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LAB 10: COST ESTIMATION

COCOMO 2 (Constructive Cost Model 2) is an extension of the original COCOMO model, which stands for Constructive Cost Model. COCOMO 2 is a widely used software cost estimation model that helps project managers and software developers estimate the effort, time, and cost required to develop a software project. It was developed by Barry Boehm in the late 1990s as an improvement over the original COCOMO model.

Effort = a × (KLOC)b ,
unit=person-months

Development Time = c × (Effort)d ,
unit=months

Average Staff Size = (Effort) / (Development Time),
unit=persons

Mode	a	b	c	d
organic	2.4	1.05	2.5	0.38
semi-detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

1. **Organic Project**

   A project is an organic project if the number of lines of code lie between 2 KLOC to 50 KLOC.

   Let no. of lines of code = 20 KLOC

   Effort = 2.4× (20)* 1.05
   = 50.4 person-months

   Development Time = 2.5 × (50.4)*0.38
   = 47.88 months

   Average Staff Size = (50.4) / (47.88),
   = 1.05 persons

2. **Semi-detached Projects**

   A project is an organic project if the number of lines of code lie between 50 KLOC to 300 KLOC.

   Let no. of lines of code = 180 KLOC

   Effort = 3.0× (180)* 1.12
   = 604.8 person-months

   Development Time = 2.5 × (604.8)*0.35
   = 529.2 months

   Average Staff Size = (604.8) / (529.2),
   = 1.14 persons

3. **Embedded Projects**

   A project is an organic project if the number of lines of code are above 300 KLOC.

   Let no. of lines of code = 450 KLOC

   Effort =3.6× (450)* 1.20
   = 1944 person-months

Development Time = 2.5 × (1944)*0.32
= 1555.2 months

Average Staff Size = (1944) / (1555.2),
= 1.25 persons