Q1.

Description:

Since Procedure does not work in pgAdmin and other pgsql tool we use Function instead of Procedure which is suggested by the instructor.

In this question we design a function findlineup which takes two parameters (one player and the raid boss challenged by the player) as inputs and it returns the suitable pokemons from the player's collection for this combat with their captured time, move and boosted combat power. The selection procedure is finding the type which supresses boss' type and the pokemons falling into this type whose cps are above 1000 with their relevant information(name, move, combat power, damage per second), this newly generated table falls into a cursor cur. During the loop we fetch the cursor into the record var_r , then calculate the boosted combat power for each selected pokemon based on the original cp and dps of the move. We finally turn all results into a text output. The query code and the results to two calls of the function are as below.

Codes:

CREATE OR REPLACE FUNCTION findlineup (p_player VARCHAR, b_boss VARCHAR)

 RETURNS text

AS $$

DECLARE

tXT TEXT DEFAULT '';

var_r RECORD;

cur CURSOR FOR SELECT capturablepokemons.pokename as cn, capturablepokemons.capturedtime as ct, cp, dps,moves.movename as m FROM

capturablepokemons

INNER JOIN learns ON capturablepokemons.username=learns.username AND

capturablepokemons.capturedtime=learns.capturedtime

INNER JOIN moves ON moves.movename=learns.movename

```sql
INNER JOIN pokemons P ON capturablepokemons.pokename=P.pokename

WHERE  capturablepokemons.username= p_player AND

P.typename IN (SELECT types.typename

FROM pokemons

INNER JOIN types ON pokemons.typename=types.resistantTo

WHERE pokemons.pokename= b_boss);

BEGIN

  OPEN cur;

  loop

 FETCH cur INTO var_r;

EXIT WHEN NOT FOUND;

        IF var_r.cp>=1000 THEN

        txt:=txt || chr(10)||'selected_pokemon:' || var_r.cn || '   '
||'captured_time:' || var_r.ct ||'   '||'move_name:'||var_r.m|| '   ' ||
'adjusted_cp:'|| (var_r.cp*((var_r.dps::decimal)/100+1));

END IF;

END LOOP;

CLOSE cur;

RETURN txt;

END; $$

 LANGUAGE 'plpgsql';


select * FROM findlineup('defarge','Entei');

select * FROM findlineup('Ferris','Kyogre');

drop function findlineup(VARCHAR,VARCHAR);
```

Results:

Call1: select * FROM findlineup('Ferris','Kyogre');

```
35   select * FROM findlineup('Ferris','Kyogre');
```

selected_pokemon:Oddish   captured_time:2019-08-04 15:04:02   move_name:Mega Drain   adjusted_cp:4516.05000000000000000000
selected_pokemon:Gloom   captured_time:2017-02-18 05:17:43   move_name:Leech Seed   adjusted_cp:3645.40000000000000000000
selected_pokemon:Vileplume   captured_time:2018-04-28 11:50:34   move_name:Razor Leaf   adjusted_cp:3516.25000000000000000000
selected_pokemon:Bellsprout   captured_time:2018-06-03 20:52:06   move_name:Solar Beam   adjusted_cp:3463.90000000000000000000

Call2: select * FROM findlineup('defarge','Entei');

```
35   select * FROM findlineup('defarge','Entei');
```

selected_pokemon:Onix   captured_time:2019-03-04 22:23:52   move_name:Iron Head   adjusted_cp:5048.40000000000000000000