

# Template Pattern

A Template Pattern says that "just define the skeleton of a function in an operation, deferring some steps to its subclasses".

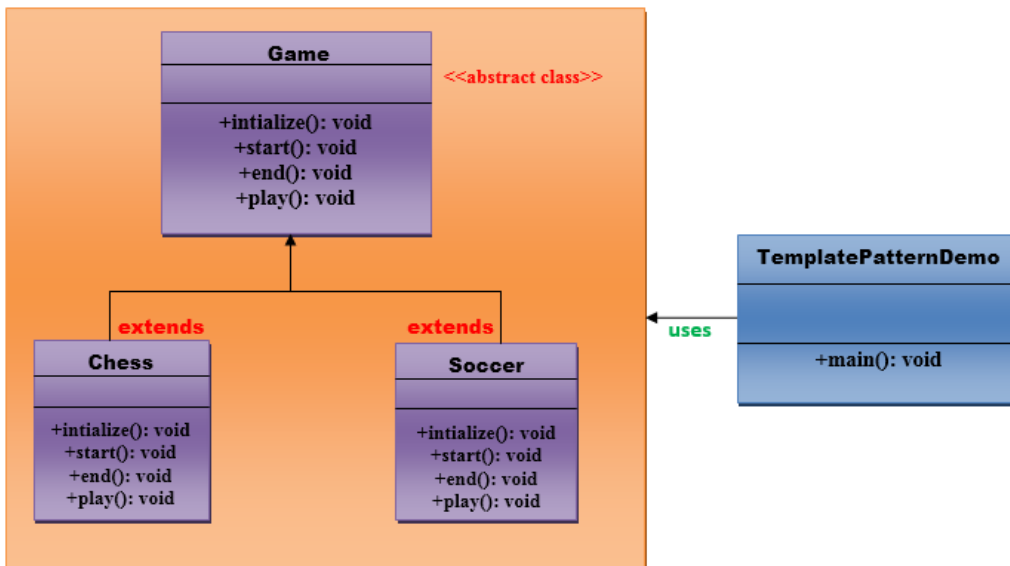
## Benefits:

- It is very common technique for reusing the code. This is only the main benefit of it.

## Usage:

- It is used when the common behavior among sub-classes should be moved to a single common class by avoiding the duplication.

## UML for Template Pattern:



## Implementation of Template Pattern:

### Step 1:

Create a Game *abstract* class.

```
//This is an abstract class.
public abstract class Game {

    abstract void initialize();
    abstract void start();
    abstract void end();

    public final void play(){

        //initialize the game
        initialize();

        //start game
        start();

        //end game
        end();
    }
} // End of the Game abstract class.
```

### Step 2:

Create a *Chess* class that will extend Game abstract class for giving the definition to its method.

```
//This is a class.

public class Chess extends Game {

    @Override
    void initialize() {
        System.out.println("Chess Game Initialized! Start playing.");
    }

    @Override
    void start() {
        System.out.println("Game Started. Welcome to in the chess game!");
    }

    @Override
    void end() {
        System.out.println("Game Finished!");
    }
} // End of the Chess class.
```

### Step 3:

Create a *Soccer* class that will extend Game abstract class for giving the definition to its method.

```
//This is a class.

public class Soccer extends Game {

    @Override
    void initialize() {
        System.out.println("Soccer Game Initialized! Start playing.");
    }

    @Override
    void start() {
        System.out.println("Game Started. Welcome to in the Soccer game!");
    }
}
```



```

    }

    @Override
    void end() {
        System.out.println("Game Finished!");
    }
} // End of the Soccer class.

```

#### Step 4:

Create a *TemplatePatternDemo* class.

```

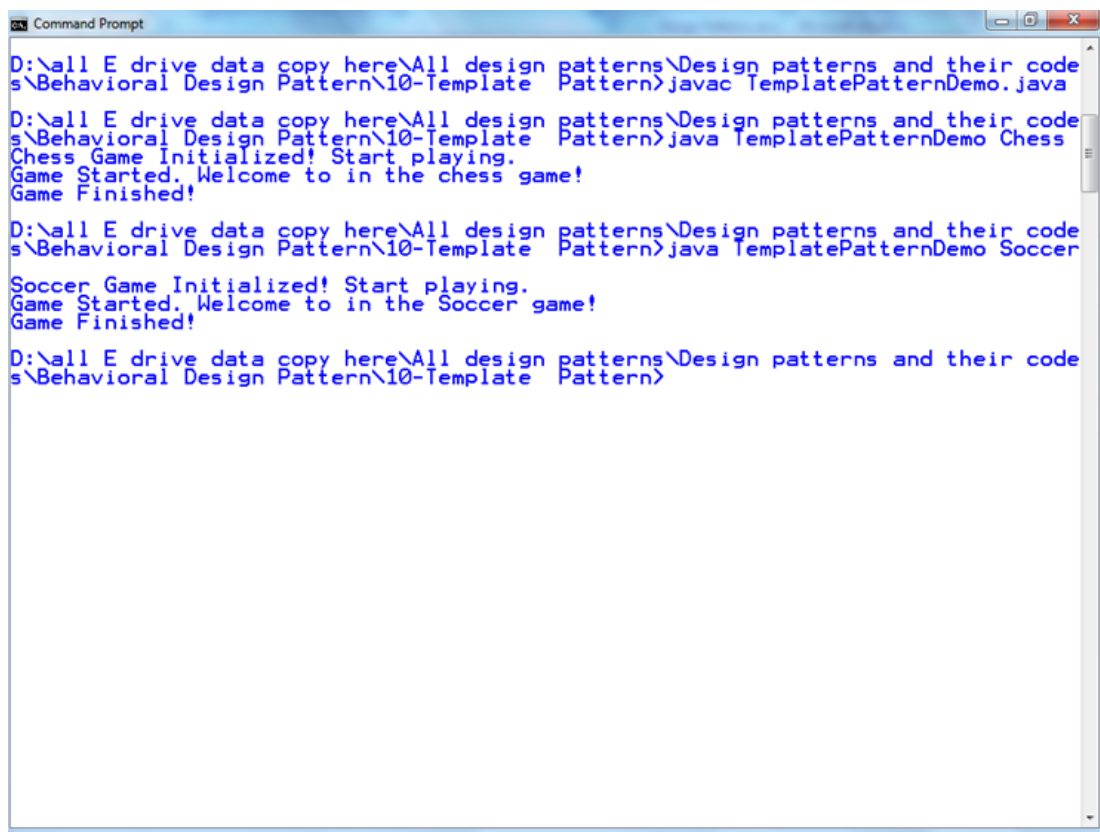
//This is a class.
public class TemplatePatternDemo {

    public static void main(String[] args) throws InstantiationException, IllegalAccessException, ClassNotFoundException {

        Class c=Class.forName(args[0]);
        Game game=(Game) c.newInstance();
        game.play();
    }
} // End of the Soccer class.

