

# Project Planning & Control

## *Duration Estimation, Network Representation & Analysis -1*

### *Week 3*

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# Project Planning & Control

## *Lesson 1*

### *Duration Estimation - Types, Inputs, Methods, Parametric Estimation*

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# Learning Objectives

- Methods to Estimate Activity Duration
- Examples on parametric methods
- Applicability of different methods

# Why Duration Estimation?

- Top-Down approach - based on estimating parameters of leaf elements. (Recall WBS)
- Project duration depends on duration of constituent activities.
- Estimating intermediate milestone
- Resource requirements for the activity



# 6.4 Activity Duration Estimating

- 6.4.1 INPUTS

- Enterprise Environmental factors
- Organizational Process Assets
- Project Scope Statement
- Activity List
- Activity Attributes
- Activity resource requirements
- Resource calendars
- Project Management Plan
  - Risk Register
  - Activity Cost estimates



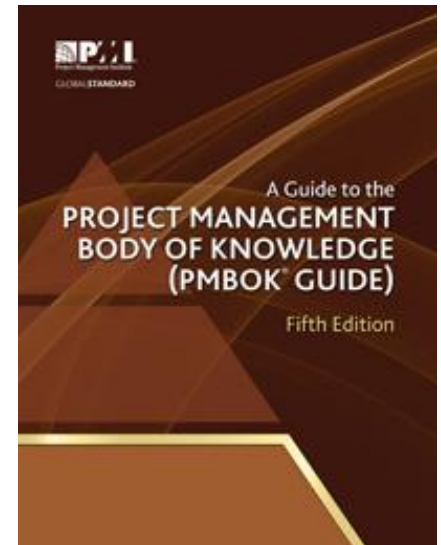
# 6.4 Activity Duration Estimating

## 6.4.2 Tools & Techniques

- Expert Judgment (Heuristic)
- Analogous Estimating (Data + Heuristic)
- **Parametric estimating**
- Three Point Estimate (Uncertainty)
- Reserve analysis (Buffer)

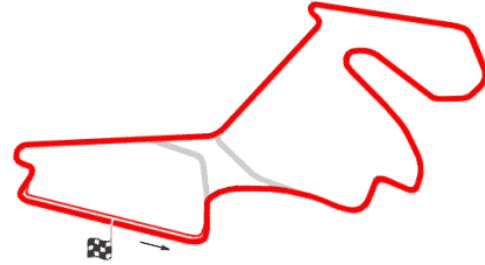
## 6.4.3 Outputs

- Activity duration estimates
- Activity attributes



# Parametric Estimating

*Simple example....*



Total Distance = 300Km

Determine duration to cover distance:

Speed = 100 Km /Hr | 150 Km/Hr | 60Km/Hr

Duration = 3 Hr | 2 Hr | 5 Hrs

is speed constant ? What influences speed ?

# Parametric Estimating

## *Activity Duration*



Total Quantity of Work = 300sqm

Determine duration to complete activity:

Prod. Rate    10 sqm/day    |    20 sqm/day    |    30 sqm/day

Duration =    30 days            |    15 days            |    10 days

Is production rate constant ?

What influences production rate ?