Team RealTime- Jeffrey Weng, Yuanchu Liu (Leo Liu), Allard Peng

APCS2 Pd 3

UML DIAGRAMS

RevolutionGeometry (Driver class)
INSTANCE VARS
ArrayList <unit> playerTeam;</unit>
ArrayList <unit> computerTeam ;</unit>
Graveyard playerGraveyard; //Graveyards as a data structure are STACKS
Graveyard computerGraveyard ;;
Menu menu; //stores the means of managing units and currency through the interface
Boolean doOnce //a check to make sure only one unit is being trained at once
METHODS/FUNCTIONS
**Function of the class is to set up the field that the units battle on, and the menu that is the means of receiving commands from the player.
**Regulates the training and movement of all units on the field via draw()
**Increases rate at which player gains currency based on the number of miners

Menu ----INSTANCE VARS

Button[] buttons; //stores the positions of every individual button, which comes from the Button class

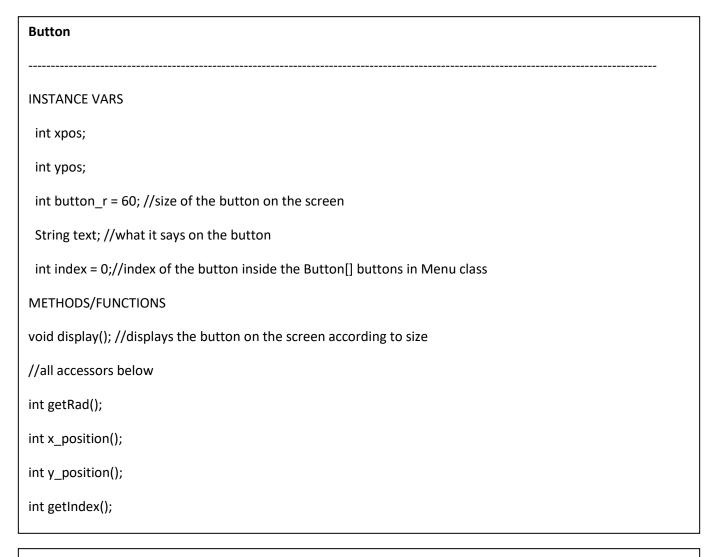
int currency; //this is basically the amount of money you have

METHODS/FUNCTIONS

void loadMenu(); //puts the menu on the interface of processing

int buttonPressed(); //detects the button that was pressed with the mouseclick, returns the index that the button is in inside the Button[] buttons

int getCurrency(); //returns how much money you have



Graveyard

INSTANCE VARS

ArrayList<Unit>_stack; //all dead units go here

METHODS/FUNCTIONS

Unit dequeue(); //remove the unit that was last put in

void enqueue(Unit a); //put a unit into the stack

int size(); //accessor for size of _stack

Unit (superclass) **INSTANCE VARS** protected int life; protected float speed; protected int trainingTime; protected int cost; protected PVector position; protected int damage; protected boolean team; //is the unit on the player's team or computers protected int y; //offset value to create a visual effect of depth protected float attackRange; METHODS/FUNCTIONS abstract void drawUnit(); abstract void updateHealth(); abstract int identifier(); //what unit is this one specifically? Right now it should be 0, which means swordsmen, but there will be a lot more units soon boolean isAlive() //very simply says whether this unit is dead or alive int getLife() //accessor for life void attack(Unit target) //the current target of the Unit that is being attacked Unit selectTarget(ArrayList<Unit> enemyTeam) //finds closest enemy Unit void move (Unit target) //the means of allowing a unit to move towards its closest enemy unit void updateHealth() //updates a life bar that decreases in green area when life is lost

Swordsmen (extends Unit)

INSTANCE VARS

Static final int COST = 5; (subject to change as of now)

METHODS/FUNCTIONS

void attack(Unit target) // as stated in superclass Unit

Archer (extends Unit)

INSTANCE VARS

Static final int COST = 15; (subject to change as of now)

METHODS/FUNCTIONS

void attack(Unit target) //as stated in superclass Unit

Wizard (extends Unit)

INSTANCE VARS

Static final int COST = 5; (subject to change as of now)

METHODS/FUNCTIONS

void attack(Unit target) //attacks enemies using a priorityQ

Miner (extends Unit)

INSTANCE VARS

Static final int COST = 10; (subject to change as of now)

METHODS/FUNCTIONS

void attack(Unit target) //miner's attack method is just to walk around

Commander (extends Unit)

INSTANCE VARS

METHODS/FUNCTIONS

void attack(Unit target) //this is a special unit, the attack and movement of the Commander is guided by the player's controls. This will all be shown to the player in the gameplay

ΑI

**This is the class that makes the decisions for the computer on what to do to make the game challenging

METHODS/FUNCTIONS

static int choose(ArrayList<Unit> playerTeam, ArrayList<Unit> computerTeam, int currency) //has to determine what is the smartest move: train soldier (non-miner unit) or train miner

static int unitStrength(ArrayList<Unit> team) //calculates overall strength of a team

static boolean saveUp(ArrayList<Unit> playerTeam, ArrayList<Unit> computerTeam)

ArrayPriorityQueue

INSTANCE VARS

int start;

ArrayList<Unit>_priorityQ;

METHODS/FUNCTIONS

void add(Unit x) // _priorityQ.add(x);

int peekMin()//helper method for removeMin

void changeTime()

Unit removeMin() //used by the algo for queuing troops for training

Unit removeMinH(Unit firstTarget) //find the unit w the lowest life and is within strike range: used by wizard for targeting

void setArr(ArrayList<Unit> a) //sets _priorityQ to the parameter: a method of copying lists into the priority queue

Giant (extends Unit)

INSTANCE VARS

Static final int COST = 20; (subject to change as of now)

METHODS/FUNCTIONS

void attack(Unit target) //as stated in superclass Unit

Nexus (extends Unit)

- -represents the "castle" in the game
- -set as a Unit to aid in targeting process

Methods:

Void updateHealth() //updates a life bar that represents remaining life of the castle