```

#### Output:



```

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s\Behavioral Design Pattern\10-Template Pattern>java TemplatePatternDemo Chess
Chess Game Initialized! Start playing.
Game Started. Welcome to in the chess game!
Game Finished!
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s\Behavioral Design Pattern\10-Template Pattern>java TemplatePatternDemo Soccer
Soccer Game Initialized! Start playing.
Game Started. Welcome to in the Soccer game!
Game Finished!
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```

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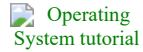
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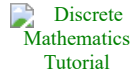
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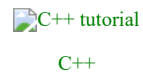
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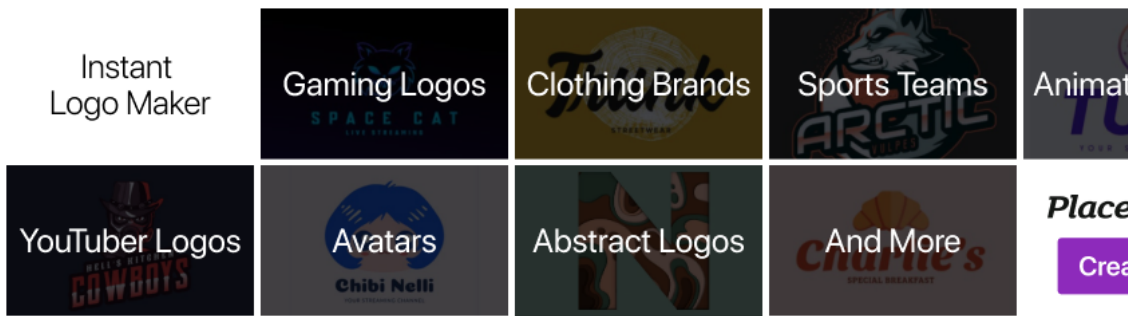
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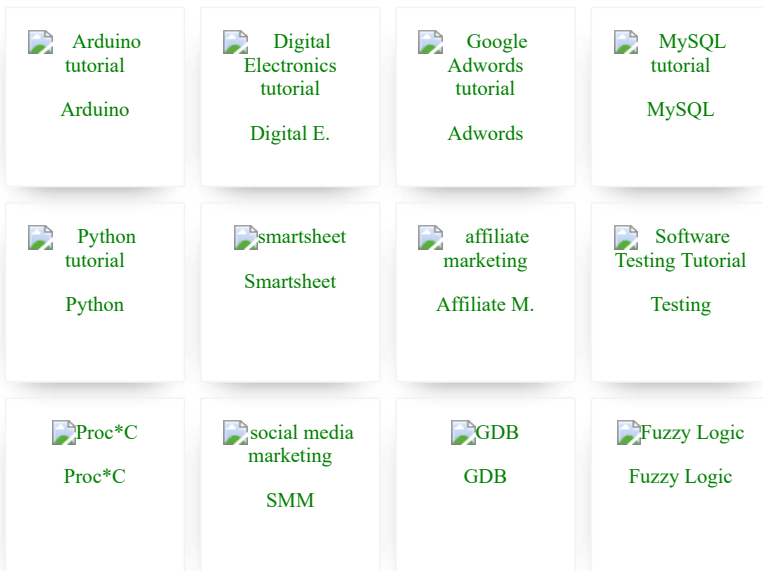


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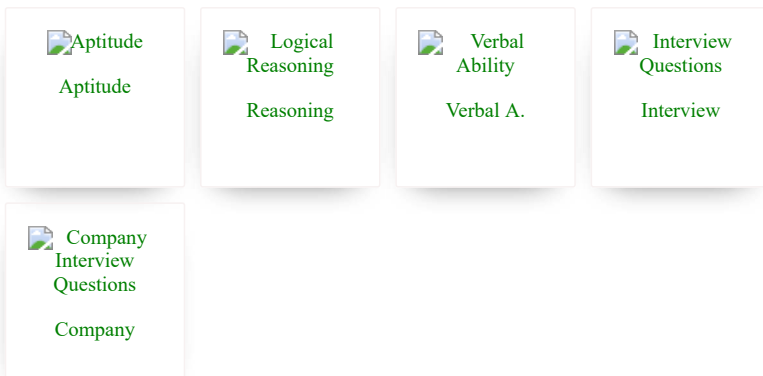
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