**Tutorial 5**

**Given Information:**

* **Planned Value (PV)** = $23,000
* **Earned Value (EV)** = $20,000
* **Actual Cost (AC)** = $25,000
* **Budget at Completion (BAC)** = $120,000

**A. Calculations:**

1. **Cost Variance (CV)**:

CV = EV – AC = 20,000 − 25,000 = −5,000

The cost variance is **-5,000**.

1. **Schedule Variance (SV)**:

SV = EV – PV = 20,000 − 23,000 = −3,000

The schedule variance is **-3,000**.

1. **Cost Performance Index (CPI)**:

CPI = EV / AC = 20,000 / 25,000 = 0.8

The CPI is **0.8**.

1. **Schedule Performance Index (SPI)**:

SPI = EV / PV = 20,000 / 23,000 ≈ 0.87

The SPI is approximately **0.87**.

**B. Project Status:**

* **Schedule**: The project is **behind schedule** because the schedule variance (SV) is negative, and the SPI is less than 1.
* **Budget**: The project is **over budget** because the cost variance (CV) is negative, and the CPI is less than 1.

**C. Estimate at Completion (EAC) Using CPI:**

EAC = BAC / CPI = 120,000 / 0.8=150,000

The **EAC** is **$150,000**, indicating that the project is performing worse than planned since the estimate exceeds the original budget of $120,000.

**D. Estimated Project Duration Using SPI:**

Estimated Duration = Planned Duration / SPI = 12/0.87 ≈13.79

It will take approximately **13.79 months** to finish the project, meaning the project is delayed by about **1.79 months**.

**Summary:**

* The project is **behind schedule** (SV = -3,000, SPI = 0.87).
* It is **over budget** (CV = -5,000, CPI = 0.8).
* The **EAC** is $150,000, exceeding the initial budget of $120,000.
* The project is estimated to take **13.79 months** to complete instead of the planned 12 months.