



IT314: Software Engineering

Lab 3: Use Case Modeling and Product Backlog (Part 3)

Group - 4 (Real Estate Management System)

202201088 MIHIR MOOLCHANDANI

202201015 MEGHAVI GOHIL

202201057 GANDHI AYUSH CHIRAGBHAI

202201054 ASHUTOSH SINGARWAL

202201078 VEKARIYA VENIL KISHORBHAI

202201060 BHARA CHINTAN VINODKUMAR

202201085 DHOLARIYA PARTH NARENDRA

202201089 PATEL JEET HITESHBHAI

202201020 SHRUTI RANJIT CHOUDHARY

202201070 PATEL HARSHAL KANTILAL

Sprint Details

Sprint 1: User Authentication & User Profile Dashboard

Objective: Develop the core user authentication and profile management features.

Sprint Details: Implement user registration, secure login, and profile editing capabilities.

User Stories:

- User Registration
- Edit Profile Information

Function Point Calculation:

Unadjusted Function Point Count:

External Input:

1. Login Credentials - Average
2. User Details Form - Average
3. Updated Details - Average

External Output:

1. Registration Success Confirmation - Low
2. View Dashboard - Average

Internal Logical File:

1. User Details Database - Average

Complexity				
Description	Low	Average	Complex	Total
EI	-	3 x 4	-	12
EO	1 x 4	1 x 5	-	9
EQ	-	-	-	-
ILF	-	1 x 10	-	10
EIF	-	-	-	-
Unadjusted Function Point Count (UFPC)				31

Cost Adjustment Factor:

No.	Factor Description	Weight
01.	Backup and Recovery	3
02.	Data Communication	1
03.	Distributed Processing Functions	1
04.	Is Performance Critical?	2
05.	Existing Operating Environment	3
06.	On-line Data Entry	4
07.	Input Transaction built over Multiple Screens	1
08.	Master Files updated On-line	4
09.	Complexity of Inputs, Outputs, Files, Inquiries	3
10.	Complexity of Processing	2
11.	Code Design for Reuse	2
12.	Are Conversion/Installation included in Design?	1
13.	Multiple Installations	1
14.	Application Designed to Facilitate Change by the User	3
TOTAL		31

$$\text{CAF} = 0.65 + (0.01 \times 31) = 0.96$$

Adjusted Function Point Count:

$$\text{AFPC} = \text{UFPC} \times \text{CAF} = 31 \times 0.96 = 30$$

$$\text{AFPC} = 30$$

Timeline

$$\text{FPs per person per week} = 3$$

$$\text{Estimated Time} = 30 / (3 \times 10) = 1 \text{ Week}$$

Sprint 2: Property Listing and Management

Objective: Enable users to list and manage properties.

Sprint Details: Implement features for users to list properties, manage visit slots, edit property details, and oversee property listings.

User Stories:

- List Properties
- Manage Visit Slots
- Edit Property Details
- Manage Property Listings

Function Point Calculation:

Unadjusted Function Point Count:

External Input:

1. Property Details Form - Average
2. Meets/Visits Slots Update - Average
3. Update Property Listings - Average
4. Update Property Details - Average

External Output:

1. View Property List - Average
2. View Property Details - Average

Internal Logical File:

1. Property Details - Complex
2. Property Listings - Average

Complexity				
Description	Low	Average	Complex	Total
EI	-	4 x 4	-	16
EO	-	2 x 5	-	10
EQ	-	-	-	-
ILF	-	1 x 10	1 x 15	25
EIF	-	-	-	-
Unadjusted Function Point Count (UFPC)				51

Cost Adjustment Factor:

No.	Factor Description	Weight
01.	Backup and Recovery	4
02.	Data Communication	3
03.	Distributed Processing Functions	2
04.	Is Performance Critical?	3
05.	Existing Operating Environment	2
06.	On-line Data Entry	4
07.	Input Transaction built over Multiple Screens	2
08.	Master Files updated On-line	4
09.	Complexity of Inputs, Outputs, Files, Inquiries	3
10.	Complexity of Processing	3
11.	Code Design for Reuse	3
12.	Are Conversion/Installation included in Design?	2
13.	Multiple Installations	1
14.	Application Designed to Facilitate Change by the User	3
TOTAL		39

$$\text{CAF} = 0.65 + (0.01 \times 39) = 1.04$$

Adjusted Function Point Count:

$$\text{AFPC} = \text{UFPC} \times \text{CAF} = 51 \times 1.04 = 53$$

$$\text{AFPC} = 53$$

Timeline

FPs per person per week = 3

$$\text{Estimated Time} = 53 / (3 \times 10) = 2 \text{ Weeks}$$

Sprint 3: Search, Filter, and Favorites Functionality

Objective: Enhance user experience by allowing property search and favorites management.

