



Project Title – Core Java Assignments-2

Project Type	Project Name/ID	Hosted By TG/Account	Duration	Project Owner /Account
L2 Assignment	Core Java Assignments-2	TopGear	3 PDs	NA

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About This Project

This is a L2 level training on Java topics on Java Files & I/O and Collection objects

Who Is Eligible

All users who have either completed Top Gear Core Java L1 training or experienced with OOPS and essential Core Java programming.

Pre-Requisites

1. User need to have experience in Object Oriented Programming Concepts (OOPS) and Core Java.
2. Should have completed Core Java L1 level training.
3. User is recommended to consult a TopGear mentor and clarify doubts/queries (if any) before joining the project.
4. Project to be submitted to TopGear project repository using GIT with appropriate documentation and packaged as guided by TopGear mentor.
5. Irrelevant submission will be barred from review and will be considered not completed, which will be re-opened with appropriate comments.

Scope of Work & Deliverables

1. Coding & Testing
2. Source files packaged as guided.
3. To understand executing and submission process of TopGear Training and Case study projects user can refer following documents on the portal:

https://topgear-app.wipro.com/sites/default/files/steps_to_execute_topgear_training_case_study_projects_v1-2-2.pdf

Note: User is recommended to read this document thoroughly before starting with their respective TopGear project.

Technologies

This training uses Java programming language to explore and learn Java Streams and Collections.

Training Tasks

Assignment 1:

Create Employee class with member's empNo, eName, salary, departmentName, location. Use single dimensional array of employee objects of size 10, to read 10 employees data from console. After reading to read these records from the array and display them in sorted order by salary.

Assignment 2:

Create a class Employee with data member's empno, ename, and salary, departmentName. Write a member function SalIncrease with a parameter 'Percentage' of type int. If Percentage is greater than 100% throw an exception SalOverflow. Design SalOverflow exception class with a data member Msg of type String. Inside SalIncrease function provide try catch block for handling the exception SalOverflow. The code inside SalIncrease should create SalOverflow object and update the error message and throw the exception SalOverflow. The catch block inside SalIncrease should accept the parameter of type SalOverflow. Inside catch block print the error message stored in Msg member of SalOverflow to the console.

Assignment 3:

Design a Song interface having Play function, and Duration function. Duration function returns duration of song in seconds. Design classes Jazz, Rock, Ghazal classes which implement Song interface. Design Playlist class, which maintain a list of songs. Write a program to create a playlist for user. Accept name of playlist, few song details from user. For each song, accept name, duration from user. At the end play the whole playlist with all details of the song and duration in mm:ss format.

Hint: To play a song, you may choose to make beep sound, or simply display the song details on screen.

Assignment 4:

Define a class named Payment that contains a member variable of type double that stores the amount of the payment and appropriate accessor and mutator methods. Also create a method named paymentDetails that outputs an English sentence to describe the amount of the payment. Next, define a class named CashPayment that is derived from Payment. This class should redefine the paymentDetails method to indicate that the payment is in cash. Include appropriate constructor(s).

Define a class named CreditCardPayment that is derived from Payment. This class should contain member variables for the name on the card, expiration date, and credit card number. Include appropriate constructor(s). Finally, redefine the paymentDetails method to include all credit card information in the printout. Create a main method that creates at least two CashPayment and two CreditCardPayment objects with different values and calls paymentDetails for each.

Assignment 5:

As a Data Analyst, you are required to analyze Order transactions. Before starting the analysis, data needs to be cleaned up.

Write a program to perform the following cleanup:

- a. Convert the order amount to display values in Rs.

Hint: -> extract the character in amount column

-> Get corresponding value from hash map and multiply to get value in Rs.

Eg. 2.34M => 2.34 * 1000000 = 2340000

- c. Find the total Order Amount

Output required: Total Order Amount in Rs for all orders.

The function prototype should be as below –

```
int TotalAmount(ArrayList<String>);
```

Use the following Hashmap for lookup of conversion value:

M -> 1000000

K -> 1000

H -> 100

Test Cases –

Input	Expected Output
"1001;Online;Target Corp;234K", "1002;Store;Advantec Corp;1.3M", "1003;Online;Marvel Brothers;2.1M", "1004;Store;Chandran Enterprises;211H", "1005;Store;Santoor Pharma;11K"	3666100
"1006;Online;Target Corp;164H", "1007;Store;Advantec Corp;1.8K", "1008;Online;Marvel Brothers;207H", "1009;Store;Chandran Enterprises;2.1M", "1010;Store;Santoor Pharma;55K"	2193900

Environment

To execute this training project user can use own desktop/laptop set with essential Java development environment (need GitBash tool) or can use TopGear provided VDI (Spring SOA Hibernate) which is configured for Java and Java EE development.

Completion Criteria

- Employee should complete the project within timeline provided.
- In case user has not follows appropriate steps or job is partly finished, then project can be reopened/reverted back.
- Employee must follow all rules and task as instructed to avoid rejection/reopening of projects.
- Once the project is closed successfully after submission and review, user will earn # reward points and the user will visible to appropriates practices and accounts.
- If the user has completed a Use case, project or Solution project, he/she must update his/her Wipro profile add the project details he worked.
- User should update efforts against TopGear projects in time sheet.

Assumptions

Users joining this program have knowledge/understanding of OOPS concepts, IO Streams, Collection Framework and Core Java programming.

Project Submission Guidelines

- Login <https://topgear.wipro.com>
- Go to UI Development → Java → Training Tab
- Join Core Java Assignments-2 project.
- Practice on assignment as per project specification.
- Once complete the project work, submit/check-in the same as instructed to TopGear GitLab.
- User can refer following document to understand execution and submission procedure of TopGear training and case study projects

[https://topgear-app.wipro.com/sites/default/files/steps to execute topgear training case study projects v-1-2-1.pdf](https://topgear-app.wipro.com/sites/default/files/steps%20to%20execute%20topgear%20training%20case%20study%20projects%20v-1-2-1.pdf)

References

<https://www.javatpoint.com/java-tutorial>

<https://docs.oracle.com/javase/tutorial/essential/io/streams.html>

https://www.tutorialspoint.com/java/java_files_io.htm

<http://www.roseindia.net/java/example/java/io/file-handling-in-java.shtml>