

Tugas Project 3

Dikumpul 03/11/14

Laporan berisi:

- * Data lapangan
- * Analisis perancangan simulasi
- * Skenario

⇒ Pengisian sampai penuh → pelampung bekerja
 ⇒ Pengisian sampai 100% → pompa padam
 (buka tutup keran)

Pelampung

Input (level) 0 s.d 120
 output (tanda) tutup & buka
 0 ... 1
 level ≥ 115 cm → output = 0
 level ≤ 110 → output = 1



DELAY dan LAGGING

Delay (waktu tunggu)
 $x(t) \rightarrow y(t) = x(t-d)$

Lagging
 $x(t) \rightarrow y(t) = x(t) \cdot e^{-\lambda t}$

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$y = f(x)$
 if $x \leq 110$
 $y = 1$
 elseif $x \geq 115$
 $y = 0$
 else
 $y = -\frac{1}{5}x + 23$
 end

RELAY: output (1/2 strike)

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Volume [liter] to Level [cm] $1l = 1000 \text{ cm}^3$



Volume = $\pi \left(\frac{D}{2}\right)^2 \cdot h \text{ cm}^3$

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$$1000V = \pi \left(\frac{D}{2}\right)^2 \cdot h$$

$$h = \frac{4000V}{\pi D^2} \text{ [cm]}$$

Project 2

* Persewaan lapangan

- Den motor & den h & den t & den f
- Den lapangan: d1 & den d2 (lobang den polisi tidur)
- M = Massa motor + bahan pengendaraan

Pilih kecepatan motor 5 km/jam < v < 15 km/jam

(1) D4111ABC → B = A, B, C N sec/m

(2) D4111XYZ → K = X, Y, Z N/m

* Percobaan kombinasi

B tetap & K = XYZ N/m dan K = 0,0 XYZ N/m

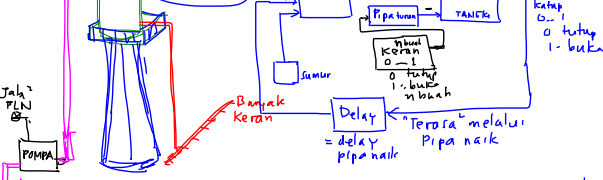
K tetap & B = ABC N sec/m dan B = 0,0 ABC N sec/m

* Carilah kombinasi B dan K yang paling "realistik" (cocok dengan keadaan sebenarnya)

Project 3 MENARA AIR

Dikumpul 23/10/2014

03/11/2014



Data Lapangan

* Volume dan diameter/tinggi tangki

* Debit pompa → liter/sec.
 (nyatakan pompa dari tangki/kran sampai penuh)

Misalnya: 1100 liter dalam 45 menit

$$\text{Debit} = \frac{1100 \text{ liter}}{45 \times 60 \text{ sec}} = \dots$$

* Debit Keran: isi botol: 1 liter berapa seconds!

* Delay: ⇒ Pipa naik: start pompa DENYAR! sampai air tiba di atas tangki

⇒ Pipa turun ≈ 1/2 delay pipa naik