AP Computer Science Final Project - README Template

--------------------When README is finalized, remove everything above this line--------------------

Eclipse Warriors

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Introduction:

[In a few paragraphs totaling about ½ page, introduce the high-level concept of your program. What this looks like depends a lot on what type of thing you are making. An introduction for an *application* will look different than one for a *game*. In general, your introduction should address questions like these:
What does your program do?
What problem does it solve? Why did you write it?
What is the story?
What are the rules? What is the goal?
Who would want to use your program?
What are the primary features of your program?]

Our program runs a battle game where two players fight to see who the better fighter is. Solve the mystery of the chosen one who is destined to win the battle. See the breathtaking game written by Frank An and Ishaan Musunuri and continue on this adventure to be the greatest fighter among your friends and other players as well. Two characters, Mario and Bob have been placed onto the basketball battlefield after failing to eat 15 cheeseburgers in a minute and now because of their previous failures, the king of the land orders them to fight till the death. The rules of the game are simple, two users are given playable characters that can move up down left right. Use the characters' weapons and special ability to defeat the other character. The special ability includes invisibility where the character turns invisible to the enemy for 5 seconds, meaning the other character can't attack your character for 5 seconds. However, use it wisely, as the special ability only has three uses per game. The other special ability is a laser weapon, which spawns into the middle of the battlefield when one character has less than 500 health. Characters also have the ability to collect health packs to regain health when wounded as health decreases, more health packs are spawned into the game for the underdog, making no health lead safe EVER! This game also has 4 screens, a starting screen, an instructions screen, a battleground screen, where the fun begins, and finally an end screen displaying a winner. The goal is to be the last fighter standing with health left (each character starts off with 1000HP). Experienced Gamers would want to use this program to conquer their friends as a way to settle beef, bets, rivalry, and the greatest question of all: who is the better GAMER? May the best warrior win!

Instructions:

[Explain how to use the program. This needs to be **specific**:

Which keyboard keys will do what?

Where will you need to click?

Will you have menus that need to be navigated? What will they look like?

Do actions need to be taken in a certain order?]

Players will have to choose to play the game.

They will then see the instruction page and will have to click the play button at the bottom of the screen. (Below are the controls of the game)

Players will be transported to a battlefield where they will use their characters to fight each other .

Goal of the game is to defeat your opponent.

Players will be able to punch, and use a special move. The special move will be limited.

Once there is a winner, there will be a pop up stating the winner, and giving the players the opportunity to play another game.

Controls:

- Player 1:
    - W-move up
    - A - move back
    - D - move forward
    - E - special move invisibility (3 uses per game)
    - Q - Attack/Pick up health or weapon
- Player 2:
    - Up - move up
    - Left - move back
    - Right - move forward
    - Shift- Special Move (3 uses per game)
    - CTRL- Attack/Pick up health or weapon
- Both Players:
    - Right Click - Fire Weapon

Features List (THE ONLY SECTION THAT CANNOT CHANGE LATER):

Must-have Features:

[These are features that we agree you will *definitely* have by the project due date. A good final project would have all of these completed. At least 5 are required. Each feature should be fully described (at least a few full sentences for each)]

- Map/Arena - The arena the characters play in and fight in
- 2 Characters - The characters that the two users will control to fight each other's characters that can spawn multiple at a time on screen
- Pop Up Instructions - And instructions screen that the user can use to figure out the instructions for the game

- Special Ability, the players have the ability to have the user-controlled do a special ability which makes the character invisible to the other character for 5 seconds
- Screens - The screens are the screens needed to make the game work, including the start on with instructions button, players get to choose what character they want, and the special ability they want and the winner screen which asks if they want to play again.

Want-to-have Features:

[These are features that you would like to have by the project due date, but you're unsure whether you'll hit all of them. A good final project would have perhaps half of these completed. At least 5 are required. Again, fully describe each.]

- Multiple Characters - We want different characters that move slightly differently, special ability is different, etc, instead of just a different skin for each character. We could also have characters have different attributes, such as different health, different attack power.
- Power-up items - We want to add different pop ups items when the players are playing. These items would appear randomly and would provide certain advantages to the player that picks it up. For example, we can generate a gun item that appears in the center of the map. This gun can be picked up by a player and will be able to shoot once, doing damage to the opponent. Another example could be a medkit where players will receive health after picking up the kit.
- Attack Feature - Ability to attack other characters with a button press besides solely counting on the special ability to deal damage to the other player.
- Different Maps - Besides the main map, users can play on a variety of maps that can do different things with different terrains that make it better suited for different characters. These maps can have different obstacles which the players can't
- Animations change - Complex animations when the character does certain actions like cut, attack, spring, etc. The character could also change when it gets attacked or when the special move is activated.

Stretch Features:

[These are features that we agree a *fully complete version of this program would have, but that you probably will not have time to implement*. A good final project does not necessarily need to have any of these completed at all. At least 3 are required. Again, fully describe each.]

- All characters - Play the Warrior Game against the PC with AI used by the PC to control the various characters, as if the person is playing against another person. Users will be able to choose whether or not they want to play with the computer or with another user.
- Sound effects- When a character takes damage, dies, wins, etc. the character can play a previously recorded sound effect to make the game more funny for everyone playing. Adding sounds to the game helps enhance the playing experience. This could also mean background music and having a specific sound effect for each character that can be played if they win.
- Different special abilities - Different special abilities that can damage the other characters and help your current character in different situations. Besides invisibility we also want to potentially add different abilities such as energy beams.

Class List:

[This section lists the Java classes that make up the program and very briefly describes what each represents. It's totally fine to put this section in list format and not to use full sentences.]

- Main - Runs the whole program by setting up the screen and drawing surface
- DrawingSurface - Window where games pops up and is run from
- Sprite - characters that are used to make the game what it is
  - Bob - character controlled with arrow keys that fights Mario
  - Mario - character controlled with WASD that fights Bob
  - HealthBoost - Sprite that acts as health pack when collected regens 50 health from Sprite
  - Weapon - Laser that shoots others for a one time superpower use dealing 200 damage
- Screen
  - EndScreen - The Screen that displays the winner either the Pig leader or the Warrior leader won
  - Map - Map where the characters fight on by the players
  - Instruction - Page where the instructions are kept to show the characters how to
  - StartingScreen - Screen that asks players if they want to play the game in 2 player mode
- ScreenSwitcher - switches between the different screens
- Shape - Uses PApplet to draw shapes
  - Line - extends Shape and draws lines and figures out if they intersect or not

Credits:

[Gives credit for project components. This includes both internal credit (your group members) and external credit (other people, websites, libraries). To do this:

- Ishaan - UML, README, DrawingSurface, main, StartingScreen, Screen, ScreenSwitcher, Bob, Javadocs, Mario
- Frank - README, EndScreen, Map, Mario, Weapon, Sprite, Instruction, HealthBoost
- Give credit to all outside resources used. This includes downloaded images or sounds, external java libraries, parent/tutor/student coding help, etc.]