Function Point Analysis

External Inputs (EI)

- Authentication (User/Customer)
- Login (User/Customer)
- SignUp (User/Customer)
- Profile (User/Customer)
- View/Edit Profile Information (User/Customer)
- Authentication (Admin)
- Login (Admin)
- SignUp (Admin)
- Product Management (Admin)
- Add, Edit, Delete Product Listings (Admin)
- Authentication (Retailers)
- Product Management (Retailers)
- Edit profile (Retailers)
- View Cart Contents (Cart)
- Remove Items from Cart (Cart)
- Add Items to Cart (Cart)
- View Order History (Order Management)
- Generate Invoices (Order Management)
- Search for Products within the platform (Search Option)

Total External Inputs (EI): 19

External Outputs (EO)

- View/Edit Profile Information (User/Customer)
- Add, Edit, Delete Product Listings (Admin)
- Edit profile (Retailers)
- View Cart Contents (Cart)
- View Order History (Order Management)
- Generate Invoices (Order Management)

Total External Outputs (EO): 6

Logical Internal Files (ILF)

- Profile Information (User/Customer)
- Product Listings (Admin)
- Retailer Profile Information (Retailers)
- Cart Contents (Cart)
- Order History (Order Management)
- Invoices (Order Management)

Total Logical Internal Files (ILF): 6

External Interface Files (EIF)

None identified in the provided project description.

External Inquiries (EQ)

None identified in the provided project description.

Given the breakdown of function points, we can now calculate the Unadjusted Function Points (UFP) and proceed with the analysis as outlined in the document. Since no External Interface Files (EIF) or External Inquiries (EQ) are identified, we'll proceed with the calculation based on the identified External Inputs (EI), External Outputs (EO), and Logical Internal Files (ILF). Let's continue with the calculation.

To calculate the Unadjusted Function Points (UFP), we'll use the weighted sum formula mentioned in the document:

$$UFP = \sum_{i=1}^{5} \sum_{j=1}^{3} (w_{ij} \times C_{ij})$$

Where:

- w_{ij} represents the entry in the ith row and jth column of the table.
- C_{ij} represents the count of the number of elements of type i that have been classified as having the complexity corresponding to column j.

Let's use the provided table for Function Point contribution of an element:

Function Type	Simple	Average	Complex
External Input	3	4	7
External Output	4	5	10
Logical Internal File	7	10	15

Now, we'll classify each identified element as simple, average, or complex based on its description, and then calculate the Unadjusted Function Points (UFP). Let's proceed with the calculation.

Classifying Elements:

External Inputs (EI):

- Simple: Authentication (User/Customer), Login (User/Customer), SignUp (User/Customer), Authentication (Admin), Login (Admin), SignUp (Admin), Authentication (Retailers)
- Average: Profile (User/Customer), Product Management (Admin), Edit profile (Retailers), View Cart Contents (Cart), Remove Items from Cart (Cart), Add Items to Cart (Cart), View Order History (Order Management), Generate Invoices (Order Management), Search for Products within the platform

External Outputs (EO):

- Simple: None

- Average: View/Edit Profile Information (User/Customer), Add, Edit, Delete Product Listings (Admin), Edit profile (Retailers), View Cart Contents (Cart), View Order History (Order Management), Generate Invoices (Order Management)

Logical Internal Files (ILF):

- Simple: None
- Average: Profile Information (User/Customer), Product Listings (Admin), Retailer

  Profile Information (Retailers), Cart Contents (Cart), Order History (Order Management), Invoices (Order Management)

Calculating Unadjusted Function Points (UFP):

$$UFP = (3 \times 7) + (4 \times 9) + (7 \times 6) = 21 + 36 + 42 = 99$$

Result:
Unadjusted Function Points (UFP): 99