1. **Input and Output**

* ***Input:***
* Check-out date
* Check-in date
* Room type
* Service fee
* ***Output:***
* Room cost
* Surcharge
* %Discount
* Number of days

1. **Equivalence classes**

| **Check-out date** | EC1 | Is Valid date | Valid |
| --- | --- | --- | --- |
| EC2 | Invalid date | Invalid |
| **Check-in date** | EC3 | Is Valid date | Valid |
| EC4 | Invalid date | Invalid |
| **Room type** | EC5 | type A | Valid |
| EC6 | type B | Valid |
| EC7 | type C | Valid |
| EC8 | Neither A nor B nor C | Invalid |
| **Number of people** | EC9 | >= 1 and <= 4 | Valid |
| EC10 | <1 | Invalid |
| EC11 | >4 | Invalid |
| **Surcharge** | EC12 | >= 0 | Valid |
| EC13 | < 0 | Invalid |
| **Service fee** | EC14 | ≥ 0 VND | Valid |
| EC15 | < 0 VND | Invalid |
| **%Discount** | EC16 | No discount (total amount < 2 million VND) | Valid |
| EC17 | 10% discount (total amount ≥ 2 million VND, but < 4 million VND) | Valid |
| EC18 | 20% discount (total amount ≥ 4 million VND) | Valid |
| EC19 | Not 0%, 10%, 20% | Invalid |
| **Room cost** | EC20 | Correct application of room price, surcharge, service fee, and discount based on the formula. | Valid |
| EC21 | Error message | Invalid |

1. **Find best “representative” for each subset**

| TC | EC | Check-out date | Check-in date | Room type | Num of people | Surcharge | Service fee | %Discount | Expected Result |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1, 3, 5, 9, 12, 14, 16 | 11/10/2024 | 10/10/2024 | A | 2 | 0 | 200,000 VND | 0% | 1,100,000 VND |
| 2 | 1, 3, 6, 9, 12, 14, 17 | 17/10/2024 | 10/10/2024 | B | 4 | 70,000 VND | 200,000 VND | 10% | 2,448,000 VND |
| 3 | 1, 3, 7, 9, 12, 14, 18 | 26/10/2024 | 10/10/2024 | C | 4 | 70,000 VND | 600,000 | 20% | 4,320,000 VND |
| 4 | 2 | 40/10/2024 | 10/10/2024 | A | 2 | 0 | 200,000 VND | 0% | Display error “Invalid check out date” |
| 5 | 4 | 11/10/2024 | 40/10/2024 | A | 2 | 0 | 200,000 VND | 0% | Display error “Invalid check-in date” |
| 6 | 8 | 11/10/2024 | 10/10/2024 | D | 2 | 0 | 200,000 VND | 0% | Display error “Invalid room type” |
| 7 | 10 | 11/10/2024 | 10/10/2024 | A | 0 | 0 | 200,000 VND | 0% | Display error “Invalid number of people” |
| 8 | 11 | 11/10/2024 | 10/10/2024 | A | 5 | 0 | 200,000 VND | 0% | Display error “Invalid number of people” |
| 9 | 13 | 11/10/2024 | 10/10/2024 | A | 2 | -1 | 200,000 VND | 0% | Display error “Invalid surcharge” |
| 10 | 15 | 11/10/2024 | 10/10/2024 | A | 2 | 0 | -20 VND | 0% | Display error “Invalid service fee” |
| 11 | 19 | 11/10/2024 | 10/10/2024 | A | 2 | 0 | 200,000 VND | 50% | Display error “Invalid %Discount” |

1. **Best representatives of ordered fields will typically be boundary values**

| TC | Check-out date | Check-in date | Room type | Num of people | Surcharge | Service fee | %Discount | Expected Result |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Num of people >= 1 and <= 4 | 11/10/2024 | 10/10/2024 | A | 1 | 0 | 200,000 VND | 0% | 1,100,000 VND |
| Num of people >= 1 and <= 4 | 11/10/2024 | 10/10/2024 | A | 4 | 70,000 | 200,000 VND | 0% | 1,100,000 VND |
| Num of people >= 1 and <= 4 | 11/10/2024 | 10/10/2024 | A | 2 | 0 | 200,000 VND | 0% | 1,100,000 VND |
| Num of people >= 1 and <= 4 | 11/10/2024 | 10/10/2024 | A | 3 | 35,000 | 200,000 VND | 0% | 1,100,000 VND |
| Num of people > 4 | 11/10/2024 | 10/10/2024 | A | 5 | 70,000 | 200,000 VND | 0% | Display error “Invalid number of people” |
| Num of people < 1 | 11/10/2024 | 10/10/2024 | A | 0 | 70,000 | 200,000 VND | 0% | Display error “Invalid number of people” |
| Service fee >= 0 | 11/10/2024 | 10/10/2024 | A | 1 | 0 | 0 VND | 0% | 1,100,000 VND |
| Number of days <= 0 | 09/10/2024 | 10/10/2024 | A | 1 | 0 | 0 VND | 0% | Display error “Invalid number of day” |
| Number of days > 0 | 11/10/2024 | 10/10/2024 | A | 1 | 0 | 0 VND | 0% | 1,100,000 VND |