**Algorithm  
  
Step 1: Initialization**  
  
Input: College name, location, student name, registration number, course, day, month, year of birth.  
  
Output: An initialized student object with the default GPA set to [4.5](tel:4.5).  
  
Algorithm:  
  
1. Create an object of the College class using the name and location provided.  
  
  
2. Create an object of the DateOfBirth class using the birth date provided.  
  
  
3. Create an object of the Student class using the student name, registration number, course, the College object, and the DateOfBirth object.  
  
  
4. Initialize GPA to [4.5](tel:4.5).  
  
  
5. Initialize semester to 1.  
  
  
6. Initialize CGPA to [4.5](tel:4.5).  
  
  
  
  
**Step 2: Capturing Marks**  
Input: Array of marks for the current semester.  
  
Output: Updated GPA for the current semester.  
  
**Algorithm:**  
  
1. Receive an array of marks from the user.  
  
  
2. Store the marks in the marks attribute.  
  
  
3. Calculate the GPA using the formula:  
  
  
  
  
  
4. Set the calculated GPA as the value of the GPA attribute.  
  
  
  
  
**Step 3: Updating CGPA**  
  
Input: Current GPA, previous CGPA, and semester number.  
  
Output: Updated CGPA after each semester.  
  
**Algorithm:**  
1. Update the CGPA using the formula:  
  
  
  
  
  
2. Update the CGPA in the CGPA attribute.  
  
  
  
  
**Step 4: Updating Semester**  
Input: Current semester number.  
  
Output: Updated semester number.  
  
**Algorithm:**  
  
1. Increment the semester attribute by 1.  
  
  
  
  
**Step 5: Calculating Student's Age**Input: Current date (day, month, year).  
  
Output: Student's age in years.  
  
**Algorithm:**  
  
1. Subtract the student's birth year from the current year.  
  
  
2. If the current month is less than the student's birth month or the current day is less than the student's birth day, decrement the age by 1.  
  
  
3. Return the calculated age.  
  
  
  
  
**Explanation and demonstration of Workflow**  
  
1. Initialize the College, DateOfBirth, and Student objects.  
  
  
2. Capture marks for the current semester, calculate GPA, and update CGPA.  
  
  
3. After each semester, update the semester and repeat the GPA and CGPA calculation process.  
  
  
4. Calculate age using the current date and display it when required.