Use Cases and Use Case Level Test Cases

Lab Book

Document Revision History

Date	Revision No.	Author	Summary of Changes
12/8/09	1	Priya Rane	Material Revamp
30/6/2011	1.1	Vaishali Kunchur	Material Revamp
12/7/2015	2.0	Shilpa Bhosle	Material Revamp

Table of Contents

Lab 1.   Use Cases Basics

Goals	• **Understand the process of creating Use Cases.** • **Learn to apply basic techniques for writing Use Cases.** • **Understand the application and write creative Use Cases**
Time	**90 minutes**

Note - To perform this lab you need to refer to the Banking Exam Portal Case

Study

discussed in the Requirements Validation and Functional Decomposition

lab

book.
To write the effective Use Cases you need to capture all those details

from the

Requirements Validation and Functional Decomposition lab book as well

as the

details given in the lab book.

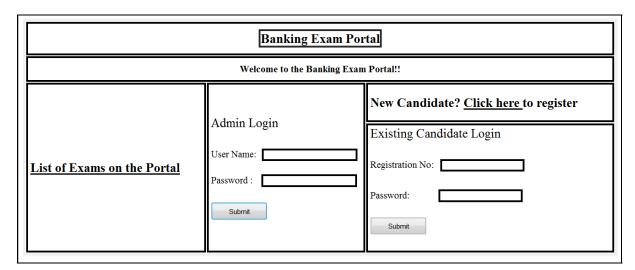| Precondition	• Administrator is an employee of a Banking Exam Portal company • Administrator has an access to the Banking Exam Portal Website • Administrator has a valid user id and a password
Description	• This use case describes the process by which administrator can log into the Banking Exam Portal system
Steps to Login to the system	• Administrator visits the Banking Exam Portal URL **www.bankersjob.com/exam** using any standard browser. • Administrator enters his/her user-id and password and clicks on the login button in the section of a home page given for administrator login. • The system validates the user id and password combination with the database. • If the authentication is unsuccessful, a login failure message is displayed. • On successful login, the admin home page is displayed.

	• On Successful login, the user-id and role fields are stored in the HTTP session for future use during that session.

1.1 Write a use case for the following with the help of given details.

1.1.1 Login – Administrator

Rules for login	• All fields on the Login web page are mandatory • The User Name field can accept only characters • The User Name field should accept maximum 10 characters • Passwords must have at least six characters. • Passwords must use at least three of the four available character types: lowercase letters, uppercase letters, numbers, and symbols. **NOTE – Detailed information on the rules can be read from RVFD lab book**

UI Prototype:

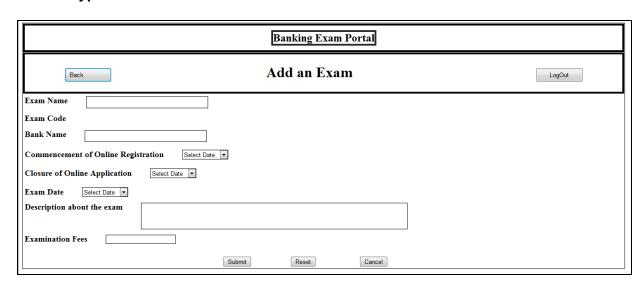| **Banking Exam Portal**		
Welcome to the Banking Exam Portal!!		
List of Exams on the Portal	Admin Login User Name: [ ] Password : [ ] [Submit]	**New Candidate? Click here to register** Existing Candidate Login Registration No: [ ] Password: [ ] [Submit]

