**CSIS 3275 - 071**

**SOFTWARE ENGINEERING**

**Assignment 1**

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**Question 1.**

Given the functional decomposition and the LOC of the robot software as follows:

• user interaction (2400 LOC)

• sensor monitoring (1100 LOC)

• message display (850 LOC)

• system configuration (1200 LOC)

• system control [activation/deactivation] (900 LOC)

Assuming that your organization produces 450 LOC/pm with a burdened labor rate of $7,000 per person-month, estimate the effort and cost required to build the software using the LOC-based estimation technique. [Show your steps. Grading is done based on the steps and accuracy.]

**Solution :**

Total count of Line of Code will be sum of all given estimated LOC.

Total LOC = user interaction (2400 LOC) + sensor monitoring (1100 LOC) + message display (850 LOC)+ system configuration (1200 LOC) + system control [activation/deactivation] (900 LOC)

Total LOC = 6450

Let’s take Average Productivity as X , So X = 450 LOC/pm

Lets’ take Labour Rate as Y, So Y = $ 7000

* Cost per Line of Code will be = Labour Rate /Average Productivity

i.e Cost per Line of Code = Y/X = 7000/450

On putting Values of X and Y , Cost per Line of Code = $ 16 (approx.).

Assume Cost per Line of Code as Z for later.

* Total Estimated Project Cost will be Total LOC multiplied by Cost per Line of Code

i.e 6450 \* 16 = $ 103200

* Total Estimated Efforts would be Total LOC divided by Average Productivity

i.e 6450 / 450 = 15 person-month (approx.)

**Question 2.**

**Diagram

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