Software Engineering Lab -3

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Q1) Programmer capability = low (1.17)

For high level Programming language experience = high (0.95)

Effort = EAF * c * (size)^k

= (1.17 * 0.95) * 2.8 * (100)^1.20

= 781.75 person - months (Ans.)

Development Time = 2.5*(Effort)^exponent

= 2.5*(781.75)^0.32

= 21.07 months (Ans.)

Q2) ATQ, 4 major modules are:

Data Entry = 0.6 KLOC,

Data Update = 0.6 KLOC,

Query = 0.8 KLOC,

Reports = 1.0 KLOC .

Thus, Total = 4.0 KLOC

Various cost drivers are :

Value for high complexity= 1.15

Value for high storage= 1.06

Value for low experience= 1.13

Value for low programmer capability= 1.17

EAF = 1.15 * 1.06 * 1.13 * 1.17 = 1.61

Final Effort = EAF * c * (size)^k

= 1.61 * 2.8 * (3)^1.20

= 16.85 Person – Months

Development Time = 2.5*(Effort)^exponent

= 2.5 *(16.85)^0.32

= 6.17 Months

Average staff size = 16.85 Person-Months / 6.17 Months = 2.7 ~ 3 Persons (Ans.)

Q.3)

```
#include<bits/stdc++.h>

using namespace std;

int main()

{

	int m, n;

cout << " What is the type of software? " << endl << "organic:1; semi-detached:2; embedded:3 " << endl;

	cin >> m;

	double arr[3][4] = {{3.2, 1.05, 0.38}, {3.0, 1.12, 0.35}, {2.8, 1.20, 0.32}};

	cout << " Enter no of major modules: " << endl;

	cin >> n;

	double loc[n] = {0};

	double finalloc;

	cout << " Enter KLOC of every major modules: " << endl;

	for (int i = 0; i < n; i++) {

		cin >> loc[i] ;

		finalloc += loc[i];

	}

	cout << "Cost driver attribute values of complexity,storage,experience and programmer_capability are respectively :" << endl;

	cout << "1.15, 1.06, 1.13, 1.17" << endl;


	double eaf, effort, development_time, staff_size = 0;

	eaf = 1.15 * 1.06 * 1.13 * 1.17 ;

	effort = eaf * (arr[m - 1][0]) * (pow(finalloc, arr[m - 1][1]));

	development_time = 2.5 * ((pow(effort, arr[m - 1][2]))) ;
```

```
    staff_size = ceil((effort / development_time));
    cout << "The values are: " << endl;
    cout << "Effort:"<<effort << endl ;
    cout<< "Dev. Time:"<<development_time << endl;
    cout << "Staff Size:"<<staff_size << endl;

    return 0 ;
}
```