Software Project Management Formulas

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Forward Pass

ES = EF of the predecessor node

EF = ES + Du

Backward Pass

LF = LS of the Successor

LS = LF – Du

ES	Du	EF
	Node	
LS	Float	LF

Slack = LF – EF = LS – ES

Free Float = ES(Successor) - EF(Predecessor)

Q U A L I T Y

$$PERT = \frac{O + 4ML + P}{6}$$

O = Optimistic
P = Pessimistic
ML = Most Likely

MEAN → Average

MODE → The "most found" number

RANGE → Largest - Smallest Measure.

MEDIUM → No in the middle or avg. of 2 middle Nos

$$STD.\ DEV.\ OF\ TASK = \frac{P - O}{6}$$

$$TASK\ VAR. = \left(\frac{(P - O)}{6}\right)^2 = Std.\ Dev\ ^\wedge\ 2$$

$$CP\ STD.\ DEV. = \sqrt{\sigma^2 + \sigma^2 + \sigma^2}$$

Channels of Communication

$COMM = (N^2 - N) / 2 = (N \times (N - 1)) / 2$

P R O J E C T S E L E C T I O N

$$NPV = \Sigma \left(\frac{PV}{(1+r)^n} + \frac{PV}{(1+r)^n} + \frac{PV}{(1+r)^n} + \frac{PV}{(1+r)^n} \right)$$

Cash Flow = Cash Inflow – Cash Outflow

Discounted Cash Flow = CF x Discount Factor

ARR = Σ Cash Flow / No. of Years

ROI = (ARR / Investment) * 100 %

BCR (Benefit Cost Ratio) = Benefits / Cost

E A R N E D V A L U E A N A L Y S I S

PV (Present Value) = BCWS (Budgeted Cost of Work Schedule)

EV (Earned Value) = BCWP (Budgeted Cost of Work Performed)

AC (Actual Cost) = ACWP (Actual Cost of Work Performed)

CV = EV – AC

CPI = EV / AC (efficiency)

SV = EV – PV

SPI = EV / PV

ETC = BAC – EV or (BAC – EV) / CPI

EAC = AC + ETC

EAC = BAC / CPI

VAC = BAC – EAC

% COMPLETE = EV / BAC x 100

% SPENT = AC / BAC x 100

CV% = AC / EV x 100

SV% = AC / PV x 100