1.1.2 Add Exam Details

Precondition	• Administrator is an employee of a Banking Exam Portal company • Administrator has an access to the Banking Exam Portal Website • Administrator has a valid user id and a password • Administrator has already logged in to the banking exam portal
Description	• This Use Case describes the process by which

	administrator can add a new exam to the existing set of exams.
Steps to login to the system	• Administrator clicks on the Add Exam Details link available on the Admin Home Page • Administrator will be navigated to the Add an Exam web page • Administrator fills all the required details to add a new exam to the banking exams database • Administrator clicks on the Submit button to complete the process of adding a new exam
Rules for adding a new exam	• All fields are mandatory • The exam name should be unique • The exam code will be auto-generated once the exam name is entered • The commencement of online registration date should be a future date • The closure date of an online application should be 30 days from the commencement date • The date of the exam should be at least 60 days ahead of the commencement date • The exam description and fees needs to be mentioned along with the exam details **NOTE – Detailed information on the rules can be read from RVFD lab book**

UI Prototype:

Banking Exam Portal

Back	**Add an Exam**	LogOut

Exam Name [   ]

Exam Code

Bank Name [   ]

Commencement of Online Registration [Select Date ▾]

Closure of Online Application [Select Date ▾]

Exam Date [Select Date ▾]

Description about the exam [   ]

Examination Fees [   ]

[Submit]   [Reset]   [Cancel]

1.1.3   Register (New User/Applicant)

UI Prototype:

Precondition	• New user/Applicant is not a member of the website • New user/Applicant has an access to the Banking Exam Portal Website
Description	• This Use Case describes the process by which a new user/applicant can register on the Banking Exam Portal website
Steps to login to the system	• New user/Applicant navigates to the home page and clicks on the "Click here" link to start the registration process • New user/Applicant will be navigated to the Register web page • New user/Applicant fills all the required details to register on the website • Applicant clicks on the Submit button to complete the process of registration
Rules for adding a new exam	• All fields are mandatory • Exam to be applied for will be selected from the dropdown box containing the list of all available exams on the banking exam website • The exam code will be displayed automatically as per the exam selection • First Name, Middle Name and Last Name fields should accept character data • Other details like DOB should be a valid date and Email ID should follow valid email id format • The educational qualification details like degree, subject, year of passing, percentage of marks should be entered • Photo and signature should be uploaded by the applicant as image files **NOTE – Detailed information on the rules can be read from RVFD lab book**

Banking Exam Portal

Back	New Registration	LogOut

Exam Applied For Select Exam Name ▾

Exam Code :

Personal Details

First Name [＿＿＿＿]   **Middle Name** [＿＿＿＿]   **Last Name** [＿＿＿＿]

Mobile Number [＿＿＿＿]   **Confirm Mobile No** [＿＿＿＿]

Email Address [＿＿＿＿]

Date of Birth Select Date ▾

Gender ◉ Male   ○ Female

Marital Status ○ Married ◉ UnMarried

Educational Qualification Details

Graduation/Equivalent Passes Select Graduation ▾   **Degree/Stream Subject** [＿＿＿＿]   **Year of Passing** select Year ▾   **%of Marks** [＿＿]

Photograph and Signature

Insert Signature [＿＿＿] Browse... [＿＿＿＿] (Signature should be 10Kb to 20Kb)

Insert Photograph [＿＿＿] Browse... [＿＿＿＿] (Applicant's photo should be upto 50Kb)

[Save & Submit]   [Reset]   [Cancel]

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Lab 2.   Creating Use Cases

Goals	• **Understand the application and develop creative Use cases.**
Time	**90 minutes**

2.1: Supporting document for Leave application

Please note that all fields in the leave application form are Mandatory fields.

