Assignment 5

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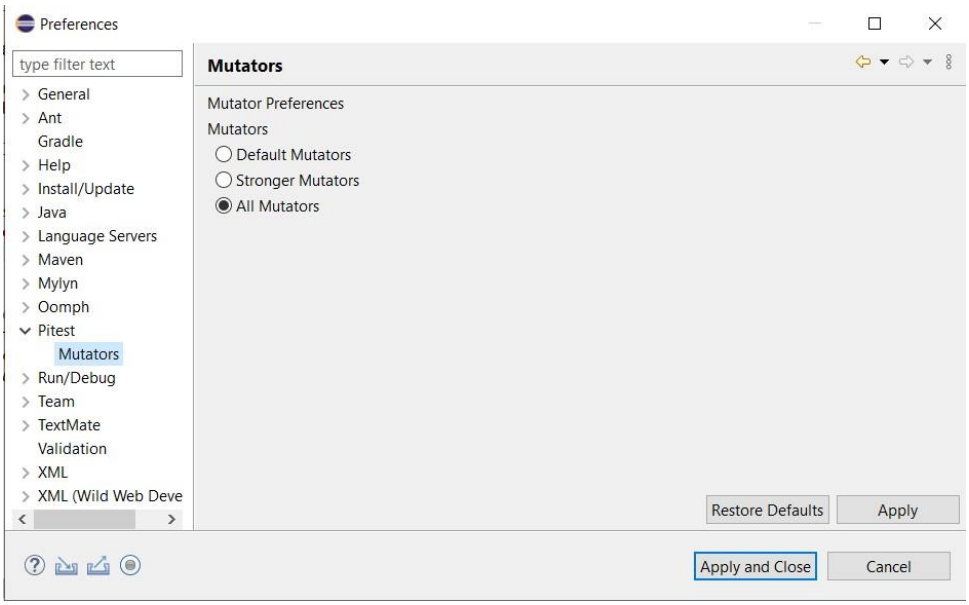
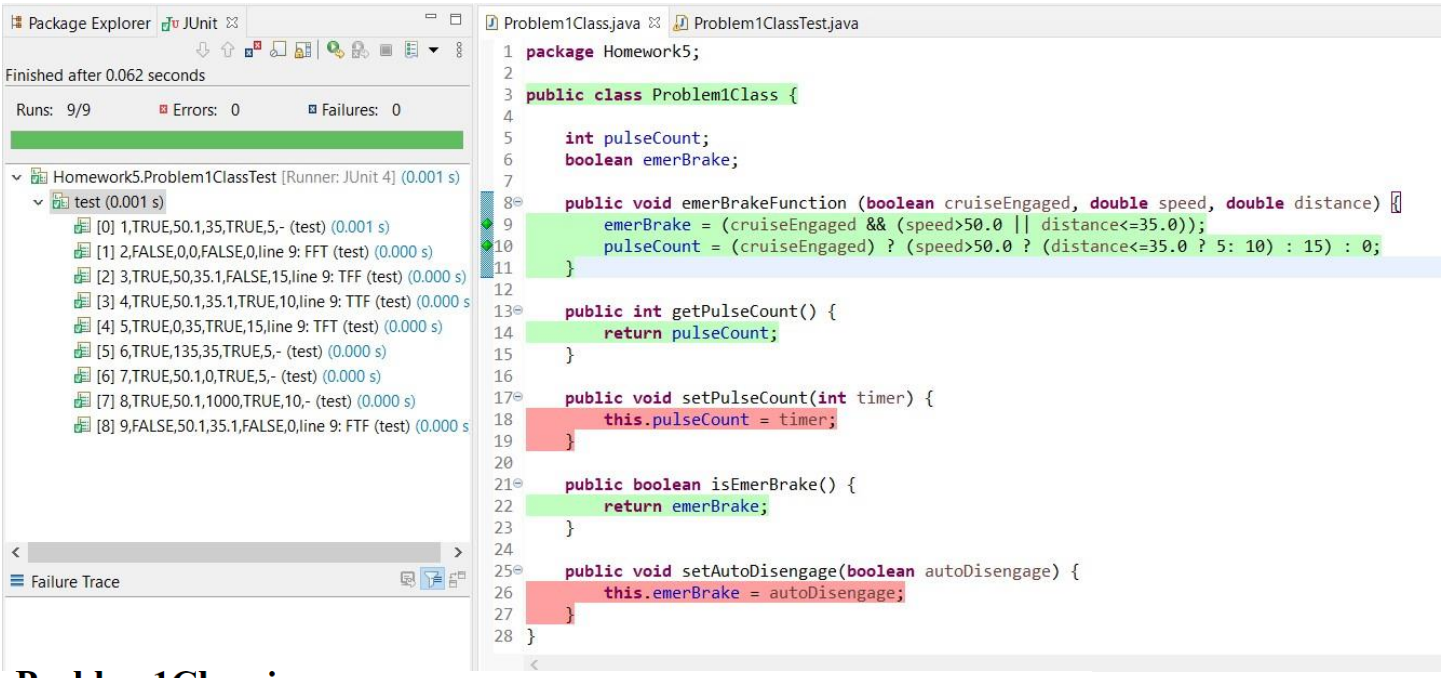
CSE 5321-001

