Robocode – GER(robot) Description

# Global variables

We made the Booleans swap and alternate to control the flow of the way the robot moves.  
Swap (Boolean) is used to control whether to use the dodging/kiting technique. This technique makes the robot dodge the enemy robot’s fire immediately after it has shot its target. It does this by making the robot move left or right perpendicular to the robot right after it fires in order to dodge the target robot’s fire. When the Boolean is true, the technique is not in use and when it is false it is being used (kinda ironic but... yeah).  
-> Alternate (Boolean) is used to ‘alternate’ whether the robot moves left or right perpendicular to the robot. When alternate is false, it will use the dodging technique by moving back. Whereas when it is true, it will use the dodging technique by moving ahead.  
-> Center (Boolean) is used to check if the robot has entered the sentry immunity box. This controls whether to move on to the normal behaviour of the robot or to constantly keep calling the goTo method which we will describe later on in the description. When center is true, it will continuously try to enter the sentry immunity box at the beginning of the battle. Whereas when it is false, this means the robot has entered the sentry immunity box and it can now proceed to with its normal behaviour.  
-> Ang (double) is a variable that enables revAngle (method) to control whether the robot spins the gun clockwise or anticlockwise.  
-> Counter (int) is used to check how many times the robot has repeatedly hit a wall. This is used to avoid constant collision with the wall.  
-> Counter1 (int) is used to check how many times the robot has repeatedly been hit by a bullet. This is used to avoid constant bombardment by the enemy robot.  
-> Counter2 (int) is used to check if the robot has hit the enemy robot twice or more in a row. This is used to help the robot quickly takedown the enemy robot.  
  
Methods

goTo->We made a method called goTo, in addition to the default methods, which makes the robot goTo a certain co-ordinate on the battlefield. It does this by turning on the x-axis and moving xDist (which is the difference between the robot’s x co-ordinate and the locations x co-ordinate) then turning on the y-axis and moving yDist (which is the difference between the robot’s y co-ordinate and the locations y co-ordinate).  
while(true)-> This loop (main robot loop) basically carries out the swap and alternate methods and it changes depending on the condition of the robot after going through the other robot events.  
onScannedRobot->Checks if the targeted robot is the sentry and then reverses the angle to search for another enemy robot, since the sentry is not worth killing. If it sees an enemy it fires at it turns 90 deg perpendicular to it and moves ahead or back depending on alternate. Then counter2 checks to see if we can just takedown the robot.  
onBulletMissed->If the bullet misses it scans for the enemy it just targeted.  
onBulletHit->It scans for the enemy it just targeted.  
onHitByBullet-> It turns perpendicular to the target and dodges its next bullets. If the robot is being bombarded it goes crazy in the hope that the other robots lose track of it (and also to dodge its bullets).  
onHitWall->This was big problem when coding. We basically just made the robot go ahead a lot if it backed up into a wall and the inverse if it ran into a wall head-on. And if it did this repeatedly it would turn at angle away from the wall to avoid repeated collisions.  
onHitRobot->Pretty much the same thing as the wall except for the repeated collision part.