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Rules

Tentative point costs: (these will be updated in the near future)

- Projectiles cause 1 pt. damage to health
- Mines cause 10 pts. damage to health
- Collisions with other bots cause 1 pt. damage to health
- Collisions with walls cause 3 pts. damage to health
- Collisions with outside walls cost 0 pts. damage to health

- Driving drains *speed* units of battery per turn
- Batteries recharge 5 pts. per turn (unless invisible)
- Each fired projectile heats gun 10 pts.
- Gun overheats at 40 pts.
- Gun heat dissipates by 1 pt. each turn

- Starting/maximum health is 100 pts.
- Starting/maximum battery is 500 pts.
- Invisibility time limit is 500 turns

Battery
Bots have rechargable batteries which are drained each turn by the current speed they are traveling. Each turn the bot is not invisible, the battery recharges by 5 pts. The battery has a maximum capacity of 500 pts. When the battery reaches zero, the bot's engines will disengage and the bot will coast to a standstill.

Health
Health starts at 100 pts. and will be drained from collisions with projectiles, bots, walls or mines. When health reaches 0, the bot is dead. Reduced health does not affect the bot's performance.

Invisibility
Bots can enable a "cloaking device" which will make the bot invisible to scans from other bots. The bot will still collide with other objects and take damage normally. While the bot is invisible, the battery will not recharge. Additionally, a bot can stay invisible for a maximum of 500 turns. Once a bot becomes visible (by disabling the cloaking device or exceeding the time-limit), it must stay visible for as many turns as it was invisible. The bot will be unable to fire projectiles when invisible. If an invisible bot collides with another bot, it will still be dectected as normal.

Driving
To move, a bot must call the *Drive()* method with a direction specified in radians or as a vector. Directions specified in radians that are outside 0-2PI will be converted to an equivalent value in this range. Vectors will be converted to their corresponding unit vector values. Speed can be in the range from 0-20 units per turn. Negative values will have undefined results. Multiple *Drive()* commands may be issued in a turn, however, only the last command will take effect. If the battery is zero, calls to Drive() will fail -- the bot will neither turn nor accelerate. When a bot issues a *Drive()* command, it will begin acceleration to achieve the desired speed and direction. Acceleration and deceleration will take 1 pt. of speed per turn.

Firing
Firing is the main mode of attack for a bot. The *Fire()* method will take a radian or vector value like *Drive()*. *Fire()* will shoot a projectile that moves at 40 units per turn. When a projectile collides with any object (wall, bot, powerup), the projectile will explode. When a projectile hits a bot, that bot's health will be decreased by 1 pt. Bots have only 500 projectiles at the start of the match and may need to attain more ammo in the forms of powerups. Bots will be able to call getProjectileInfo() to receive an update on their projectiles' current position and info on bots which the projectile has hit. Each time a projectile is fired, a bot's gun will heat by 10 pts. The gun will overheat when heat is equal to or above 40 pts. Each turn, the gun will dissipate 1 pt. of heat. If *Fire()* is called multiple turns a round only the **first** call will take effect. Note that this is the opposite of how the *Drive()* method works.

Scanning
Scan() will give a bot information on bots, projectiles and powerups in a 45 degree sweep. The direction specified will center the sweep in the desired direction. Scans will have no distance constraints and are not obstructed by objects in the arena. The *Scan()* method will notify the simulator of the end of a bot's turn and so must be called by the bot to let its actions take effect.

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