

Exercise

- 1) Implement Singleton Design Pattern on a dummy class.

```
SingletonClass instance Created.Having value of variable : 10
SingletonClass instance used Having value of variable : 11
```

- 2) Implement Factory Pattern to get the Polygon of different type.

```
Polygon Types :
4. Quadrilateral
5. Pentagon
6. Hexagon
8. Octagon
Choose sides :
8
Octagon created.
```

- 3) Implement Abstract Factory Pattern to create cars of different categories from different countries.

```
Build Car
1. India
2. USA
Choose Location :
1
1. Sedan
2. Hatchback
3. Luxury
Choose Car type:
3
Car Build of Type : luxury and location : india
```

- 4) Implement Builder pattern to create a student object with more than 6 fields.

```
/home/ctn/.Sukman/Candidates/java/8.0.202-amzn/bin/java ...
Student Created using Student Builder
Student{name='Yatin', rollNo=50, age=24, gender=M, percentage=98, isUsingSchoolTransport=true}
```

- 5) Implement Bridge Design Pattern for Color and Shape such that Shape and Color can be combined together e.g BlueSquare, RedSquare, PinkTriangle etc.

```
Build Shape
1. Red
2. Pink
3. Blue
Choose Color :
2
1. Rectangle
2. Square
3. Triangle
Choose Shape :
3
Triangle{type='Equilateral', sides='3', color='Pink'}
```

- 6) Implement Decorator pattern to decorate the Pizza with toppings.

```
/home/ttn/.sdkman/candidates/java/8.0.202-arm64/bin/
PeppyPaneerPizza with Veggies Costs :240
MargheritaPizza with Veggies Costs :230
FarmHousePizza with Paneer Costs :340
BasicPizza with Olives Costs :120
```

- 7) Implement Composite Design Pattern to maintain the directories of employees on the basis of departments.

```
/home/ttn/.sdkman/candidates/java/8.0.202-arm64/bin/
Developer's Directories
Developer{name='Yatin Ajmani', language='Java'}
Developer{name='Gaurav Sharma', language='Java'}
Developer{name='Vishakha Gandhi', language='PHP'}
Admin's Directories
Admin{name='Varun', post='Senior Executive'}
Admin{name='Prateek', post='Assistance Executive'}
Admin{name='Satya', post='Trainee'}
```

- 8) Implement proxy design for accessing Record of a student and allow the access only to Admin.

```
Yatin : You Don't have rights to view the User Details.Access Denied.
Vishakha : You Don't have rights to view the User Details.Access Denied.
Hello Arshad user details are :
User{name='Yatin', role=STUDENT}
User{name='Vishakha', role=STUDENT}
User{name='Nikhil', role=ADMIN}
Hello Nikhil user details are :
User{name='Yatin', role=STUDENT}
User{name='Vishakha', role=STUDENT}
User{name='Arshad', role=ADMIN}
```