Able-Baker Problem

- A drive-in restaurant where carhops take orders and bring food to the car.
- Assumptions
  - Cars arrive in the manner shown in Table 2.11
  - Two carhops Able and Baker- Able is better able to do the job and works a bit faster than Baker.
  - The distribution of their service times is shown in tables 2.12 and 2.13
- The problem is to analyse the system by simulating the arrival and service of 26 customers.
- **Random value for Time between Arrivals-**
  26, 98, 90, 26, 42, 74, 80, 68, 22, 48, 34, 45, 24, 34, 63, 38, 80, 42, 56, 89, 18, 51, 71, 16, 92.
- **Random value for Service Time-**
  95, 21, 51, 92, 89, 38, 13, 61, 50, 49, 39, 53, 88, 01, 81, 53, 81, 64, 01, 67, 01, 47, 75, 57, 87, 47.

Table 2.11 (Inter-arrival Distribution of Cars)

Time Between Arrivals	*Probability*	*Cumulative Probability*	*Random-Digit Assignment*
1	0.25	0.25	01-25
2	0.40	0.65	26-65
3	0.20	0.85	66-85
4	0.15	1.00	86-00

Table 2.12 (Service Distribution of Able)

Service Time	*Probability*	*Cumulative Probability*	*Random-Digit Assignment*
2	0.30	0.30	01-30
3	0.28	0.58	31-58
4	0.25	0.83	59-83
5	0.17	1.00	84-00

Table 2.13 (Service Distribution of Baker)

Service Time	*Probability*	*Cumulative Probability*	*Random-Digit Assignment*
3	0.35	0.35	01-35
4	0.25	0.60	36-60
5	0.20	0.80	61-80
6	0.20	1.00	81-00

Customer No.	Random Digits for Arrival	Time b/w arrivals	Clock Time of Arrival	Random Digits for Service	ABLE			BAKER			Time in QUEUE
					Time Service Begins	Service Time	Time Service Ends	Time Service Begins	Service Time	Time Service Ends	
1	-	-	0	95	0	5	5				0
2	26	2	2	21				2	3	5	0
3	98	4	6	51	6	3	9				0
4	90	4	10	92	10	5	15				0
5	26	2	12	89				12	6	18	0
6	42	2	14	38	15	3	18				1
7	74	3	17	13	18	2	20				1
8	80	3	20	61	20	4	24				0
9	68	3	23	50				23	4	27	0
10	22	1	24	49	24	3	27				0
11	48	2	26	39	27	3	30				1
12	34	2	28	53				28	4	32	0
13	45	2	30	88	30	5	35				0
14	24	1	31	01				32	3	35	1
15	34	2	33	81	35	4	39				2
16	63	2	35	53				35	4	39	0
17	38	2	37	81	39	4	43				2
18	80	3	40	64				40	5	45	0
19	42	2	42	01	43	2	45				1
20	56	2	44	67	45	4	49				1
21	89	4	48	01				48	3	51	0
22	18	1	49	47	49	3	52				0
23	51	2	51	75				51	5	56	0
24	71	3	54	57	54	3	57				0
25	16	1	55	87				56	6	62	1
26	92	4	59	47	59	3	62				0

						56			43		11