Object Oriented Programming

Group Project(The github link to the project)

Build-UNO
Helper Document

Group 8:

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1. The file "UNO.jar" contains all the necessary files to run. After extraction of the jar file, we get 2 folders and one file("UNO.java"). If we compile the UNO.java file into bytecode using javac, we get multiple class files.

2. The user should run the UNO.class file to play the game. The UNO class creates a new Game object called game and calls the startGame method of the new game object.

3. ```
td0013@ubuntu:~/UNO$ java UNO
Enter Number of players (between 2-5):
```

4. First the startGame method asks us to add the number of players in the game.
   The first prompt that we get is "Enter Number of players (between 2-5):", in which the user can enter the number of players.
   For the following example, we choose the number 2.

5. Next, we take the names of all players to create and assign to the new Player Objects.
   Eg:
```
Enter Number of players (between 2-5):
2
Enter name for Player 1 :
Player1
Enter name for Player 2 :
Player2
```

6. As soon as we enter the player details, the startGame method initializes and shuffles the deck of all cards. It then distributes 7 cards to players and fetches the top card for the play to begin. In case the top card is a special card, the deck is shuffled again and the top card is fetched again. This goes on until the top card is a normal card.
```
Shuffling Deck..
Distributing Cards.
Top Card: R_1
```

   Or in case of a special card:
```
Got Special card !
Shuffling Deck..
Top Card: G_3
```

7. At all times and for all turns, the top card is displayed. The cards of the current player are also displayed.
```
Top Card: R_1
Player 1 (Player1) : R_8 Y_9 B_7 G_9 B_5 G_3 B_8
```

8. According to the rules of UNO, if the player has a card that has the same number or colour as the top card, he may play such a card, else he can draw a card. If the player draws a card and gets a valid playable card, he can play this card else he can pass his turn.
   There can be 2 scenarios for the player:

a. The Player has a playable card: The player is asked to play a card.

```
Top Card: R_1
Player 1 (Player1) : R_8 Y_9 B_7 G_9 B_5 G_3 B_8
What do you want to play?
```

b. The player does not have a card he can play: One card is automatically drawn from the deck for the player.

```
Player 1 (P1) : B_4 B_9 B_1 Y_2
No possible chance drawing card from stack.
B_4 B_9 B_1 Y_2 Y_3
```

There can be 2 further scenarios:

i. The player now has a playable card: The player is asked to play a card.

```
Top Card: Y_3
Player 2 (P2) : R_5
No possible chance drawing card from stack.
R_5 B_3
What do you want to play?
```

ii. The player still does not have a playable card: The player's current turn is skipped automatically.

```
Top Card: R_3
Player 1 (P1) : B_4 B_9 G_2 B_1
No possible chance drawing card from stack.
B_4 B_9 G_2 B_1 Y_2
No possible plays. Passing chance to next player.
```

9. If the player enters the card in a different format, he is asked to correctly enter the format of a card.

```
Player 1 (P1) : B_4 R_8 B_9 Y_Rev G_2 B_1 Y_1
What do you want to play?
Y1
Please enter just like the card as printed.
B_4 R_8 B_9 Y_Rev G_2 B_1 Y_1
What do you want to play?
```

10. If a player enters a card he does not have or a card that cannot be played on the top card, he is asked to enter a valid card.

```
Top Card: R_1
Player 1 (Player1) : R_8 Y_9 B_7 G_9 B_5 G_3 B_8
What do you want to play?
Y_6
Please play valid chance.
R_8 Y_9 B_7 G_9 B_5 G_3 B_8
What do you want to play?
```

11. Special cards are dealt in a specific manner:

a. Skip. This card has the power to skip the turn of the next player.

```
Top Card: R_9
Player 2 (P2) : R_5 R_Skip Y_8
What do you want to play?
R_Skip
Skipping next player
Top Card: R_Skip
Player 2 (P2) : R_5 Y_8
What do you want to play?
```

b. Reverse. This card can reverse the playing order of the game.

```
Top Card: Y_7
Player 1 (P1) : B_4 R_8 B_9 Y_Rev G_2 B_1
What do you want to play?
Y_rev
Reverse Order
```

c. Draw2. This card adds 2 cards in the hands of the next player.

```
Top Card: G_7
Player 1 (P1) : G_Draw2 Y_4 Y_1 G_3 B_6 R_6 B_1
What do you want to play?
G_Draw2
Next Player Draws 2
Top Card: G_Draw2
Player 2 (P2) : B_Draw2 Y_8 Y_6 B_Skip R_7 B_Rev G_8 G_9 Y_Draw2
```

12. End of game. The game ends if one player finishes all his cards.

```
Top Card: Y_5
Player 1 (P1) : Y_2
What do you want to play?
Y_2
End Of Game
Player 1 ( P1 ) wins !!!
```