



IT314 Software Engineering

Group 25

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LAB - 4

1. Tools and Technologies:

- 1) **Frontend:** We are planning to use HTML, CSS, Bootstrap and JS for the frontend development.
- 2) **Backend:** We are planning to use Django as backend. In order to connect django with the database, we will be using libraries such as django, pymongo.
- 3) **Database:** We are planning to use No SQL database and specifically MongoDB as No SQL databases are more scalable and easy to manage compared to relational databases when the queries becomes large and complex.
- 4) **Deployment:** We are planning to use Azure as it is highly scalable, available and secure for deploying web applications.
- 5) **IDE:** We are planning to use VS code as our code editor as it is very convenient to integrate with github copilot.

2. Effort estimation using Function Point:

External Input:

- Farmer Registration
- Warehouse Registration
- Farmer Login
- Warehouse Login
- Reserve the storage space.
- Update warehouse capacity
- Enter new crop information
- Update/Cancel the reservation for the storage space

External Output:

- Reports of the current warehouse capacity
- Reports about the current goods stored in the warehouse with their details
- Alert when the crops are nearing their storage life
- View the reservation history.

- Receive alerts when the crop approaches storage life limit.
- Reports about goods stored and

Number of external inquiries (EQ)

- Locate nearest warehouses.

Internal Files / Databases:

- Farmer details
- Warehouse details
- Crop details
- Reservation details
- Find nearest warehouse

Number of external interfaces:

- We are not accessing any external databases

Sr No.	Measurement parameters	Average Weight	Count	Weighing factor
1	Number of external inputs (EI)	4	8	32
2	Number of external outputs (EO)	7	6	42
3	Number of external inquiries (EQ)	4	1	4
4	Number of internal files (ILF)	7	4	28
5	Number of external interfaces (EIF)	7	0	0
	Count Total			106

Reference table for computing FPs:

Measurement Parameter	Count		Weighing factor			
			Simple Average Complex			
1. Number of external inputs (EI)	—	*	3	4	6 =	—
2. Number of external Output (EO)	—	*	4	5	7 =	—
3. Number of external Inquiries (EQ)	—	*	3	4	6 =	—
4. Number of internal Files (ILF)	—	*	7	10	15 =	—
5. Number of external interfaces(EIF)	—	*	5	7	10 =	—
Count-total →						

Calculation of $\sum(f_i)$:

Sr. No.	Questions	Rating
1	Does the system require reliable backup and recovery ?	5
2	Are data communications required?	5
3	Are there distributed processing functions?	3
4	Is performance critical?	4
5	Will the system run in an existing, heavily utilized operational environment?	3
6	Does the system require on-line data entry?	4
7	Does the on-line data entry require the input transaction to be built over multiple screens or operations?	3
8	Are the master files updated on-line?	3
9	Are the inputs, outputs, files or inquiries complex?	4

10	Is the internal processing complex?	4
11	Is the code to be designed reusable?	4
12	Are conversion and installation included in the design?	2
13	Is the system designed for multiple installations in different organizations?	0
14	Is the application designed to facilitate change and ease of use by the user?	4
	$\Sigma(f_i)$	48

$$FP = \text{Count-total} * [0.65 + 0.01 * \Sigma(f_i)]$$

$$FP = 106 * [0.65 + 0.01 * 48]$$

$$FP = 119.78$$