

Refactoring Targets:

- **Renaming of necessary variables.**
 - There were some ambiguous variable names in some files which have been renamed now.
- **Remove unnecessary comments if any.**
- **If there are multiple if else used restructure it to Switch Case.**
 - In few files else if chain were used which is now replaced by switch case.

Before:

```
players = new JComboBox<Integer>();
int no_countries = map_elements.getCountries().size();
if(no_countries==2){
    players.addItem("2");
}
else if(no_countries==3){
    players.addItem("2");
    players.addItem("3");
}
else if(no_countries==4){
    players.addItem("2");
    players.addItem("3");
    players.addItem("4");
}
else {
    players.addItem("2");
    players.addItem("3");
    players.addItem("4");
    players.addItem("5");
}
```

After:

```
players = new JComboBox<Integer>();
int no_countries = map_elements.getCountries().size();
switch (no_countries) {
case 2:
    players.addItem("2");
    break;
case 3:
    players.addItem("2");
    players.addItem("3");
    break;
case 4:
    players.addItem("2");
    players.addItem("3");
    players.addItem("4");
    break;
default:
    players.addItem("2");
    players.addItem("3");
    players.addItem("4");
    players.addItem("5");
    break;
}
```

- **Remove unnecessary “this” keyword.**

- There were multiple methods which were called using unnecessary “this” keyword in Player.java, Continent.java, etc which has now been removed.

Before:

```
/**
 * Over ride equals method in order to compare compare objects based on continent name not continent objects.
 */
@Override
public boolean equals(Object continent_object) {
    String continent_name = ((Continent) continent_object).getContinentName();
    return continent_name.equals(this.getContinentName());
}
```

After:

```
/**
 * Over ride equals method in order to compare compare objects based on continent name not continent objects.
 */
@Override
public boolean equals(Object continent_object) {
    String continent_name = ((Continent) continent_object).getContinentName();
    return continent_name.equals(getContinentName());
}
```

- **Add brackets to single line loops.**
- **Add brackets to single line “if else” conditions.**
 - In many files the control statements with only one line of code in it were written without brackets which has now been changed to with brackets to reduce confusion.
- **Extract Methods wherever necessary**
 - In some files certain method contained too much of code so a bunch of code was extracted from them to create a new method for better understandability.

Before:

```
public void startTurn(Player current_player, List<Player> player_list, MapElements map_elements,
    GameScreen game_view) {
    game_view.updateView("It is " + name + "'s turn.\n*****");
    if (!is_bot&&!load_game) {
        setCanReinforce(true);
        setCanAttack(false);
        setCanFortify(false);
        setCanEndTurn(false);
        setCanGetCard(false);
        setCanShowCard(true);
        int armies = Gameplay.getReinforcementArmies(this, map_elements);
        setReinforceArmies(armies);
        this.setPhaseDetails("Its " + name + "'s turn and Reinforcementphase.");
        this.setUpdateMessage("phase");
        setChanged();
        notifyObservers();
    }
```

After:

```

public void startTurn(Player current_player, List<Player> player_list, MapElements map_elements,
    GameScreen game_view) {
    game_view.updateView("It is " + name + "'s turn.\n*****");
    if (!is_bot && !load_game) {
        setCanReinforce(true);
        setCanAttack(false);
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        setCanEndTurn(false);
        setCanGetCard(false);
        setCanShowCard(true);
        int armies = Gameplay.getReinforcementArmies(this, map_elements);
        setReinforceArmies(armies);
        updatePhaseDetails("Its " + name + "'s turn and Reinforcement phase.");
    }
}

```