PROGRAMMING EXERCISE 1: TANK BATTLE

Game rules

1. Create a playing field using a couple of different planes that have a variety of rotations. Give these planes a colour. Make sure to rotate some planes around two and some planes around three axes.
2. Create a tank using two boxes and a cylinder: one box for the body, one for the turret and the cylinder for the barrel. Place the tank on the playing field.
3. The tank should float a bit above the ground plane. This floating distance can be set in the editor.
4. The player can move the tank body in eight directions using the arrow keys. The tank should not change its orientation around the y-axis when moving. The change in movement speed should be instantaneous (so no smooth acceleration/deceleration).
5. Make sure the tank stays aligned (in the x- and z-axis) to the plane it's currently on. *Note: it's possible to create a playing field that allows the tank to change its orientation around the y-axis without the player explicitly rotating the tank. You can ignore this special case.*
6. Make sure the floating height of the tank remains the same when it moves onto another plane.
7. The speed of the tank can be set in the Inspector view of Unity.
8. The player can rotate the turret (around its local y-axis) using the a and s button
9. When the player presses the fire button, a Ray is cast from the tip of the barrel is created. Make sure this Raycast is drawn in the Scene View of Unity.
10. Add some primitive objects (a couple of balls and/or cubes) to the Scene and give them a colour.
11. Add some more primitive objects to the Scene and give these objects the Tag "indestructible".
12. Whenever a Ray hits an object that does not have the Tag "indestructible", the name of the object should be displayed in the Console View and it should be removed from the game.
13. Save all objects as prefabs.

Other requirement/remarks

- Use the input manager (and the corresponding methods GetButton and GetAxis) to handle all user input. Avoid using GetKey.
- Use Vectors for all translations and rotations.
- Do not use a RigidBody for movement.
- Do not implement collisions other than the collision between the Ray and the objects.
- Make sure the movement of the tank is framerate independent and that its speed cannot exceed the speed set by the player (so beware of diagonal movement!).