Selected All Mutators:



Task 1:

1	TRUE	50.1	35	TRUE	5	-
2	FALSE	0	0	FALSE	0	line 9: FFT
3	TRUE	50	35.1	FALSE	15	line 9: TFF
4	TRUE	50.1	35.1	TRUE	10	line 9: TTF
5	TRUE	0	35	TRUE	15	line 9: TFT
6	TRUE	135	35	TRUE	5	-
7	TRUE	50.1	0	TRUE	5	-
8	TRUE	50.1	1000	TRUE	10	-
9	FALSE	50.1	35.1	FALSE	0	line 9: FTF

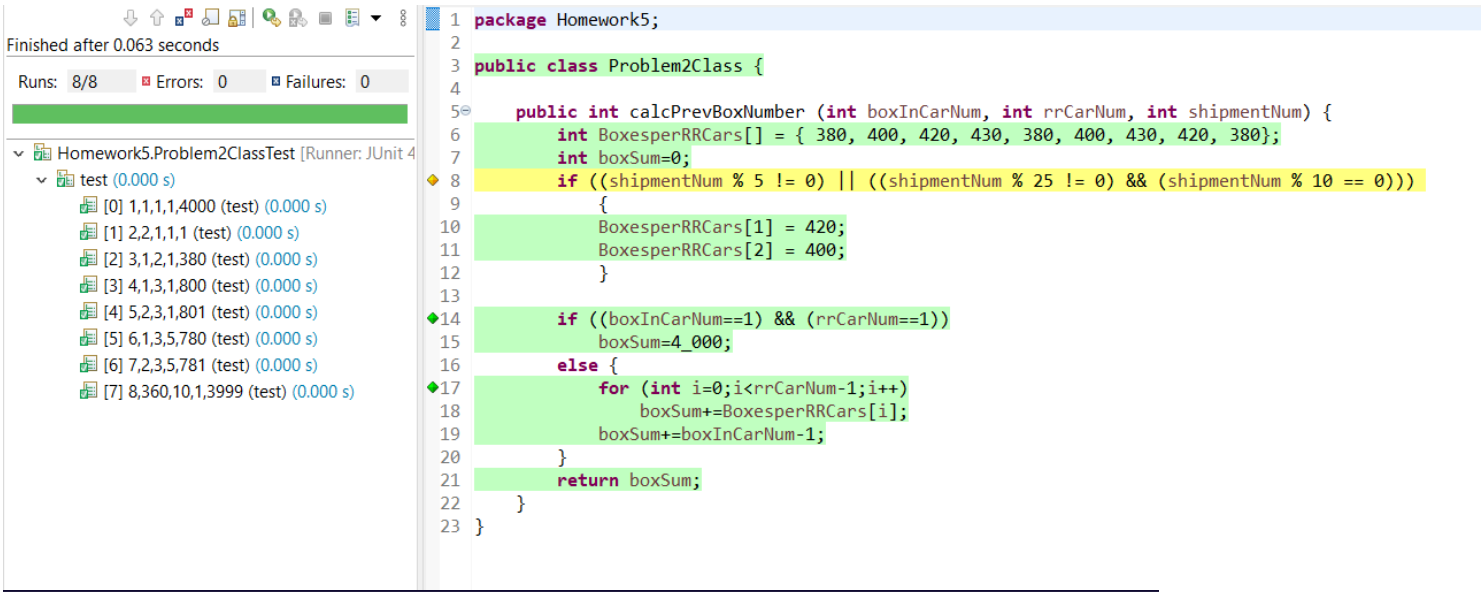


Problem1Class.java

```
1   package Homework5;
2
3   public class Problem1Class {
4
5           int pulseCount;
6           boolean emerBrake;
7
8           public void emerBrakeFunction (boolean cruiseEngaged, double speed, double distance) {
9  16               emerBrake = (cruiseEngaged && (speed>50.0 || distance<=35.0));
10 18               pulseCount = (cruiseEngaged) ? (speed>50.0 ? (distance<=35.0 ? 5: 10) : 15) : 0;
11          }
12
13          public int getPulseCount() {
14 1               return pulseCount;
15          }
16
17          public void setPulseCount(int timer) {
18 1               this.pulseCount = timer;
19          }
20
21          public boolean isEmerBrake() {
22 1               return emerBrake;
23          }
24
25          public void setAutoDisengage(boolean autoDisengage) {
26 1               this.emerBrake = autoDisengage;
27          }
28  }
```

Task 2:

```
1,1,1,1,4000
2,2,1,1,1
3,1,2,1,380
4,1,3,1,800
5,2,3,1,801
6,1,3,5,780
7,2,3,5,781
8,360,10,1,3999
```



