Experiment – 1 a: TypeScript

Name of Student	**Sonam Chhabaidiya**
Class Roll No	**D15A_09**
D.O.P.	
D.O.S.	
Sign and Grade	

AIM : Write a simple TypeScript program using basic data types (number, string, boolean) and operators.

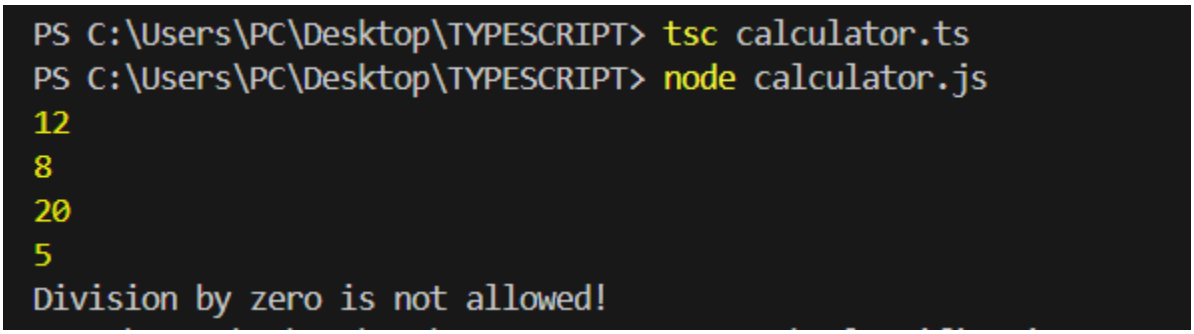
OVERVIEW OF TASKS PERFORMED :

The experiment involves implementing a **calculator** in TypeScript that performs basic arithmetic operations (addition, subtraction, multiplication, and division) while handling invalid operations and division by zero gracefully. Additionally, a **Student Result Database Management System** was designed using TypeScript, where student details and subject marks were stored as variables. The total and average marks were calculated, and a condition was applied to determine whether the student passed or failed. The results were then displayed in the console.

GITHUB LINK - https://github.com/sonamcc/webx1a

OUTPUT

(a) TypeScript Calculator

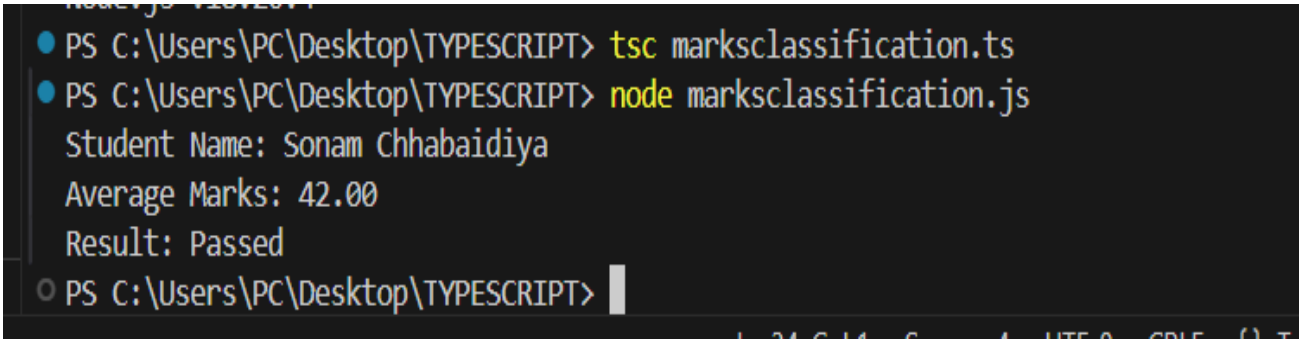


This screenshot showcases the output of the **TypeScript Calculator**, which performs basic

arithmetic operations such as addition, subtraction, multiplication, and division. The console displays:

- The results of valid operations (`add`, `subtract`, `multiply`, and `divide`).
- An error message when attempting **division by zero**.
- An error message for an **invalid operation** (e.g., `modulus`).

(b) Student Result Database Management System



This screenshot displays the output of the **Student Result Database Management System**, which calculates and prints:

- The **student's name**.
- The **average marks** (formatted to two decimal places).
- The **final result** (either "Passed" or "Failed" based on a 40% passing criteria).

CONCLUSION

This experiment successfully showcased the development of a **calculator** and a **student result management system** using TypeScript.

The **calculator** efficiently performs arithmetic operations while ensuring proper error handling, such as managing invalid inputs and preventing division by zero.

The **student result management system** effectively organizes student data, computes total and average marks, and determines pass/fail status using object-oriented programming principles.