

=====QUESTION=====

Consider a factory that manufactures football taking 20 to 40 minutes. The ball is moved from the generation to the inspection machine taking a 2 minutes. There are 3 inspection machine at one place and need 30 to 60 minutes for inspection and reject 30% of football. Simulate for 2000 transaction . Draw GPSS block diagram to simulate this system.

solution:

Here, Manufacture of football takes 20 to 40 minutes so,

$$\text{mean} = (20+40)/2 = 30$$

$$\text{Generate} = 30 \pm 10$$

product take 2 minutes to reach for inspection i.e. ADVANCE = 2, and for inspection it take 30 to 60 minutes,

$$\text{mean} = (30+60)/2 = 45$$

$$\text{ADVANCE} = 45 \pm 15$$

=====GPSS CODE=====

GENERATE 30,10	; Create parts
ADVANCE 2,0	; To Inspect
SEIZE Barber	; Get an Inspector
ADVANCE 45,15	; Inspect
RELEASE Barber	; Free Inspector
TRANSFER 0.3,ACC,REJ	; Select Reject
ACC TERMINATE 1	; Accepted parts
REJ TERMINATE 1	; Rejected parts
START 2000	; Run 2000 parts

=====result=====

GPSS World Simulation Report - Untitled Model 7.13.1

Sunday, June 30, 2024 12:29:21

START TIME	END TIME	BLOCKS	FACILITIES	STORAGES
0.000	90361.371	8	1	0

NAME	VALUE
ACC	7.000
BARBER	10000.000
REJ	8.000

LABEL	LOC	BLOCK TYPE	ENTRY COUNT	CURRENT COUNT	RETRY
	1	GENERATE	3026	0	0
	2	ADVANCE	3026	1025	0
	3	SEIZE	2001	1	0
	4	ADVANCE	2000	0	0
	5	RELEASE	2000	0	0
	6	TRANSFER	2000	0	0
ACC	7	TERMINATE	1414	0	0
REJ	8	TERMINATE	586	0	0

FACILITY	BARBER
ENTRIES	2001
UTIL.	1.000
AVE.	45.139
TIME AVAIL	1
OWNER	2001
PEND	0
INTER	0
RETRY	0
DELAY	1025

CEC XN	2001
PRI	0
M1	59337.041
ASSEM	2001
CURRENT	3
NEXT	4
PARAMETER	
VALUE	

FEC XN	3027
PRI	0
BDT	90388.134
ASSEM	3027
CURRENT	0
NEXT	1
PARAMETER	
VALUE	