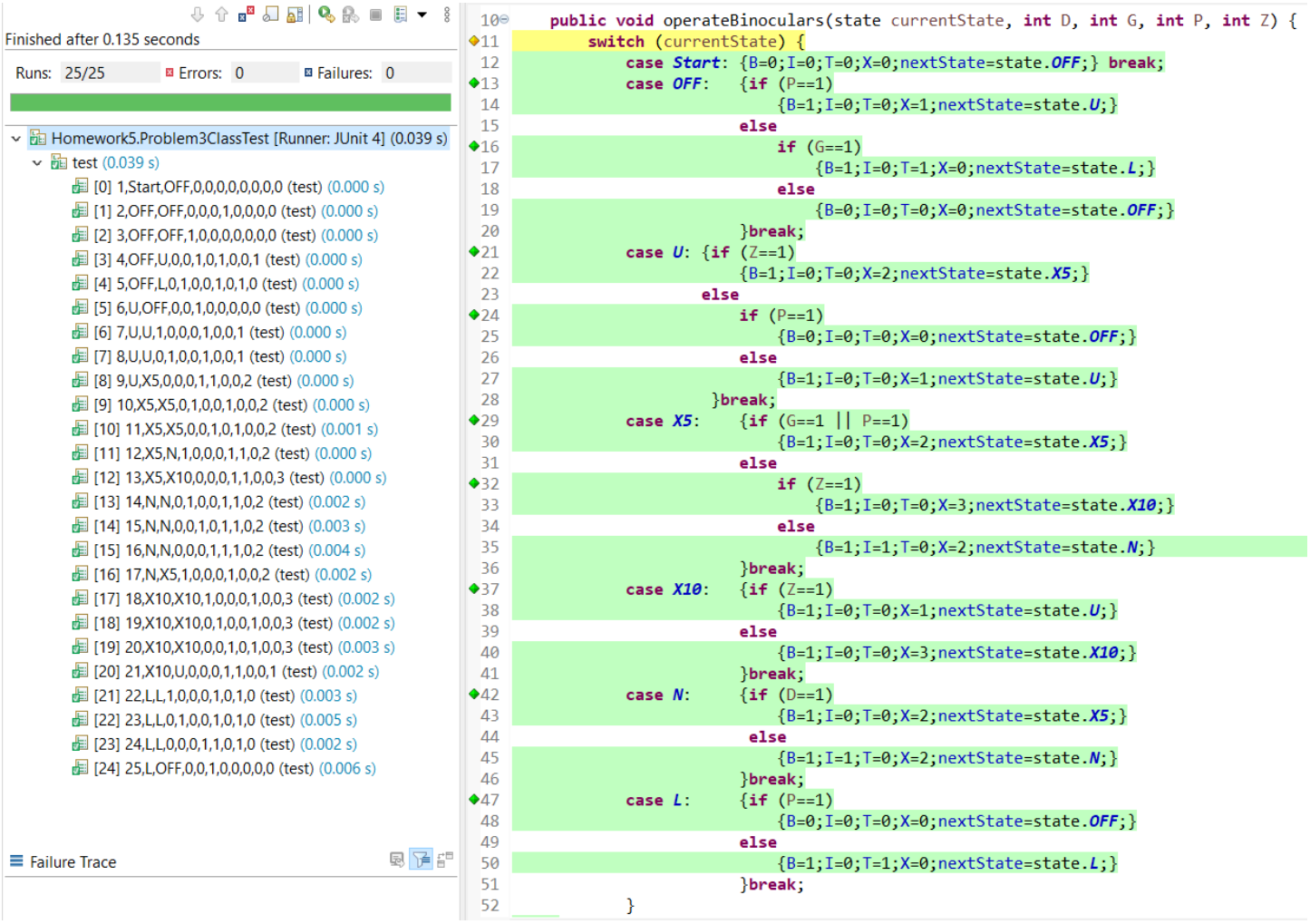
Problem2Class.java

```
1   package Homework5;
2
3   public class Problem2Class {
4
5           public int calcPrevBoxNumber (int boxInCarNum, int rrCarNum, int shipmentNum) {
6  19               int BoxesperRRCars[] = { 380, 400, 420, 430, 380, 400, 430, 420, 380};
7  1                int boxSum=0;
8  15               if ((shipmentNum % 5 != 0) || ((shipmentNum % 25 != 0) && (shipmentNum % 10 == 0)))
9                           {
10 2                        BoxesperRRCars[1] = 420;
11 2                        BoxesperRRCars[2] = 400;
12                          }
13
14 8                if ((boxInCarNum==1) && (rrCarNum==1))
15 1                        boxSum=4_000;
16                  else {
17 9                        for (int i=0;i<rrCarNum-1;i++)
18 1                                boxSum+=BoxesperRRCars[i];
19 3                        boxSum+=boxInCarNum-1;
20                  }
21 1                return boxSum;
22          }
23  }
```

Task 3:

Corrections:
Line 22: Changed X=3 to X=2
Line 25: Changed state.L to state.OFF
Line 27, Changed X=2 to X=1
Line 28, Changed B==1 to P==1
Line 29, Changed state.U to state.X5
Line 34, Changed T to I (2 T's)
Line 35, Changed P==1 to Z==1
Line 36, Changed state.OFF to state.U
Line 36, Changed T to I (2 T's)
Line 42, Changed T to I (2 T's)
Line 46, Changed I to T (2 I's)
Added **break** after all switch cases.

