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Requirements for Racing Game UI Project

**FUNCTIONALITY**

1. **Race Logic Behavior**
   1. **The race should be able to have multiple Cars, the color/type of which is selected by the user.**
   2. **Each car should have a different time for each stop, no two cars should be built the same.**
   3. **The winner of the race should be declared.**
   4. **The winner should be the car with the shortest racing time.**
   5. **Each car should have a different route on the racetrack.**
2. **Car Behavior**
   1. **Each car is built with a different engine and tires that will directly determine the car's speed.**
   2. **Each car should travel between stops on its route to the maximum of its engine's possible speed.**
   3. **The time each car takes to complete the race should be stored and displayed**
3. **Track Behavior**
   1. **A racetrack should be created with a set number of designed stops (A, B, C, and D), one for each car's starting point and another for its finishing point.**
   2. **Each stop should have a name and be in the same location on the racetrack.**
   3. **The racetrack should allow multiple cars to travel along it simultaneously, and each car should be assigned an individual stop at its starting point.**
4. **Stop Behavior**
   1. **The stop class is responsible for creating stop objects that serve as checkpoints throughout the race.**
   2. **Each stop object is responsible for knowing its position via a position object that is an attribute as well as the next stop/checkpoint a car would travel to if it was stopped at that checkpoint.**
   3. **Each stop is also supposed to be aware of its x and y coordinates.**
   4. **The functions that are a part of the stop class and are designed to make it so any stop can set the next stop the car would travel to as well as get that next stop and the position of any stop.**
5. **Race GUI Behavior**
   1. **The progress of each car should be displayed to the user throughout the race.**
   2. **Creates a grid that the racetrack is placed on and the race occurs on.**
   3. **There should be a prompt for the user to select the color of each car.**
   4. **Each car's race time and speed should be displayed to the user.**
   5. **The winner of the race and their winning time should be displayed to the user.**
6. **Tire Behavior**
   1. **Each set of tires should have a speed that is set when it is constructed.**
   2. **The tire class should contain a function for returning the speed of said tires.**
7. **Engine Behavior**
   1. **Each engine should have a speed value as an attribute that is linked to the engine object.**
   2. **In the engine class, a method should exist in which you can retrieve the speed of the engine object.**
8. **Main Class Behavior**
   1. **The main class is responsible for launching the Race GUI when it is running, which will launch the Racing Game.**
9. **Position Behavior**
   1. **The position class is responsible for creating a position-type object that knows its own x and y coordinates in the grid that is created.**
   2. **The position class contains a method for getting the x coordinate and another method for returning the y coordinate of the position object.**