# 03.02 GPAV1 Desk Check

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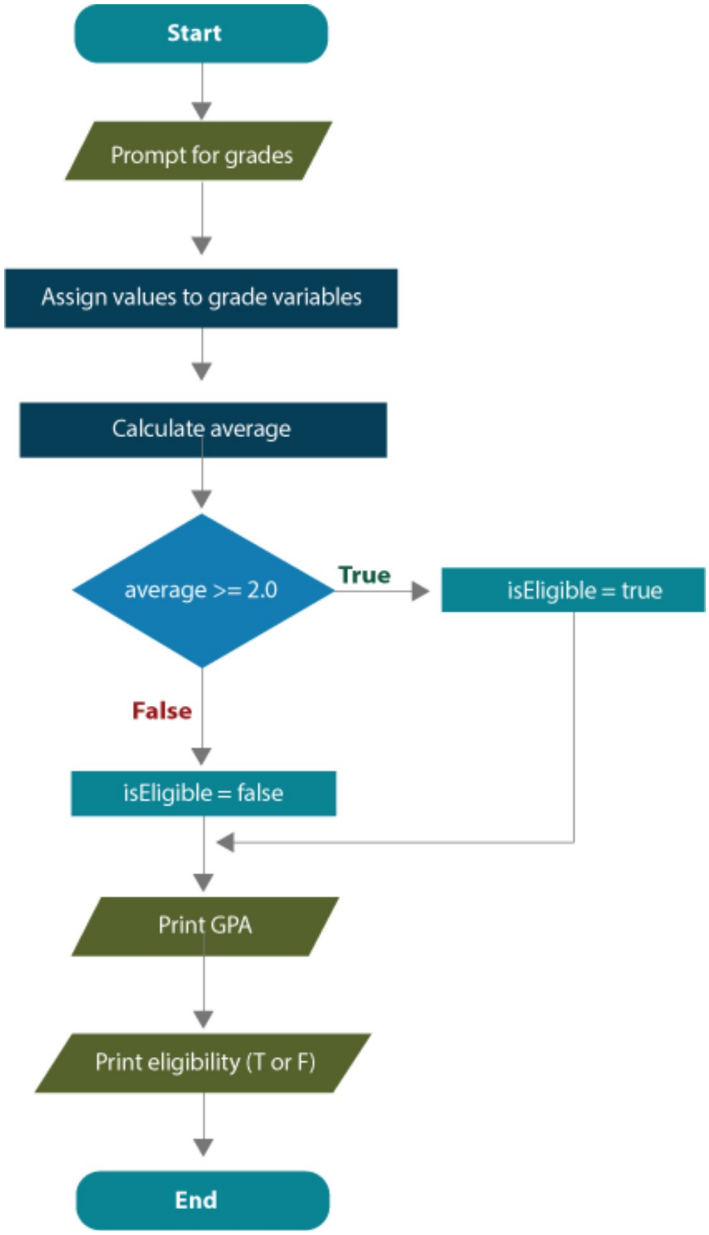
The GPAV1 class is a program designed to calculate the GPA of a student and determine eligibility to participate in extracurricular activities. A flowchart and corresponding pseudocode for the design of this program are shown below:




GPAV1 Pseudocode

- Prompt input of five numeric grades.

- Assign grades to five integer variables.
- Calculate the average grade.
- Determine if average >= 2.0.
    - True → isEligible = true
    - False → isEligible = false
- Print the GPA.
- Print the eligibility status.

Examine the flowchart and pseudocode and compare them to the source code. Notice the overall organization of the GPAV1 class, including the use of indentation and white space to help with readability.

Can you identify the sections that deal with input, processing, and output?

Run the program. Did it behave as you expected?

Study the following line-by-line analysis of the source code. Make sure you understand the purpose and syntax of each line in the program. Pay close attention to the boolean variable and expression.

```
import java.util.Scanner;
public class GPAV1
{
   public static void main(String[] args)
   {
```

**How it works:**

- Imports the Scanner class from the java.util package, making its methods available.
- Declares the name of the class to be GPAV1.
- Declares and begins the `main()` method.

```
Scanner in = new Scanner(System.in);
```

**How it works:**

- Creates a new **`Scanner`** class object named **`in`** to be used with input methods.

```
System.out.println("GPA Calculator");
System.out.println();
```

```
     System.out.println("Enter 5 grades separated by a space
(4 3 2 1 4)): ");
     int grade1 = in.nextInt();
     int grade2 = in.nextInt();
     int grade3 = in.nextInt();
     int grade4 = in.nextInt();
     int grade5 = in.nextInt();
```

**How it works:**

- Prints a string literal as the heading for the output.
- Prints a blank line to improve readability.
- Prompts the user to enter five grades as integers.
- Reads the user's integer input and assigns the first token to grade1.
- Continues reading user input and assigning each token to the declared integer variables.

```
     double average = (grade1 + grade2 + grade3 + grade4 +
grade5)/5.0;
```

**How it works:**

- Calculates the average of the five grades and assigns the double value to average. Remember, an integer divided by a double will produce a double value.

```
     boolean isEligible = average >= 2.0;
```

**How it works:**

- Declares a boolean variable called isEligible and will be assigned the result of the boolean expression, which will evaluate to true or false. If average is greater than or equal to 2.0, true is assigned. Otherwise false is assigned.

```
     System.out.println("GPA: " + average);
     System.out.println("Eligible: " + isEligible);
     }
}
```

**How it works:**

- Prints the result of concatenating the string literal and the value of the average variable.
- Prints the result of concatenating the string literal and the value of the isEligible variable.
- Curly brace indicating the end of the `main()` method and another indicating the end of the class.

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Print