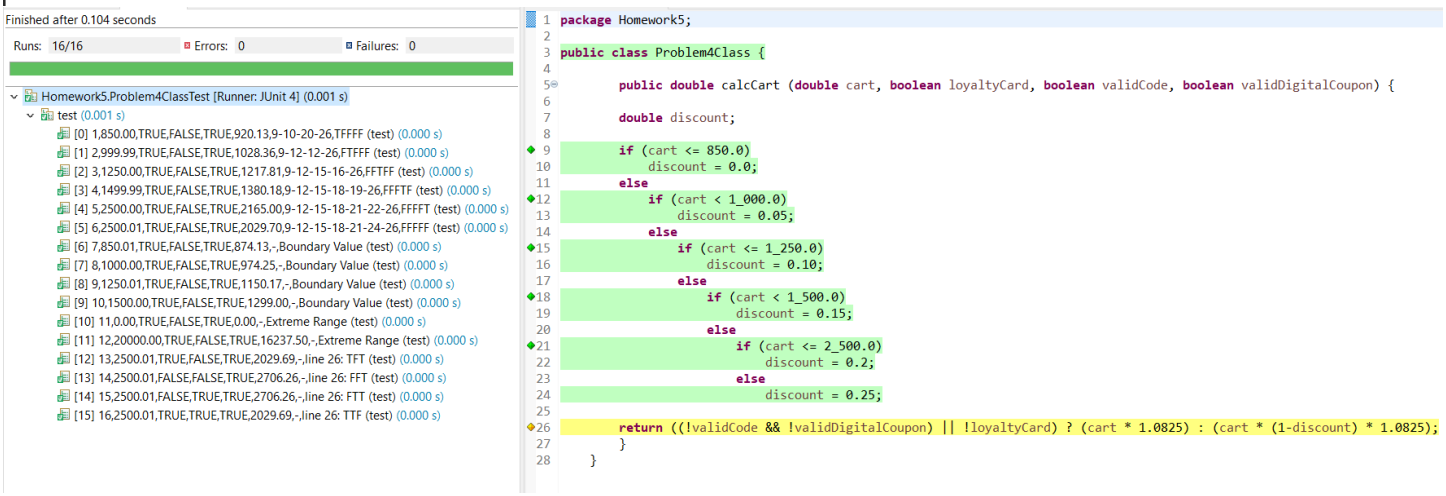
1	Start	OFF	0	0	0	0	0	0	0	0
2	OFF	OFF	0	0	0	1	0	0	0	0
3	OFF	OFF	1	0	0	0	0	0	0	0
4	OFF	U	0	0	1	0	1	0	0	1
5	OFF	L	0	1	0	0	1	0	1	0
6	U	OFF	0	0	1	0	0	0	0	0
7	U	U	1	0	0	0	1	0	0	1
8	U	U	0	1	0	0	1	0	0	1
9	U	X5	0	0	0	1	1	0	0	2
10	X5	X5	0	1	0	0	1	0	0	2
11	X5	X5	0	0	1	0	1	0	0	2
12	X5	N	1	0	0	0	1	1	0	2
13	X5	X10	0	0	0	1	1	0	0	3
14	N	N	0	1	0	0	1	1	0	2
15	N	N	0	0	1	0	1	1	0	2
16	N	N	0	0	0	1	1	1	0	2
17	N	X5	1	0	0	0	1	0	0	2
18	X10	X10	1	0	0	0	1	0	0	3
19	X10	X10	0	1	0	0	1	0	0	3
20	X10	X10	0	0	1	0	1	0	0	3
21	X10	U	0	0	0	1	1	0	0	1
22	L	L	1	0	0	0	1	0	1	0
23	L	L	0	1	0	0	1	0	1	0
24	L	L	0	0	0	1	1	0	1	0
25	L	OFF	0	0	1	0	0	0	0	0




```
10    public void operateBinoculars(state currentState, int D, int G, int P, int Z) {
11        switch (currentState) {
12            case Start: {B=0;I=0;T=0;X=0;nextState=state.OFF;} break;
13            case OFF:   {if (P==1)
14                            {B=1;I=0;T=0;X=1;nextState=state.U;}
15                        else
16                            if (G==1)
17                                {B=1;I=0;T=1;X=0;nextState=state.L;}
18                            else
19                                {B=0;I=0;T=0;X=0;nextState=state.OFF;}
20                        }break;
21            case U: {if (Z==1)
22                            {B=1;I=0;T=0;X=2;nextState=state.X5;}
23                    else
24                        if (P==1)
25                            {B=0;I=0;T=0;X=0;nextState=state.OFF;}
26                        else
27                            {B=1;I=0;T=0;X=1;nextState=state.U;}
28                     }break;
29            case X5:    {if (G==1 || P==1)
30                            {B=1;I=0;T=0;X=2;nextState=state.X5;}
31                        else
32                            if (Z==1)
33                                {B=1;I=0;T=0;X=3;nextState=state.X10;}
34                            else
35                                {B=1;I=1;T=0;X=2;nextState=state.N;}
36                        }break;
37            case X10:   {if (Z==1)
38                            {B=1;I=0;T=0;X=1;nextState=state.U;}
39                        else
40                            {B=1;I=0;T=0;X=3;nextState=state.X10;}
41                        }break;
42            case N:     {if (D==1)
43                            {B=1;I=0;T=0;X=2;nextState=state.X5;}
44                         else
45                            {B=1;I=1;T=0;X=2;nextState=state.N;}
46                        }break;
47            case L:     {if (P==1)
48                            {B=0;I=0;T=0;X=0;nextState=state.OFF;}
49                        else
50                            {B=1;I=0;T=1;X=0;nextState=state.L;}
51                        }break;
52        }
```

