Day 2

Mini Project:

You are required to implement a **Student Report Card Generator** in Python using Object-Oriented Programming (OOP) principles.

Problem:

Write a Python program using a class called `Student` to manage a student's academic performance. The program must:

Part A — Class Implementation

1. Create a class `Student` with the following:
   - Attributes: `name`, `age`, and `grades` (a dictionary to store subject → marks)
   - Method `add_grade(subject, marks)` to add a subject and its marks to the dictionary
   - Method `calculate_average()` to compute the average of all subject marks
   - Method `assign_grade()` to return the letter grade based on average:

Average Score	Grade
80 and above	A
60 to 79	B
40 to 59	C
Below 40	F

2. Add a method `apply_bonus(lambda_func)` that applies a lambda function to increase all subject marks (max 100).
3. Add methods to:
   - `generate_report()` to return a formatted report string.
   - `save_to_file(filename)` to save the report to a `.txt` file.
   - A `@staticmethod load_from_file(filename)` to read and display the report.

Part B — Program Flow

1. Prompt the user to enter the student's `name` and `age`.
2. Take marks input for **3 subjects**: Math, English, and Urdu.
3. Ask the user:

> Do you want to apply 5 bonus marks to all subjects? (yes/no)
>
> If yes, use a **lambda function** to apply the bonus

Part C — File Handling & Output

1. Save the report to a file named `<name>_report.txt`
2. Read from the file and display the report in the console.

✅ Example Output:

```
Enter student's name: Ali Enter age: 20 Enter marks for Math: 90 Enter marks for English:
83 Enter marks for Urdu: 95 Add 5 bonus marks to all subjects? yes Report saved successfu
lly! Report Card: Name: Ali Age: 20 Math: 95 English: 88 Urdu: 100 Average: 94.33 Grade:
A
```