Christopher Schretzmann
Pokemon Game Documentation

The Pokemon Game program is an implementation of the Pokemon Trading Card Game(TCG). The game is played between two players and each player is dueling the other.

Each player has a deck of cards. The deck consists of types of pokemon cards, trainer cards, and energy cards. For the sake of this test, the deck allocation consists of 20 of each card. Of those 20 of each, I store the types of each of those 20 cards in an array and call them randomly. So there are 20 pokemon that are randomly chosen for all of the pokemon in the game, 20 trainer cards that are randomly generated, and 20 universal energy cards. It must be noted that the allocation can be changed at any time and the game will function exactly the same. The current allocation is just for testing purposes.

Each player has a hand, bench pile, active pile, prize pile, and discard pile. The hand consists of 7 cards and a new one is drawn every time. When a card is played or faints, the spent card is put in the discard pile. There is a bench pile where the pokemon sit if they are waiting to be placed in the active pile. The active pile is where the pokemon sits and duels. There is only one pokemon allowed to be in the active pile at a time. When one person defeats an opponent pokemon, they can draw one card from the prize pile. The prize pile consists of 6 cards from the deck and when the prize pile is empty, the player wins.

In order to attack, a pokemon must have an energy card attached to them. In the real game, there are different energy cards for each pokemon type. When I implemented that feature, the game took way too long, so I made one type of energy card work for all pokemon. Each pokemon has a set amount of attack and hp.

The Pokemon I have included are Squirtle, Pikachu, Bulbasaur, and Mew. The trainer cards I have included are Professor's Research, Nest Ball, and Green's Exploration. Each trainer has a specific type of effect and is discarded after use. Professor's Research discards the entire hand(no matter the size) and draws a new hand. Nest Ball searches the deck for all of the pokemon in it, stores it in an array, and randomly chooses one from that list to add to the bench. Green's Exploration searches the deck for all trainer cards and randomly chooses two from the list and adds them to hand.

To start the game, the first player is prompted to add their name and the second person inputs their name.

```
Player One,  enter your name:
Chris
Player Two,  enter your name:
Byron
```

After setting up the game, the game asks for the first player to input heads or tails. This coin flip is to determine who goes first. If player one is correct, they go first. If wrong, they go second. If there is any other input other than heads or tails, the game makes player input a valid choice.

```
Player One, pick heads or tails:
Conditional probability
Invalid input, try again
Player One, pick heads or tails:
heads
The coin landed on tails
Player Two goes first
```

In this case, player one chose the wrong side so player two goes first.

In every turn, the field is shown. The field consists of players field/active pile and players bench. Depending who is going first determines which order it is shown. After showing the field of both players, there is an output of the size of the prize pile for each player. After that, the current player's hand is shown.

Byron's Field
Byron's Bench

Chris's Field
Chris's Bench

Byron's Prize Pile Size: 6
Chris's Prize Pile Size: 6

1: Nest Ball
2: Nest Ball
3: Mewtwo
4: Green's Exploration
5: Nest Ball
6: Squirtle
7: Pikachu

For each player's turn, the player has the option to play cards, move pokemon from bench to active, attack, or end turn. If there is no pokemon on the bench and the player tries to input that, there is an error case that handles that. Alternatively, If the player does not have a pokemon to attack with, there is an error case and the turn ends there.

```
Choose an action:
1: Play a card
2: Move a Pokemon from bench to active
3: Attack
4: End turn

2
No Pokemon in bench to move to active.

Choose an action:
1: Play a card
2: Move a Pokemon from bench to active
3: Attack
4: End turn
```

In this case we are going to have Byron place Mewtwo from hand to the bench pile.

```
1
Pick a card to play:
3
Added to bench

1: Nest Ball
2: Nest Ball
3: Green's Exploration
4: Nest Ball
5: Squirtle
6: Pikachu
7: Energy
```

As you can see Mewtwo was added to the bench and removed from hand. From here we are going to have Byron add an energy to the active pokemon.

```
1
Pick a card to play:
7
No active Pokemon to attach energy to.
Added to active
Byron
```

OH NO!!! Why can't we add the energy???

So the Mew is on Byron's bench and not active. I made the rule to only add energy to active pokemon. So we are going to add the pokemon to active then add the energy after that.

```
Choose an action:
1: Play a card
2: Move a Pokemon from bench to active
3: Attack
4: End turn

2
Choose a Pokemon to move from bench to active:
1: Mewtwo
1
```

```
1
Pick a card to play:
7
Energy added to active Pokemon
Added to active
Byron
1: Nest Ball
2: Nest Ball
3: Green's Exploration
4: Nest Ball
5: Squirtle
6: Pikachu
```

The energy was added and removed from hand.

