PROJECT REPORT

Percentage and Performance Analyzer using Java

Student Name: Shreyash Srivastava

Class: ISC Class XI

Subject: Computer Science

Programming Language: Java

IDE Used: BlueJ

Project Type: Console-Based Application

1. Introduction

Academic performance evaluation is an essential task in educational institutions.
This project, **Percentage and Performance Analyzer**, is a Java-based console application designed to analyze students' academic performance. The program calculates the total marks and percentage, assigns grades, determines pass or fail status, and identifies the weakest subject for each student.
The project supports multiple students and uses arrays and loops for efficient data handling.

2. Objectives of the Project

The main objectives of this project are:

- To accept marks of students in multiple subjects

- To calculate total marks and percentage

- To assign grades based on performance

- To determine pass/fail status

- To identify the weakest subject for each student

3. Tools and Technologies Used

- **Programming Language:** Java

- **IDE:** BlueJ

- **Platform:** Console-based application

4. Concepts Used

The following Java concepts were used in this project:

- Arrays

- Loops (for loop and nested loops)

- Conditional statements (if–else ladder)

- Scanner class for user input

- Basic algorithm to find minimum value

5. Program Logic

The program first asks the user to enter the number of students.
 For each student, the program accepts the name, roll number, and marks in five subjects using an integer array. The total marks are calculated using a loop, and the percentage is computed from the total marks.
 Based on the percentage obtained, the program assigns a grade and determines whether the student has passed or failed.
 Another loop is used to compare subject marks and identify the subject with the lowest marks, which is displayed as the weakest subject

INPUT

```
Enter the no. of students
1
Enter the name of the student
Shreyash
Enter the roll no. of the student
32
Enter the marks in  English
93
Enter the marks in  Maths
99
Enter the marks in  Physics
95
Enter the marks in  Chemistry
94
Enter the marks in  Computer
99
```

OUTPUT

```
students name:  Shreyash
students roll no. is: 32
student's percentage: 96.0
Grade-A
PASS
the weakest subject is English with lowest marks- 93
```

7. Limitations of the Project

- The program is console-based and does not use a graphical interface

- Marks are entered manually through the keyboard

- File handling and database storage are not implemented

8. Future Scope

The project can be enhanced further by:

- Adding file handling to read student data from datasets

- Implementing object-oriented design using multiple classes

- Creating a graphical user interface (GUI)

- Storing student records in a database

9. Conclusion

This project helped in understanding the practical use of arrays, loops, and conditional statements in Java. It improved logical thinking and problem-solving skills by combining multiple programming concepts into a single application.
 The project provides a strong foundation and can be further enhanced with advanced Java features in the future.