In Java, you can use a final variable to achieve the same effect as a C #define directive. Here's how you can modify the given Java program to use a constant for the maximum number of students:

import java.util.Scanner;

public class Baitapbuoi5\_bai5 {

// Define the maximum number of students as a constant

**private static final int STUDENT\_MAX\_NUM = 3;**

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

Student[] students = new Student[STUDENT\_MAX\_NUM];

for (int i = 0; i < STUDENT\_MAX\_NUM; i++) {

students[i] = new Student();

System.out.print("Enter name of student " + (i + 1) + ": ");

students[i].name = scanner.nextLine();

System.out.print("Enter birth year of student " + (i + 1) + ": ");

students[i].birthYear = scanner.nextInt();

scanner.nextLine(); // Consume the newline character left in the buffer

}

int birthYearMin = students[0].birthYear;;

int birthYearMinIndex = 0;

for (int i = 1; i < STUDENT\_MAX\_NUM; i++) {

if (students[i].birthYear < birthYearMin) {

birthYearMin = students[i].birthYear;

birthYearMinIndex = i;

}

}

System.out.println("The youngest student: " + students[birthYearMinIndex].name + ", birth year: " + students[birthYearMinIndex].birthYear);

scanner.close();

}

}

Now, the STUDENT\_MAX\_NUM constant is defined at the class level and can be used throughout the class to indicate the maximum number of students. If you want to change the maximum number of students, you only need to modify the value of STUDENT\_MAX\_NUM at one place in the code.

User

Explain "final" keyword in below code line

private static final int STUDENT\_MAX\_NUM = 3;

ChatGPT

In the given code line:

java

Copy code

private static final int STUDENT\_MAX\_NUM = 3;

The final keyword is used to declare a constant variable in Java. When a variable is marked as final, its value cannot be changed once it has been assigned a value. Here's what the final keyword does:

private: This access modifier makes the variable STUDENT\_MAX\_NUM accessible only within the class it is declared in. Other classes cannot directly access or modify this variable.

static: This keyword makes the variable a class-level variable, meaning it is associated with the class itself rather than with any specific instance of the class. It allows the variable to be accessed without creating an instance of the class.

final: This keyword indicates that the variable STUDENT\_MAX\_NUM is a constant and its value cannot be changed after it has been assigned. In this case, STUDENT\_MAX\_NUM is set to 3, and its value cannot be modified later in the program.

By declaring STUDENT\_MAX\_NUM as private static final int, it becomes a constant that can be accessed only within the class, is associated with the class itself, and its value cannot be changed during the program's execution. This allows you to define a maximum number of students that remains constant throughout the program, making it easier to manage and prevent accidental modifications.