

Design Plan:

In this assignment, we will implement the game from Assignment 3 by let 2 players to choose characters and fight against each character and count the winner. At the beginning, the user will input how many fighters in the game (maybe: 1 - 10, cannot be 0 or negative) and then choose the lineup of creatures (batting order). The first character in the team will fight against each other and the winner will back the the team list at the end (Queue).

It will display which team 's character win After each round.(eg: Round 1: Team A Blue man VS. Team B Harry Potter, Harry Potter won!) the Winner team +2, loser team -1, tie +1. And then display and update their points in each round.

On the next round, the winner character will keep into the lineup and join for next battle. It will restore damage depends on the roll (5 for 50% of their damage points) and put that creature at the end of the pile. There should have a function to recover the character strength point and an inherited function for it.

Finally, the program will display each player's total points and rank the top 3 loser. It's should be a for loop ≤ 3 and pop from the <loser> pile.

The program will look like:

...

How many Creature have in this battle?

5

Player 1: Choose your Character lineup:

- a) Barbarian
 - b) BlueMen
 - c) HarryPotter
 - d) Medusa
 - e) Vampires
- > abcde

Player 2: Choose your Character lineup:

- a) Barbarian
 - b) BlueMen
 - c) HarryPotter
 - d) Medusa
 - e) Vampires
- > ecdba

=====Battle!=====

P1: creature_name |VS| P2: creature_name :

Team x (creature_name) win this round(CurrentPoints A | CurrentPoints A).

P1: creature_name Men |VS| P2: creature_name :

Team x (creature_name)win this round(CurrentPoints A | CurrentPoints A).

.....

(Repeat until one team have no creature alive)

Team x WIN!!

Total Points

Player 1: (TotalPointsA)

Player 2: (TotalPointsB)

=====

Top 3 loser:

1) [TEAM_A/B](creature_name)

2) [TEAM_A/B](creature_name)

3) [TEAM_A/B](creature_name)

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Test Plan:

Test object	Input value	Expected result	Actual Results	Meet object
How many creature in the lineup?	abcde	Input error, re-type again.	Input error, ask to re-type again.	YES
Choose the lineup	qwertyu asdfghjkl; zxcvbnm,	Not count the input unless the 'a','b','c','d','e'	When type "qwertyu" and hit enter, the program is still wait for input because not received enough valid value(a-e)	YES
How many creature in the lineup?	1	PASS	Runtime error: Segmentation fault: 11	NO
Choose the lineup	abcde	PASS and ask player to to chose lineup	PASS and ask player to to chose lineup	YES

Change:

When the lineup only have one character, the program will crashed at the end because the loser pile does not have actually 3 creature. So, it have to set a limit, the lineup should no less than 2 character.

Results of unit testing:

P1	P2	P1 Total Points	P2 Total Points	Expected Winner	Actual Winner
aaaaa	aaaaa	8	-1	P1	P1
bbbbb	bbbbb	8	-1	P1	P1
ccccc	ccccc	-1	8	P1	P2
ddddd	ddddd	6	3	P1	P1
eeeee	eeeee	1	7	P1	P2
abcde	ceabd	3	6	P2	P2
abcdeabcde	ceabdceabd	6	12	P2	P2
abcde	ccccc	8	-1	P2	P1
abcde	bbbbb	-3	9	P2	P2
abcde	edcba	8	-1	unsure	P1
cdeabcdacc	bbbbbbbbbb	-10	20	P2	P2
eeeeeeeeeeee eeeeee	eeeeeeeeeeee eeeeee	8	26	unsure	P2

* In general, P1 will win the game because of P1 attract at first but if they both pick Vampires, the P1's winning chance almost is 0. When the P2 choose, always choose b) Blue Men, mostly will be win.