Task 4:

```
1,850.00,TRUE,FALSE,TRUE,920.13,9-10-20-26,TFFFF
2,999.99,TRUE,FALSE,TRUE,1028.36,9-12-12-26,FTFFF
3,1250.00,TRUE,FALSE,TRUE,1217.81,9-12-15-16-26,FFTFF
4,1499.99,TRUE,FALSE,TRUE,1380.18,9-12-15-18-19-26,FFFTF
5,2500.00,TRUE,FALSE,TRUE,2165.00,9-12-15-18-21-22-26,FFFFT
6,2500.01,TRUE,FALSE,TRUE,2029.70,9-12-15-18-21-24-26,FFFFF
7,850.01,TRUE,FALSE,TRUE,874.13,-,Boundary Value
8,1000.00,TRUE,FALSE,TRUE,974.25,-,Boundary Value
9,1250.01,TRUE,FALSE,TRUE,1150.17,-,Boundary Value
10,1500.00,TRUE,FALSE,TRUE,1299.00,-,Boundary Value
11,0.00,TRUE,FALSE,TRUE,0.00,-,Extreme Range
12,20000.00,TRUE,FALSE,TRUE,16237.50,-,Extreme Range
13,2500.01,TRUE,FALSE,TRUE,2029.69,-,line 26: TFT
14,2500.01,FALSE,FALSE,TRUE,2706.26,-,line 26: FFT
15,2500.01,FALSE,TRUE,TRUE,2706.26,-,line 26: FTT
16,2500.01,TRUE,TRUE,TRUE,2029.69,-,line 26: TTF
```



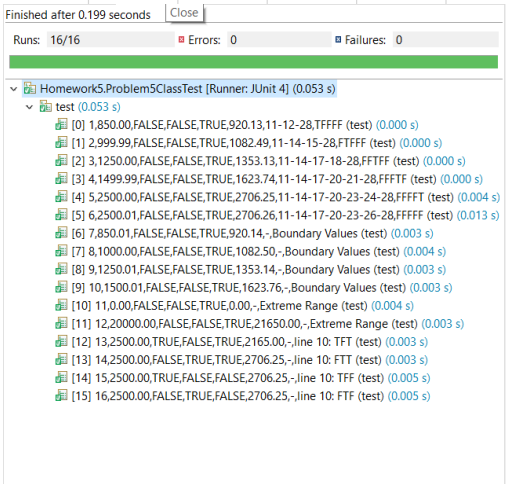

```java
package Homework5;

public class Problem4Class {

	public double calcCart (double cart, boolean loyaltyCard, boolean validCode, boolean validDigitalCoupon) {

	double discount;

	if (cart <= 850.0)
	    discount = 0.0;
	else
	    if (cart < 1_000.0)
	        discount = 0.05;
	    else
	        if (cart <= 1_250.0)
	            discount = 0.10;
	        else
	            if (cart < 1_500.0)
	                discount = 0.15;
	            else
	                if (cart <= 2_500.0)
	                    discount = 0.2;
	                else
	                    discount = 0.25;

	return ((!validCode && !validDigitalCoupon) || !loyaltyCard) ? (cart * 1.0825) : (cart * (1-discount) * 1.0825);
	}
}
```

