## Project Requirements

### Project Estimation

COCOMO (Constructive Cost Model) is a software cost estimation model that uses the size of the project, the team size, and other factors to estimate the effort required to develop software. There are three versions of COCOMO: Basic, Intermediate, and Advanced. Here, I will use the Intermediate version as it is the most commonly used one.

To use COCOMO, we first need to calculate the size of the project in terms of lines of code. In this case, the project has 6000 lines of code.

Next, we need to calculate the effort required to develop the software. For this, we will use the formula:

Effort = a \* (Size)^b \* c

where a, b, and c are constants that depend on the project and the development team. For the Intermediate version of COCOMO, these constants are:

a = 3.0

b = 1.12

c = 2.5

Using these constants and the project size of 6000 lines of code, we can calculate the effort required as:

Effort = 3.0 \* (6000)^1.12 \* 2.5

Effort = 45.6 person-months

This means that the project will require 45.6 person-months of effort to complete.

Finally, we can calculate the duration of the project based on the team size. For this, we will use the formula:

Duration = d \* (Effort)^e

where d and e are constants that depend on the project and the development team. For the Intermediate version of COCOMO, these constants are:

d = 2.5

e = 0.32

We are a team size of 4 people, we can calculate the project duration as:

Duration = 2.5 \* (45.6/4)^0.32

Duration = 10.4 ~ 11 months

Therefore, using COCOMO, we estimate that the project will require 45.6 person-months of effort and will take approximately 10.4 ~ 11 months to complete with a team size of 4 people.

**Cost:**

Labour cost = 4 \* 25,000 = 100,000/= Taka

(Approximately) Service cost = 5000\*4 =20000/=

so, In total 100,000+20000 = 120,000/= Taka (Approximately) or

=$1131.26(Approximately)

**Budget Estimation:**

4 developers and/or engineers working of 11 months:

Duration in weeks = 37 weeks

Office days = 5 days

Working hours = 8 Hours

So, per week working hours is = (5\*8) hours = 40 hours

Hence, Total Working hours is = (40\*37) hours

= 1480 hours.

All Developer salary is = 800 BDT Per Hour

Total developers Salary = (800\*1480) BDT

= 11,84,000 BDT