A. Pre Condition:
   a.   **User is employee of company and having access to Intranet**
   b.   **User has leave balance for applying a leave**

B. Description: User wants to register for Leave (1/2 day or more)

C. Steps for accessing Leave application:

1.   User will access Intranet
2.   Click on Employee Corner
3.   Click on Attendance System
4.   Select Leave Application – Leave application form will be displayed (Diagram 1)

D. Procedure for applying for leave:

1.   ½ day leave
   a.   Specify start date of the leave (Using Calendar Option – Diagram 2) Dates are non-enterable and hence need to be selected from calendar.
   b.   If the half day is in the start date then choose check box for half day in start date
   c.   Specify in which session the half day is. (Default value is first session)
   d.   Specify end date of the leave. (Using Calendar Option – Diagram 2) Dates are non-enterable and hence need to be selected from calendar.
   e.   Since you are applying for half day leave start date should be same as end date
   f.   If the half day is in the end date then choose check box for half day in end date (Make sure that half day in start date check box is not checked in this case)
   g.   Specify in which session the half day is. (Default value is first session)
   h.   Specify reason of leave from the given list of leaves
   i.   Specify Reason of leave
   j.   Submit the leave application

2.   1 or more than 1 day leave
   a.   Specify start date of the leave
   b.   Specify end date of the leave
   c.   Specify type of leave from the list provided
   d.   Specify reason of leave

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    e. Submit the leave application
    f. 1 day leave can be applied by choosing Half day in start date second session
        and half day in end date first session

E. Rules for leave application:
    1. CL cannot be applied for more than 3 continues days
    2. CL cannot be combined with any other type of leave
    3. SL cannot suffix PL
    4. PL cannot prefix SL
    5. ML cannot be prefixed with any other type of leave and can be continued by SL / PL
    6. FF can be combined with any leave either prefix or suffix but cannot be sandwiched
        between any leave (Weekends / Holidays)
    7. FF cannot be applied in break-ups
    8. Once the leave is approved it cannot be cancelled unless cancellation of leave is
        submitted and is sanctioned.
    9. Pending leave (Leave before approval) can be cancelled.
    10. When leave type is FF – Comp off dates should be selected by clicking on the link
        provided and using form displayed .(Diagram 3)
    11. Leave cannot be applied for the future dates (Dates in the next year)
    12. Leave cannot be applied for the dates where attendance is already marked.
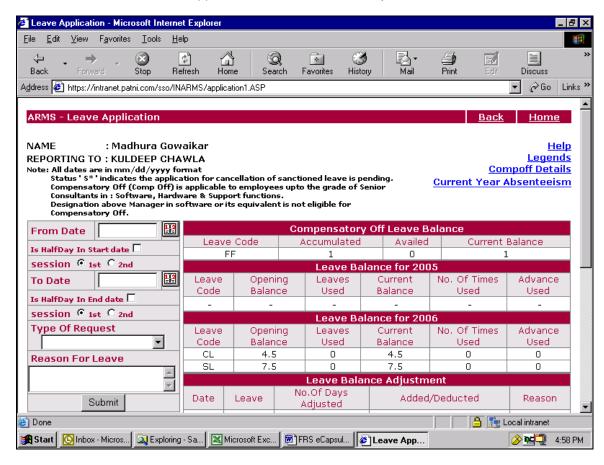   13. Leave cannot be applied for Week offs and holidays.

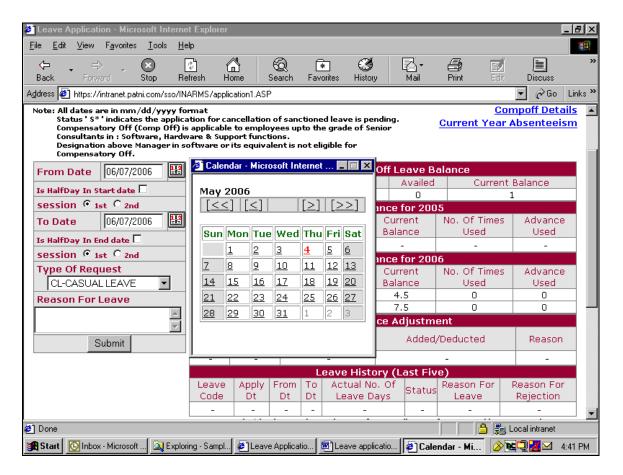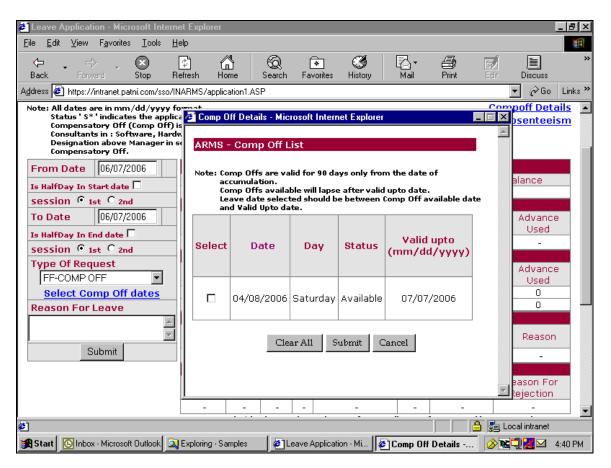Figure 1

