### Project Status Report

**Project:** BMI Calculator Pro  
**Course:** SDEV140 – Final Project  
**Status:** More Than Halfway Complete

**What I Have Completed**

I have made significant progress on the BMI Calculator Pro project. So far, I have:

* **Developed the Core Functionality:**  
  I implemented the BMI calculation logic for both the metric (BMI = weight (kg) / height² (m²)) and imperial (BMI = (703 × weight (lbs)) / height² (in²)) systems. The calculation rounds results to one decimal place.
* **Designed the User Interface:**  
  I have built the primary GUI using Python's Tkinter. The main window now includes input fields for height and weight, dropdowns for unit selection, and buttons for calculating BMI, clearing inputs, and navigating between windows.
* **Implemented Input Validation and Error Handling:**  
  I created routines to ensure only valid numerical inputs are accepted, incorporated range checking to prevent unrealistic values, and set up user-friendly error messages to guide corrections.
* **Outlined Testing Strategies:**  
  I drafted unit tests to verify calculation accuracy and input validation. I also planned for integration and user acceptance tests to ensure smooth interaction among the UI components.

**Problems Encountered**

While I have made good progress, I have faced several challenges:

* **Real-Time Input Validation:**  
  I encountered difficulties ensuring that the input fields provide immediate and clear feedback when users enter incorrect data. Managing the balance between strict validation and user convenience has been challenging.
* **Unit Conversion Accuracy:**  
  Fine-tuning the real-time conversion between metric and imperial units presented some complexities, particularly in ensuring precision while keeping the interface responsive.

**Next Steps**

To move closer to the final project completion, my upcoming tasks include:

* **Enhancing Input Validation:**  
  I will refine the validation process to ensure robust, real-time error detection and improve the user feedback system.
* **Finalizing the Unit Conversion and Calculation Modules:**  
  I plan to optimize the conversion logic further to ensure precise results in both measurement systems, including additional testing for edge cases.
* **UI Improvements:**  
  I will adjust the GUI for better responsiveness and accessibility, ensuring that the interface scales well on various devices and meets usability standards.
* **Integration and User Acceptance Testing:**  
  I intend to conduct thorough testing to verify that all components (calculation logic, navigation between windows, error handling) work seamlessly together.
* **Documentation and Final Touches:**  
  I will complete the documentation and polish the overall user experience in preparation for the final submission.

Overall, I am confident in the progress made so far and committed to resolving the remaining challenges to ensure a robust and user-friendly application.