Sprint Details: Implement functionality for users to search for properties, apply filters, and save favorite properties for easy access.

User Stories:

- Search for Properties
- Save Favorite Properties

Function Point Calculation:

Unadjusted Function Point Count:

External Input:

1. Favorite Properties - Low

External Output:

1. View Favorites - Low
2. View Properties List - Average

External Query:

1. Filter and Search Properties - Complex

Internal Logical File:

1. Favorite Properties - Low

Complexity				
Description	Low	Average	Complex	Total
EI	1 x 3	-	-	3
EO	1 x 4	1 x 5	-	9
EQ	-	-	1 x 6	6
ILF	1 x 7	-	-	7
EIF	-	-	-	-
Unadjusted Function Point Count (UFPC)				25

Cost Adjustment Factor:

No.	Factor Description	Weight
01.	Backup and Recovery	2
02.	Data Communication	2
03.	Distributed Processing Functions	2
04.	Is Performance Critical?	4
05.	Existing Operating Environment	3
06.	On-line Data Entry	4
07.	Input Transaction built over Multiple Screens	2
08.	Master Files updated On-line	3
09.	Complexity of Inputs, Outputs, Files, Inquiries	4
10.	Complexity of Processing	4
11.	Code Design for Reuse	3
12.	Are Conversion/Installation included in Design?	1
13.	Multiple Installations	2
14.	Application Designed to Facilitate Change by the User	4
TOTAL		40

$$\text{CAF} = 0.65 + (0.01 \times 40) = 1.05$$

Adjusted Function Point Count:

$$\text{AFPC} = \text{UFPC} \times \text{CAF} = 25 \times 1.05 = 26$$

$$\text{AFPC} = 26$$

Timeline

FPs per person per week = 3

$$\text{Estimated Time} = 26 / (3 \times 10) = 1 \text{ Week}$$

Sprint 4: Rating, Reviews, and Recommendations Functionality

Objective: Improve user engagement through property recommendations and a rating and review system.

Sprint Details: Implement features for property recommendations, allowing users to rate and review properties, and enabling property owners to respond to reviews.

User Stories:

- Property Recommendations
- Rate and Review Property
- Respond to Ratings and Reviews

Function Point Calculation:

Unadjusted Function Point Count:

External Input:

1. Ratings for Properties - Low
2. Reviews for Properties - Low

External Output:

1. Property Recommendations - Complex

Internal Logical File:

1. User Preferences/Interaction Data - Average
2. Ratings and Reviews - Average

Complexity				
Description	Low	Average	Complex	Total
EI	2 x 3	-	-	6
EO	-	-	1 x 7	7
EQ	-	-	-	-
ILF	-	2 x 10	-	20
EIF	-	-	-	-
Unadjusted Function Point Count (UFPC)				33

Cost Adjustment Factor:

No.	Factor Description	Weight
01.	Backup and Recovery	3
02.	Data Communication	3
03.	Distributed Processing Functions	3
04.	Is Performance Critical?	4
05.	Existing Operating Environment	3
06.	On-line Data Entry	4
07.	Input Transaction built over Multiple Screens	2
08.	Master Files updated On-line	3
09.	Complexity of Inputs, Outputs, Files, Inquiries	4
10.	Complexity of Processing	5
11.	Code Design for Reuse	3
12.	Are Conversion/Installation included in Design?	1
13.	Multiple Installations	2
14.	Application Designed to Facilitate Change by the User	4
TOTAL		44

$$\text{CAF} = 0.65 + (0.01 \times 44) = 1.09$$

Adjusted Function Point Count:

$$\text{AFPC} = \text{UFPC} \times \text{CAF} = 33 \times 1.09 = 36$$

$$\text{AFPC} = 36$$

Timeline

$$\text{FPs per person per week} = 3$$

$$\text{Estimated Time} = 36 / (3 \times 10) = 1 \text{ Week}$$

Sprint 5: Property Details, Visits, and Transactions

Objective: Facilitate detailed property exploration, visit scheduling, and transaction processes.

