Analysis of Latin Hypercube Game

Files:

a.out- created in the run script, contains everything that was in a.out.tmp through redirection except for any output from make clean.

a.out.tmp-A temporary file deleted by the run.sh script. This file contains information on how the command “make” ran. Following the make command, this file has all of the output of the game contained within it. Before it is deleted, “make clean” is ran and redirected to it.

game- A temporary file that is mentioned in “makefile”. It is the executable for the game. Deleted and rebuilt upon each run of the makefile.

.depend- a file used in the makefile for deleting “game.o”.

game.log- A file that puts information of each round into a comma separated list.

makefile- A unix style make file ran with the make command.

game.cpp- The game code itself.

game.conf- Contains values of variables that can be changed to affect each battle.

runloop.sh- runs the game multiple times and counts each time.

run.sh- runs make, redirects the file “game” output, sends what is contained in “a.out.tmp” to “a.out”, runs “make clean”, and deletes “a.out.tmp”.

safety.plt- A configuration file for the included plot created in python.

safety.png- a python created plot.

Game.cpp analysis

(note I will be refering to game.cpp from “game1”)

Classes:

Rnd-Generates a random number between 0 and 1 (double)

-operator()():By overloading this operator, causes a random number to be generated upon referring to an object of type Rnd

-reseed(unsigned long): creates a new seed for Rnd

Pos (Struct)-keeps track of x and y position

Soldier-Every instance of this object is one unit

-move: change position of each piece

-shoot: calculate the ability of each soldier to kill an enemy piece

-nm: print the soldier

Field-holds all info for each piece

-init: function ran by constructor to take values from game.conf

-arein: sees if anyone is in the base or not

-alldead: returns if all soldiers on a certain team have died or not

-survived: returns number of soldiers that have lived to the end

-aliveR: returns the remaining alive red soldiers

-aliveB: returns the remaining alive blue soldiers

-title: outputs information about each team

-map: prints the pieces and the playing field

-move: calls all soldier’s move function

-shoot: calls all soldier’s shoot function

-isdone: calls all functions that will help with printing end game statistics

-result: prints out end game statistics

-reset: resets the game

Functions:

-dist2:a function for calculating distance between 2 positions

-main: controls the loop of how many games should be played