ADF-I PRETEST 3

Question

Write a Java program that helps managing a list of students with the following description:

No.	Specification
1	Create **abstract** class **Student** in **basic** package that stores the following details: - Protected Fields: id, name, yob(year of birth) - Constructors to initialise the all fields. - Methods: public abstract void **print()** public void **input ():** input data for a student with following constraints: • ID, name is not null • Age must be between 15 and 60
2	Create sub class **StudentFPT** **derives from Student**, in package **basic.** Including: - Fields: **theoryMark, practiceMark, project.** - Constructors to initialise the all fields. - public float **getFinal()** : return the final mark that calculated by formula : (theoryMark*2 + practiceMark + project*3)/6 - Override methods : **input():** allow user input more data into data fields **theoryMark, practiceMark, project**. Using try-catch exception for data validation: marks must be between 0 and 100 **print():**display detailed information of a student, including final mark.
3	Create a main class named **Test** in **app** package, manage a list of **StudentFPT**, declares : Fields: - **StudentFPT[ ] arr**: store array of the students - **max**: the maximum of the number of students in the array. - **next**: the actual number of students in the array. Methods: - **add()**: create a new studentFPT and then save into the array. However, if the array is full, display an error message. - **displayAll()**: list all students - **displayPass()**: display list of the students passed the examinations (each mark must be greater than 40 and final mark >=50)

	- **displayTop1()**: display list of the students had the highest score. - **main():** to invoke above functions through a menu system. Use the **switch-case and loop** statements to displays a following menu. **1.** Add new student **2.** Display all students **3.** Display students passed the examinations **4.** Display Top 1 Students **5.** Exit