

BEHAVIOURAL PATTERNS

Home Automation Light Use Case

```
Welcome to the Home Automation Light Control System.  
Enter command: add_light Living_Room  
Light in Living_Room added.  
  
Enter command: add_light Kitchen  
Light in Kitchen added.  
  
Enter command: turn_on Living_Room  
Light in Living_Room turned on.  
  
Enter command: set_timer Living_Room 30  
Timer set for Living_Room light to turn off in 30 minutes.  
  
Enter command: schedule_light Kitchen 18:00 23:00  
Light in Kitchen scheduled from 18:00 to 23:00.  
  
Enter command: view_status  
Living_Room: On, Timer: 30 minutes, Schedule:  
Kitchen: Off, Timer: 0 minutes, Schedule: 18:00 to 23:00  
  
Enter command: turn_off Living_Room  
Light in Living_Room turned off.
```

Customer Ticket Management System

```
Enter command (book, cancel, check, exit):
book
Enter ticket ID:
1
Enter number of tickets:
10
Booking successful: Ticket ID: 1, Name: Concert, Available Tickets: 90

Enter command (book, cancel, check, exit):
check
Enter ticket ID:
1
Enter number of tickets:
0
Ticket availability: Ticket ID: 1, Name: Concert, Available Tickets: 90

Enter command (book, cancel, check, exit):
cancel
Enter ticket ID:
1
Enter number of tickets:
5
Cancellation successful: Ticket ID: 1, Name: Concert, Available Tickets: 95
```

```
Enter command (book, cancel, check, exit):
check
Enter ticket ID:
2
Enter number of tickets:
0
Ticket availability: Ticket ID: 2, Name: Movie, Available Tickets: 80

Enter command (book, cancel, check, exit):
exit
```

CREATIONAL PATTERNS

CloningUserProfile Use Case - Prototype Pattern

```
Cloned Basic Profile: Basic Username: basicUser, Email: basic@example.com  
Modified Cloned Premium Profile: Premium Username: newPremiumUser, Email: premium@example.com
```

Question Management - Factory Pattern

```
MCQ Question  
Question: MCQ question  
Answer: MCQ answer  
Marks: 1  
Blank Question  
Question: Blank question  
Answer: Blank answer  
Marks: 2  
Dropdown Question  
Question: Dropdown question  
Answer: Dropdown answer  
Marks: 2
```

STRUCTURAL PATTERNS

Coffee Making Decarator Pattern:

```
PS C:\Users\dell\Downloads\EI> c:: cd 'c:\Users\dell\Downloads\EI'; & 'C:\Program Files\Java\jdk-19\bin\
java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\dell\AppData\Roaming\Code\User\worksp
aceStorage\b67295be375a8b94700a4d8db26f4c51\redhat.java\jdt_ws\EI_256dd3d7\bin' 'Educational_Initiativ
es_Coding.EX1.Structural_Patterns.CoffeeShop_DecaratorPattern.App'
Cost: $5.0
Add a feature: (1) Milk (2) Sugar (3) Whipped Cream (4) Chocolate (5) Vanilla (6) Finish
1
Enter amount of milk (ml): 12

Current coffee: Basic Coffee, Milk (12 ml)
Cost: $5.0 + $6.0 = $11.0
Add a feature: (1) Milk (2) Sugar (3) Whipped Cream (4) Chocolate (5) Vanilla (6) Finish
2
Enter amount of sugar (tsp): 2

Current coffee: Basic Coffee, Milk (12 ml), Sugar (2 tsp)
Cost: $11.0 + $0.20 = $11.20
Add a feature: (1) Milk (2) Sugar (3) Whipped Cream (4) Chocolate (5) Vanilla (6) Finish
3

Current coffee: Basic Coffee, Milk (12 ml), Sugar (2 tsp), Whipped Cream
Cost: $11.20 + $0.75 = $11.95
Add a feature: (1) Milk (2) Sugar (3) Whipped Cream (4) Chocolate (5) Vanilla (6) Finish
4

Current coffee: Basic Coffee, Milk (12 ml), Sugar (2 tsp), Whipped Cream, Chocolate
Cost: $11.95 + $1.00 = $12.95
Add a feature: (1) Milk (2) Sugar (3) Whipped Cream (4) Chocolate (5) Vanilla (6) Finish
5

Current coffee: Basic Coffee, Milk (12 ml), Sugar (2 tsp), Whipped Cream, Chocolate, Vanilla
Cost: $12.95 + $0.60 = $13.55
Add a feature: (1) Milk (2) Sugar (3) Whipped Cream (4) Chocolate (5) Vanilla (6) Finish
6

Final coffee: Basic Coffee, Milk (12 ml), Sugar (2 tsp), Whipped Cream, Chocolate, Vanilla
Final cost: $13.55
```

Messaging Builder Pattern:

```
Sending SMS to +919023567898: Hello there!
Sending Email to dp@gmail.com: Check this photo
Sending WhatsApp message to Shailesh Kumar: New msg
```