Figure 2

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Figure 3

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Lab 3.   Test Cases for Use case

Goals	• **Learn to write test cases for given Use cases description**
Time	**60 minutes**

Transfer Funds Use Case Specification

Brief Description:

This use case allows account holder to transfer funds between two different accounts of this bank. This also includes the transfer between Current and Savings account of this bank.

Actor(s)

Actor	Description
Account Holder	**Any user who has at least one account with the bank**
Cur_ICENTURIAN	**The external bank system that stores the current accounts**
Sav_ICENTURIAN	**The external bank system that stores the savings accounts**

Preconditions

The user has successfully logged on to the banking system.

Flow of Events

Basic Flow

1. User initiates Transfer Funds use case
2. System retrieves the source accounts (i.e. the set of accounts owned by the account holder) and the destination accounts (i.e. accounts in this bank which have been activated to receive funds. By default all accounts owned by the account holder are activated to receive funds) from the external Bank Systems (Sav_ICCENTURIAN and Cur_ICENTURIAN)
3. System requests user to provide information like First Delivery Date, Frequency (Weekly, Every 2 Weeks, Monthly, Quarterly, half Yearly, Yearly), Number of Times and Transfer Amount
4. User provides necessary details to transfer funds
5. System validates the information entered by user (for validation criteria refer Business Rules Section)
6. On successful validation, System calculates the applicable transaction fee (if any)
7. System performs Insufficient Balance Check (refer Business Rule section) if the selected source account is
   current account
8. System displays the transfer details along with transaction fee details for user's verification.
9. User provides the verification and confirms the transfer
10. System completes the transfer and accordingly credits the destination account and debits the source account

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Alternative Flows

Minimum Balance Check

This flow is executed at step 7 of the basic flow when the selected source account is savings account.
1. System performs Minimum Balance Check (refer Business Rule section).
2. On Minimum Balance Check failure, System displays appropriate message and ends the Use Case.
3. On successful Minimum Balance Check, System continues from the basic flow at step 8.

Exceptional Flows

Invalid Input

This flow is executed when there is a validation failure at step 5 of basic flow.
1. System displays the appropriate error message and asks user to enter the correct information.
2. System continues the use case from the basic flow at step 3.

Insufficient Balance

This flow is executed at step 7 of the basic flow when Insufficient Balance Check business rule is violated.
1. System displays the appropriate error message and ends the Use Case.

Post Conditions

Transfer Amount is successfully credited to destination account and debited from source account

Business Rules

1. First Delivery Date, Transfer Amount are mandatory

2. First Delivery Date > Today's Date

3. Following rules are applicable to Number of Times

    a. It will be applicable only if Frequency is selected

    b. It should be a positive integer

4. Transfer Amount should be a positive number

5. Insufficient Balance Check for Current Account

    $AB - (TA + TF) < 0$

6. Minimum Balance Check for Savings Account

    $AB - (TA + TF) >= 1000$

    Where, AB = Account Balance

        TA = Transfer Amount

        TF = Transaction Fee

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