We are now going to have the pokemon attack the other person. There should be an error stating there is no pokemon in the opponent's active pile.

```
3
Pick an attack:
1: Attack One
2: Attack Two
2
Opponent has no active Pokemon!
Turn ended.

Player One's Turn
```

Byron's turn ended as a result of that and now its Player one's Turn

As you can see, there is a different order of field and deck for the other player.

```
Player One's Turn
Chris's Field
Chris's Bench

Byron's Field
1: Mewtwo
Byron's Bench

Chris's Prize Pile Size: 6
Byron's Prize Pile Size: 6

1: Nest Ball
2: Energy
3: Professor's Research
4: Nest Ball
5: Energy
6: Energy
7: Squirtle
```

We are going to have Byron win this game, since he has the strongest pokemon Mewtwo.

```
1
Pick a card to play:
7
Added to bench
```

```
2
Choose a Pokemon to move from bench to active:
1: Squirtle
1
```

Same thing for Chris adding pokemon to the active. We are going to end up there.

```
4
Turn ended.


Player Two's Turn
```

We are going to have Byron's Mewtwo attack Chris' Squirtle and kill it

```
3
Pick an attack:
1: Attack One
2: Attack Two
2
Mewtwo used Transfer Break on Squirtle dealing 160 damage!
opponent hp: -90 current hp: 120
Opponent's Pokemon fainted!
Energy added to hand
Turn ended.
```

As we can see, Mewtew's attack two is named Transfer Break and one shot Squirtle's hp. After that, the energy was in Byron's prize pile since he killed a pokemon and his turn ended.

```
Chris's Field
Chris's Bench

Byron's Field
1: Mewtwo
Byron's Bench

Chris's Prize Pile Size: 6
Byron's Prize Pile Size: 5
```

As you can see, Chris' field is empty now and Mewtwo is still on Byron's field. Also, Byron's prize pile is down one.

We are going to have Chris use a trainer card to test the effect. Chris is going to play professor's research and it will discard his hand and show his newly drawn hand.

```
1: Nest Ball
2: Energy
3: Professor's Research
4: Nest Ball
5: Energy
6: Energy
7: Energy

Choose an action:
1: Play a card
2: Move a Pokemon from bench to active
3: Attack
4: End turn

1
Pick a card to play:
3
Professor's Research has been played
Chris has discarded their hand and drawn 7 cards from their deck.

1: Bulbasaur
2: Energy
3: Energy
4: Professor's Research
5: Pikachu
6: Energy
```

As you can see, Chris has a completely new deck not including the one drawn from the start of a turn.

We are going to have Chris put both pokemon in his hand on the bench. We are going to add one of them to the field and have an end turn to show his field.

```
2
Choose a Pokemon to move from bench to active:
1: Bulbasaur
2: Pikachu
▊
```

```
Player Two's Turn
Byron's Field
1: Mewtwo
Byron's Bench

Chris's Field
1: Pikachu
Chris's Bench
1: Bulbasaur
```

As you can see, Chris' bench and field is showing that he has pokemon in both. We are going to have byron play a NestBall and this will put a random pokemon from deck to bench.

```
1
Pick a card to play:
1
Nest Ball has been played
Byron has searched their deck for a pokemon
Byron has added a random pokemon to their bench.
```

Chris is going to play greens exploration and we will gain two random trainer cards

```
1
Pick a card to play:
3
Greens Exploration has been played
Chris has searched their deck for 2 trainer cards
Chris has added 2 trainer cards to their hand.

1: Professor's Research
2: Professor's Research
3: Energy
4: Pikachu
5: Pikachu
6: Professor's Research
7: Nest Ball
```

After playing the game for a while, Byron is in the lead. If he kills one more of Chris' pokemon, his prize pile will be empty resulting in a win and the game ending...

```
Byron's Field
1: Mewtwo
Byron's Bench
1: Pikachu
2: Pikachu

Chris's Prize Pile Size: 6
Byron's Prize Pile Size: 1
```

```
Mewtwo used Transfer Break on Pikachu dealing 160 damage!
opponent hp: -90 current hp: 120
Opponent's Pokemon fainted!
Energy added to hand
Turn ended.
```

On Byron's last turn he defeated an enemy and his last prize card was added to his hand.

This resulted in the game ending and Byron Winning.

```
Byron has won the game!!!
```