**SOFTWARE TESTING**

**(CSE 455)**

**ASSIGNMENT # 02**

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| **REG NO:** | FA21-BSE-045 |
| **CLASS & SECTION:** | BSSE-7A |
| **SUBMITTED TO:** | Mam Najmun Nisa |
| **DATE SUBMITTED:** | 30-10-2024 |



**Department of Computer Science**

**Question1:**

Equivalence classes of each attribute:

1. **Subject:**

* Valid Classes:

1. Mathematics
2. Science
3. Language

* Invalid Classes:

Other subjects that platform does not support like History, Arts

1. **Tutor Experience Level:**

* Valid Classes:

1. Beginner
2. Intermediate
3. Expert

* Invalid Classes:

Any other levels like Novice, Advanced

1. **Lesson Duration**

* Valid Classes:
  1. Positive integers (e.g., 1, 2, 3, etc.)
* Invalid Classes:
  1. Negative integers (e.g., -1, -2)
  2. Zero (0)
  3. Non-integer values (e.g., "two", "", null)

1. **Discount Code**

* Valid Classes:

1. Valid codes (e.g., "DISC10", "STUDENT15")

* Invalid Classes:

1. Invalid codes (e.g., "INVALIDCODE", "")
2. Null
3. **Payment Method**

* Valid Classes:
  1. Credit Card
  2. PayPal
  3. Bank Transfer
* Invalid Classes:
  1. Cash
  2. Cryptocurrency
  3. Invalid strings (e.g., "", null)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case** | **Subject** | **Tutor Experience** | **Lesson Duration** | **Discount Code** | **Payment** | **Expected Results** |
| **1** | Language | Intermediate | 3 | STUDENT15 | PayPal | Valid:  Applies 15% Discount |
| **2** | Mathematics | Beginner | 3 | DISC10 | Credit Card | Valid:  Applies 10% Discount |
| **3** | Language | Intermediate | 1 | None | Credit Card | Valid:  No discount applies |
| **4** | Science | Beginner | -1 | DISC10 | BitCoin | Invalid:  Duration cannot be negative and payment not supported |
| **5** | History | Expert | 3 | None | PayPal | Invalid:  Subject not supported |
| **6** | Science | Novice | 2 | DISC10 | Bank Transfer | Valid:  Applies Discount |

**Question 2:**

**Conditions:**

* C1: Transaction amount exceeds $5000 (True/False)
* C2: Transaction occurs in an unusual location (True/False)
* C3: Transaction occurs during unusual hours (True/False)

**Actions:**

* A1: Flag transaction as potentially fraudulent
* A2: Flag transaction as suspicious
* A3: Flag transaction as very suspicious
* A4: Issue an alert

1. **Cause Effect Graph**

C1: Transaction amount > $5000

C2: Unusual location

C3: Unusual hours

1. C1 -> (A1 & A3)
2. C2 -> (A2 & A3)
3. (C1 & C2) -> A4
4. C3 -> (A1 & A3)
5. **Decision table**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Conditions** | **Rule1** | **Rule2** | **Rule3** | **Rule4** | **Rule5** | **Rule6** | **Rule7** | **Rule8** |
| **C1 (Y/N)** | Y | Y | Y | Y | N | N | N | N |
| **C2 (Y/N)** | Y | Y | N | N | Y | Y | N | N |
| **C3 (Y/N)** | Y | N | Y | N | Y | N | Y | N |
| **Actions** |  | | | | | | | |
| **A1** | Y | Y | Y | Y | Y | N | Y | N |
| **A2** | Y | Y | N | N | N | Y | N | N |
| **A3** | Y | Y | Y | Y | Y | Y | Y | N |
| **A4** | Y | Y | N | N | N | N | N | N |

1. **Test case table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test ID** | **Amount** | **Location** | **Time** | **Expected Result** |
| **1** | $5000 | Usual | 4:00 pm | A1, A3 |
| **2** | $2000 | Unusual | 2:00 pm | A2, A3 |
| **3** | $3000 | Usual | 3:00 pm | A1, A3 |
| **4** | $9000 | Unusual | 7:00 pm | A4, A3 |
| **5** | $7000 | Unusual | 5:00 pm | A1, A2, A3, A4 |