. Write a menu driven Java program to read contents of a file and : a) print characters on the console – one character at a time b) print the entire file c) print contents to another file. Read both source & target file names & check for their existence/ non – existence to take appropriate actions.
2. Write a Java Program to demonstrate the implementation of stream classes in Java. Assume that an input file named "input.txt" already exists with few lines of random text. Accept a filename from the user, this will be the destination file. Write a menu driven program to do the following: 1) Transfer the contents of the input file to the destination file using the ByteArrayInputStream /ByteArrayInputStream class 3) Display the contents of the destination file.
3. Write a Java Program to demonstrate the implementation of reading and writing binary data in Java. 1) Read the source and destination file names. 2) Read user defined text to be written to the source file. 3) Write every alternate byte from the source to the destination file. 4) Compare the properties of the file.
4. Write a menu-driven Java Program to create an ArrayList of (1) integers and (2) floats of user specified length. Write a set of overloaded methods to “add” and/or “remove” elements from the arrays and another set of overloaded methods to perform linear search on the arrays, given the key element. Create object(s) to demonstrate the above functionalities.
5. Write a menu-driven Java Program to create a HashMap to store key-value pairs of login credentials. The menu options to be provided are for : adding a key-value pair, retrieve the “value” for a given “key” (first check if the specified key is present), retrieve all the keys, retrieve all the values, retrieve all the key-value pairs, change the value associated with a key in a HashMap, remove a HashMap element given the key, remove a HashMap entry with Key and Value, check if a given “value” exists in the Hashmap and display the HashMap. Read user input where required and display suitable error messages where applicable.
6. Write a multithreaded Java program to create a list of numbers and then sort the contents in ascending (thread 1) and descending (thread 2).
7. Write a Java program to demonstrate how the standard operations on a bank account can be synchronized.
8. Write a multithreaded Java program to demonstrate the Producer-Consumer problem.
9. Write a Java program to search and display details of book(s) authored by a particular author from a “BOOKS” table. Assume an appropriate structure and attributes for the table.
10. Program to demonstrate transaction processing. Assume an appropriate database/table.
11. Write a servlet program that allows receives a CGPA score and retrieves (from a db) the list of students who are eligible for a particular placement drive.
12. Write a Servlet program that accepts a vehicle registration number and displays the owner’s details (name, address, phone number). Assume that the details are stored in a database.