Case Tools Lab assignment

197157 – CSE A

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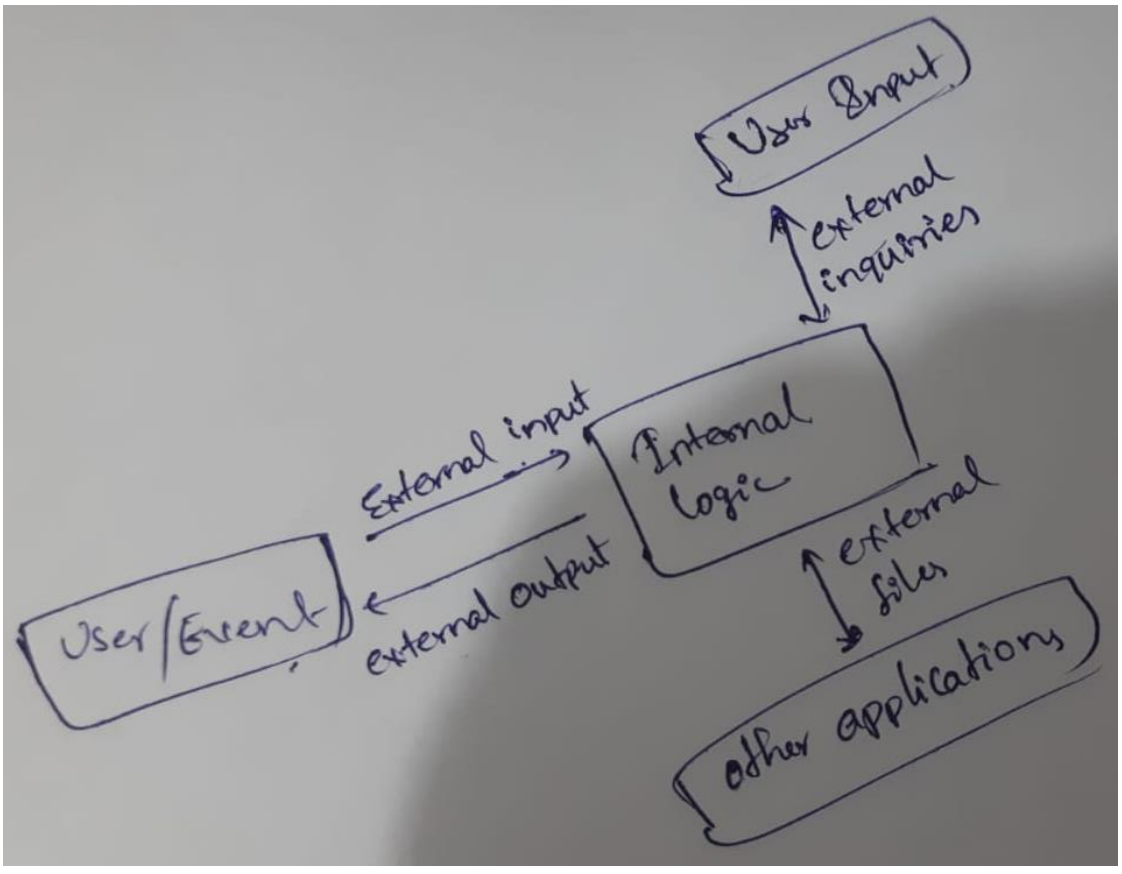
1. Function Point Metric
2. Use Case point Metric

1. Function point metrics

   Function point metric can be used effectively as a means for measuring the functionality delivered by a system

Function point components:



1. External Inputs:
    a. Username
    b. Password
    c. Email
    d. Login/Logout
    e. Choose a seller/Buyer
    f. Product Details
    g. Select Category
    h. Item to search
2. External Outputs:
    a. Dashboard
    b. Available items
    c. Order Items
3. External Inquiries:
    a. Display the filtered items
    b. Search items based on filter search
4. Internal Logic:
    a. Login Page
5. External Logic:
    a. Database

Information Domain Value	**Count**	**Weight Factor**	**Count Total**
External Input	8	Avg: 4	32
External Output	3	Avg: 5	15
Inquiries	2	Avg: 4	8
Internal Logic	1	Simple: 7	7
External Interface	1	Complex: 10	10

Unadjusted Function points = 72

Value Adjustment Factors:

VAF	Value
F1- Data Communication	4
F3- Performance	4
F5- Transaction Role	3
F6- Online Data Entry	4
F7- EndUser Efficiency	4
F8- Online Update	3
F10- Reusability	4
F12- Operational Ease	3
F13- Multiple sites	3

Project Adjustment Factor = 32

Function Point:

FP = CountTotal x (0.65+0.01 x VAF)

= 72 x (0.65 + 0.32)

FP = 69.84

2. Use Case Point Metric:

Use case points is a software estimation technique used to forecast the software size for software development projects

1. Unadjusted UseCase Weight

Use Case Classification	**No of Transactions**	**Weight**
Simple	1 – 3	5
Average	4 – 7	10
Complex	8+	15

Use Case	**Transactions**	**Classification**
Order an item	10	Complex-15
Modify the item	10	Complex-15
Cancel the order	10	Complex-15
Upload product and details	7	Average-10
Modify uploaded product details	7	Average-10
Cancel Product uploaded	8	Complex-15
Display all available items	6	Average-10
Update server	4	Average-10

UUCW = (TOTAL SIMPLE USE CASES*5) + (AVERAGE USECASES*10)

+ (COMPLEX USE CASES * 15)

= (0 x 5) + (4 x 10) + (4 x 15)

= 100

2. Unadjusted Actor Weight:

Actor	**Type of Actor**	**Weight**
Simple	External system that must interact with the system using well defined API calls	1
Average	Using standard communication protocols within databases and the server and the clients	2
Complex	Human actor using a GUI application to solve the issue	3

Actor	**Type**	**Weight**
Buyer	Average	2
Seller	Complex	3
Server/Manager	Average	2

UAW = (total simple actors*1) + (avg. actors*2) + (complex*3)

= (0 x 1) + (2 x 2) + (1 x 3)

= 7

3. Technical Complexity Factor

Factor	**Weight**	**Assigned Value**	**Weight*Assigned Value**
T1	2	3	6
T2	1	5	5
T3	1	4	4
T4	1	3	3
T5	1	3	3
T6	0.5	5	2.5
T7	0.5	5	2.5
T8	2	5	10
T9	1	3	3
T10	1	2	2
T11	1	3	3
T12	1	1	1
T13	1	1	1

Total = 46

Technical complexity = 0.6 + (TF/100)

= 0.6 + 0.46 = 1.06

4. Environmental Complexity Factor

Factor	**Weight**	**Assigned Value**	**Weight * value**
E1	1.5	3	4.5
E2	0.5	3	1.5
E3	1.0	3	3
E4	0.5	2	1
E5	1.0	3	3
E6	2.0	4	8
E7	-1.0	0	0
E8	-1.0	4	-4

Total = 17

ECF = 1.4 + (-0.03 x EF)

= 1.4-0.03(17) = 0.89

Use Case Point:

UCP = (UUCW + UAW) x TCF x ECF

= (100+7) x 1.06 x 0.89

= 100.94

If 26 man house per use case point will be used

Estimated effort = UCP x Hours/UCP

= 100.94 x 26

= 2624 Hours