Problem4Class.java

```
1   package Homework5;
2
3   public class Problem4Class {
4
5                   public double calcCart (double cart, boolean loyaltyCard, boolean validCode, boolean validDigitalCoupon) {
6
7                   double discount;
8
9  5                if (cart <= 850.0)
10 1                        discount = 0.0;
11                  else
12 5                        if (cart < 1_000.0)
13 1                                discount = 0.05;
14                          else
15 5                                if (cart <= 1_250.0)
16 1                                        discount = 0.10;
17                                  else
18 5                                        if (cart < 1_500.0)
19 1                                                discount = 0.15;
20                                          else
21 5                                                if (cart <= 2_500.0)
22 1                                                        discount = 0.2;
23                                                  else
24 1                                                        discount = 0.25;
25
26 17               return ((!validCode && !validDigitalCoupon) || !loyaltyCard) ? (cart * 1.0825) : (cart * (1-discount) * 1.0825);
27                  }
28          }
```

Task 5:

1	850.00	FALSE	FALSE	TRUE	920.13	11-12-28	TFFFF	
2	999.99	FALSE	FALSE	TRUE	1082.49	11-14-15-28	FTFFF	
3	1250.00	FALSE	FALSE	TRUE	1353.13	11-14-17-18-28	FFTFF	
4	1499.99	FALSE	FALSE	TRUE	1623.74	11-14-17-20-21-28	FFFTF	
5	2500.00	FALSE	FALSE	TRUE	2706.25	11-14-17-20-23-24-28	FFFFT	
6	2500.01	FALSE	FALSE	TRUE	2706.26	11-14-17-20-23-26-28	FFFFF	
7	850.01	FALSE	FALSE	TRUE	920.14	-	Boundary Values	
8	1000.00	FALSE	FALSE	TRUE	1082.50	-	Boundary Values	
9	1250.01	FALSE	FALSE	TRUE	1353.14	-	Boundary Values	
10	1500.01	FALSE	FALSE	TRUE	1623.76	-	Boundary Values	
11	0.00	FALSE	FALSE	TRUE	0.00	-	Extreme Range	
12	20000.00	FALSE	FALSE	TRUE	21650.00	-	Extreme Range	
13	2500.00	TRUE	FALSE	TRUE	2165.00	-	line 10: TFT	
14	2500.00	FALSE	TRUE	TRUE	2706.25	-	line 10: FTT	
15	2500.00	TRUE	FALSE	FALSE	2706.25	-	line 10: TFF	
16	2500.00	FALSE	TRUE	FALSE	2706.25	-	line 10: FTF	




```java
package Homework5;

public class Problem5Class {

	public double calcCart (Problem5ServerData data, boolean loyaltyCard, boolean validCode, boolean validDigitalCoupon) {

	double discount=0,cart;
	cart=data.getCart();

	if ((validCode || validDigitalCoupon) && loyaltyCard) {
	    if (cart <= 850.0)
		discount = 0.0;
	    else
		if (cart < 1_000.0)
		    discount = 0.05;
		else
		    if (cart <= 1_250.0)
			discount = 0.10;
		    else
			if (cart < 1_500.0)
			    discount = 0.15;
			else
			    if (cart <= 2_500.0)
				discount = 0.2;
			    else
				discount = 0.25;
	}
	return  (cart * (1-discount) * 1.0825);
    }
}
```

Problem5Class.java

```java
package Homework5;

public class Problem5Class {

		public double calcCart (Problem5ServerData data, boolean loyaltyCard, boolean validCode, boolean validDigitalCoupon) {

1		double discount=0,cart;
1		cart=data.getCart();

9		if ((validCode || validDigitalCoupon) && loyaltyCard) {
5			if (cart <= 850.0)
1				discount = 0.0;
			else
5				if (cart < 1_000.0)
1					discount = 0.05;
				else
5					if (cart <= 1_250.0)
1						discount = 0.10;
					else
5						if (cart < 1_500.0)
1							discount = 0.15;
						else
5							if (cart <= 2_500.0)
1								discount = 0.2;
							else
1								discount = 0.25;
		}
6		return  (cart * (1-discount) * 1.0825);
	}
}
```