

Function Point Analysis: Kirana (Bazaar App)

Project Overview

This document provides a Function Point Analysis (FPA) for Kirana (Bazaar App), a mobile-first web application that combines a privacy-focused chat service with a hyper-local marketplace. The analysis breaks down the application's functionality into measurable units to estimate its size and complexity.

Function Point Identification

The functions are categorized into five types:

- **External Inputs (EI):** Processes that handle data entering in the application from an external source (e.g., a user filling out a form).
- **External Outputs (EO):** Processes that send data out of the application (e.g., generating a report or notification).
- **External Inquiries (EQ):** Processes that involve a user request for specific data from the application, which is then retrieved and displayed.
- **Internal Logical Files (ILF):** Logically related groups of data maintained within the application (e.g., a "Users" table in a database).
- **External Interface Files (EIF):** Data referenced by the application but maintained by another system (e.g., using an external map API).

Function Name	Type	Description	Complexity
User Registration	EI	User submits registration details (phone/email, password).	Average
User Login	EI	User submits login credentials for authentication.	Simple
Send Chat Message	EI	User types and sends a text or media message to another user.	Average
Edit Chat Message	EI	User modifies the content of a previously sent message within 30 mins.	Complex
Update Privacy Settings	EI	User changes their settings for online status, read receipts, etc.	Average
Create Seller Profile	EI	A seller submits their shop details, location, and images to create a profile.	Average
Submit Seller Review	EI	A buyer submits a rating and a text review for a seller.	Average

Display Chat Conversation	EO	The app presents the history of messages between two users.	Simple
Show Read Receipt	EO	The app shows a confirmation that a message has been read (if enabled).	Simple
Show Typing Indicator	EO	The system displays a real-time indicator that the other user is typing.	Average
Display Seller Profile	EO	The app formats and displays a seller's complete profile to a buyer.	Simple
Share Seller/Product Link	EO	The app generates and outputs a unique link to a seller or product to be shared.	Average
Search for Sellers by Location	EQ	User requests a list of sellers, which the system retrieves based on location.	Complex
View Seller Reviews	EQ	User requests to see all reviews for a specific seller.	Simple
Users	ILF	A Data Base Table holding all user account information and their settings.	Average

Messages	ILF	A Data Base Table storing all chat messages, including content, sender, and status.	Complex
Sellers	ILF	A Data Base Table containing all seller profile information, including verification status.	Complex
Reviews	ILF	A Data Base Table that stores all user-submitted reviews and ratings for sellers.	Average
Geolocation Service	EIF	The app interfaces with an external service (e.g., Google Maps API) to handle location data for seller discovery.	Complex

Complexity Grading Criteria

Function Type	Simple	Average	Complex
EI	3	4	6
EO	4	5	7
EQ	3	4	6
ILF	7	10	15
EIF	5	7	10

Function Type	Complexity	Count	Weight	Sub Total
EI	Simple	1	3	3
	Average	5	4	20
	Complex	1	6	6
EO	Simple	3	4	12
	Average	2	5	10
	Complex	0	7	0
EQ	Simple	1	3	3
	Average	0	4	0
	Complex	1	6	6
ILF	Simple	0	7	0
	Average	2	10	20
	Complex	2	15	30
EIF	Simple	0	5	0
	Average	0	7	0
	Complex	1	10	10
Total Unadjusted FP				120

Group	Function Points in Group	Adjusted LOC / FP Ratio	Estimated LOC
Backend (EI + ILF)	79 (29 + 50)	20	1,580
Frontend (EO + EQ)	31 (22 + 9)	45	1,395
Mixed (EIF)	10	30	300
Total	120 UFP		3,275

Estimated Lines of Code = **3.3 KLOC**

Realistic estimated = **5 KLOC**

Since the project type is **Organic**, we will use its respective constant values:

Effort Estimation: $2.4 \times 5^{1.05} = 13$ **Person Months**

Duration Estimation: $2.5 \times 13^{0.38} = 6.6$ **Months**

Staff Estimation: $13 / 6.6 = 1.9 \sim 2$ **Persons**

Considering we have 5 team members, the duration can be further adjusted:

$13 / 5 = 2.6 \sim 3$ **Months**