**Task №1 Test design techniques – Boundary values**

**Equivalence partitioning and Boundary value analysis**

Internal telephone system for a company with 100 telephones has 3-digit extension numbers from 100 to 199. In a system designed to support registration of telephone number user should enter unique phone number and user’s first and last names.

Partitions should be designed for phone number field.

1. Build equivalence classes (partitions) based on given information
2. Stand Out boundary values

|  |  |  |
| --- | --- | --- |
| Invalid | Valid | Invalid |
| 1 99 | 100 199 | 200 250 |

* The system issues an error when testing number 99, as expected.
* When testing is 100 , the test is successful, the user can use the number.
* When testing is 199 , the test is successful, the user can use the number.
* The system issues an error when testing the number 200, as expected.

**Task №2 Decision table**

**Decision tables**

If you are a new customer opening a credit card account, you will get a 5% discount on all your purchases today. If you are an existing customer and works with bank more than a year, you will get a 15% discount. If you are a bank client and works with bank less than a year, you will get a 10% discount. If you have a coupon, you can get 20% off today (but it can't be used with the 'new customer' and ‘less than a year existing customer’ discounts).

1. Build decision table based on given information

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Customers of the Bank** | **Rules 1** | **Rules 2** | **Rules 3** | **Rules 4** | **Rules 5** | **Rules 6** |
| New Customer | 5% | 5%+20% | 5% | 5% | 10% | 15% |
| Customer > 1 year | 10% | 10% | 10%+20% | 10% | 15% | 10% |
| Customer < 1 year | 15% | 15% | 15% | 15%+20% | 15% | 5% |
| **Actions** |  |  |  |  |  |  |
| Result | **x** |  |  | **x** |  |  |
| Error |  | **x** | **x** |  | **x** | **x** |

**Task №3 State transition**

**State transition**

User sends message using mobile phone. He enters a text of a message, and then phone number of recipient and click ‘Send’. Assume that delivery report option is enabled. If user gets positive delivery report, then message will be delivered to recipient. If not, then message will be stored on server for 12 hours. If recipient turns on the phone until 12 hours over, then message will be delivered. If not, then user will get negative delivery report and should re-send message again.

1. Build state transition diagram based on given information
2. Cover requirements above by tests (write test cases’ names and objectives) based on state transition analysis

User

TURNED ON PHONE

TURNED OFF PHONE

Send Message

SERVER

12 HOURS

USER RECEIVES NOTIFICATION