Sprint Details: Implement functionality for users to view property details, schedule visits or meetings, and proceed with property transactions.

User Stories:

- View Property Details
- Schedule Meets/Visits
- Proceed with Transaction

Function Point Calculation:

Unadjusted Function Point Count:

External Input:

1. Schedule Meets/Visits - Average
2. Transaction Process - Complex

External Output:

1. Meets/Visits Slots Confirmation - Low
2. Transaction Success Confirmation - Low

Internal Logical File:

1. Visit Schedules - Average
2. Transaction Records - Average

External Interface File:

1. Payment Gateway API - complex

Complexity				
Description	Low	Average	Complex	Total
EI	-	1 x 4	1 x 6	10
EO	2 x 4	-	-	8
EQ	-	-	-	-
ILF	-	2 x 10	-	20
EIF	-	-	1 x 10	10
Unadjusted Function Point Count (UFPC)				48

Cost Adjustment Factor:

No.	Factor Description	Weight
01.	Backup and Recovery	2
02.	Data Communication	4
03.	Distributed Processing Functions	3
04.	Is Performance Critical?	4
05.	Existing Operating Environment	3
06.	On-line Data Entry	3
07.	Input Transaction built over Multiple Screens	3
08.	Master Files updated On-line	3
09.	Complexity of Inputs, Outputs, Files, Inquiries	4
10.	Complexity of Processing	4
11.	Code Design for Reuse	3
12.	Are Conversion/Installation included in Design?	1
13.	Multiple Installations	2
14.	Application Designed to Facilitate Change by the User	3
TOTAL		42

$$\text{CAF} = 0.65 + (0.01 \times 42) = 1.07$$

Adjusted Function Point Count:

$$\text{AFPC} = \text{UFPC} \times \text{CAF} = 48 \times 1.07 = 51$$

$$\text{AFPC} = 51$$

Timeline

FPs per person per week = 3

$$\text{Estimated Time} = 51 / (3 \times 10) = 2 \text{ Weeks}$$

Sprint 6: Admin Panel and Notifications

Objective: Establish administrative controls and user notifications for key events.

Sprint Details: Implement notifications for new properties and booked visits, enable admin to update property recommendations, and provide tools for managing inappropriate reviews.

User Stories:

- Notifications for New Properties
- Notifications for Booked Visits
- Admin Property Recommendations
- Manage Inappropriate Reviews

Function Point Calculation:

Unadjusted Function Point Count:

External Output:

1. Notifications for New Properties - Average
2. Notifications for Booked Visits - Average

Internal Logical File:

1. Notification Data - Average
2. Booking Data - Average

Complexity				
Description	Low	Average	Complex	Total
EI	-	-	-	-
EO	-	2 x 5	-	10
EQ	-	-	-	-
ILF	-	2 x 10	-	20
EIF	-	-	-	-
Unadjusted Function Point Count (UFPC)				30

Cost Adjustment Factor:

No.	Factor Description	Weight
01.	Backup and Recovery	1
02.	Data Communication	3
03.	Distributed Processing Functions	3
04.	Is Performance Critical?	4
05.	Existing Operating Environment	3
06.	On-line Data Entry	3
07.	Input Transaction built over Multiple Screens	2
08.	Master Files updated On-line	3
09.	Complexity of Inputs, Outputs, Files, Inquiries	3
10.	Complexity of Processing	3
11.	Code Design for Reuse	2
12.	Are Conversion/Installation included in Design?	1
13.	Multiple Installations	2
14.	Application Designed to Facilitate Change by the User	3
TOTAL		36

$$\text{CAF} = 0.65 + (0.01 \times 36) = 1.01$$

Adjusted Function Point Count:

$$\text{AFPC} = \text{UFPC} \times \text{CAF} = 30 \times 1.01 = 30$$

$$\text{AFPC} = 30$$

Timeline

FPs per person per week = 3

$$\text{Estimated Time} = 30 / (3 \times 10) = 1 \text{ Week}$$

Total Estimated FPs:

$$\text{Function Points} = 30 + 53 + 26 + 36 + 51 + 30 = 226$$

Total Estimated Time:

$$\text{Total Time} = 1 + 2 + 1 + 1 + 2 + 1 = 8 \text{ Weeks}$$