

SOEN 331 Assignment 3
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safe_room specification

$Q = \{ \text{dormant, init, idle, monitoring, error_diagnosis, safe_shutdown} \}$

$q_0 = \text{dormant}$

$\Sigma_1 = \{ \text{start, init_crash, init_ok, begin_monitoring, idle_crash, monitor_crash, moni_rescue, idle_rescue, retry_init, shutdown, sleep} \}$

$\Sigma_2 = \{ \text{broadcast init_err_msg, num_tries++}, \text{broadcast idle_err_msg, broadcast moni_err_msg} \}$

$\Lambda = \{$

dormant $\xrightarrow{\text{start}}$ init,

init $\xrightarrow{\text{init_ok}}$ idle,

init $\xrightarrow{\text{init_crash/ broadcast init_err_msg;}}$ error_diagnosis,

idle $\xrightarrow{\text{begin_monitoring}}$ monitoring,

idle $\xrightarrow{\text{idle_crash/ broadcast idle_err_msg;}}$ error_diagnosis,

monitoring $\xrightarrow{\text{monitor_crash [inlockdown = false]/ broadcast moni_err_msg;}}$ error_diagnosis,

error_diagnosis $\xrightarrow{\text{retry_init [num_tries < 3]/ num_tries++;}}$ init,

error_diagnosis $\xrightarrow{\text{idle_rescue}}$ idle,

error_diagnosis $\xrightarrow{\text{moni_rescue}}$ monitoring,

error_diagnosis $\xrightarrow{\text{shutdown [num_tries = 3]}}$ safe_shutdown,

}

$V = \{ \text{num_tries, inlockdown} \{ \text{true, false} \} \}$