the activities can be executed. Where there is a choice of activities, more than one line leaves a block and the condition for the choice is stated at the block.

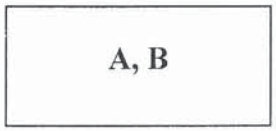
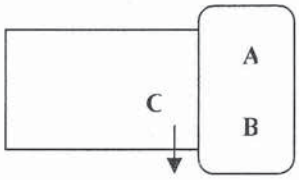
To base a programming language on this descriptive method, each block must be given a precise meaning. The approach taken in GPSS is to define a set of 48 specific *block types*, each of which represents a characteristic action of the systems. Only the specified *block types* are allowed while drawing the block diagram of the system. Each block type is given a name that is descriptive of the block action and is represented by a particular symbol. Each block type has a number of data fields.

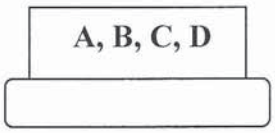
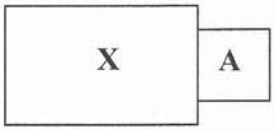
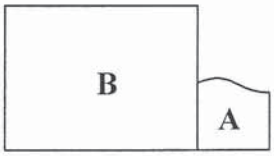
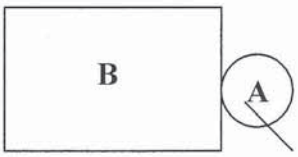
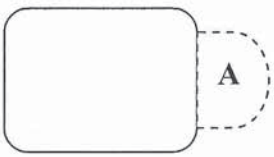
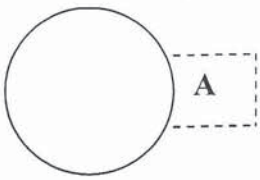
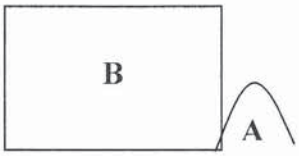
Moving through the system being simulated are entities that depend upon the nature of the system. In a communication system, the entities of concern are messages, which are moving. Meanwhile in a road transportation system the entities that are moving are the motor vehicles. A data processing system is concerned with records. In the simulation, these entities are called transactions. The sequence of events in real time is reflected in the movement of transactions from block to block in simulated time.

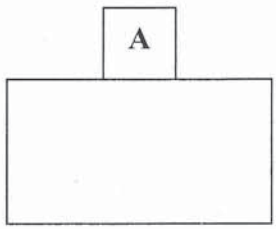
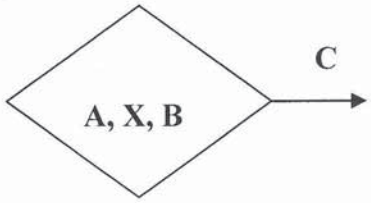
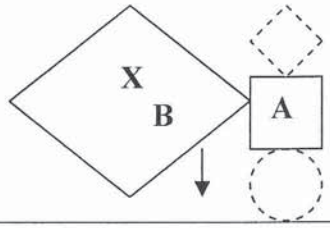
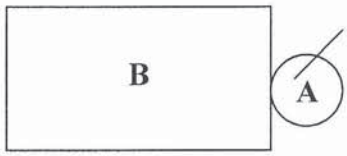
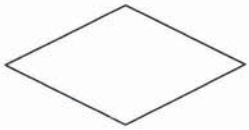
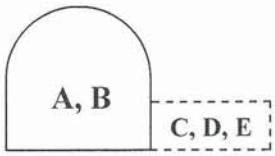
Transactions are created at one or more GENERATE blocks and are removed from the simulation at TERMINATE blocks. There can be many transactions simultaneously moving through the block diagram. Each transaction is always positioned at a block and most blocks can hold many transactions simultaneously. The transfer of a transaction from one block to another occurs instantaneously at a specific time or when some change of system condition occurs.

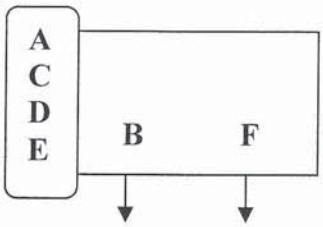
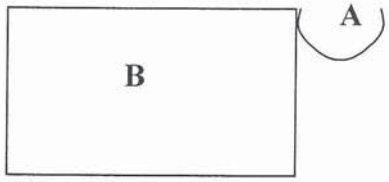
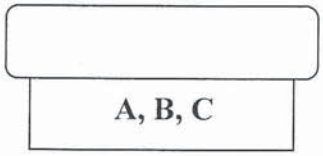
A GPSS block diagram can consist of many blocks up to some limit prescribed by the program (usually set to 1000). An identification number called a location is given to each block, and the movement of transactions is usually from one block to the block with the next highest location. The locations are assigned automatically by an assembly program within GPSS so that, when a problem is coded, the blocks are listed in sequential order. Blocks that need to be identified in the programming of problems are given a symbolic name. The assembly program will associate the name with the appropriate location. Symbolic names of blocks and other entities of the program must be from three to five non-blank characters of which the first three must be letters.

5.1.3 GPSS block-diagram symbols

S.N.	Representation/Symbols	Meaning
1		Advance
2		Link

3		Seize
4		Assign
5		Logic
6		Tabulate
7		Depart
8		Mark
9		Terminate
10		Enter

11		Priority
12		Test
13		Gate
14		Queue
15		Transfer
16		Generate

17		Release
18		Unlink
19		Leave
20		Save Value

5.2 Basic concepts

5.2.1 Action times

Clock Time is represented by tan integral number, with the interval of real time corresponding to a unit of time chosen by the program user. The unit of time is not specifically stated but is implied by giving all the time in terms of the same unit. One block type called ADVANCE is concerned with representing the expenditure of time. The program computes an interval of time called action time for each transaction as it enters an ADVANCE block, and the transaction remains at the block for this interval of simulated time before attempting to proceed. The only other block type that employs action time is the GENERATE block, which creates transactions. The action time at the GENERATE block controls the interval between successive arrivals of transactions.

The action time may be a fixed interval or a random variable, and it can be made to depend upon conditions in the system in various ways. An action time is defined by giving a mean and modifier as the A and B fields for the block. If the modifier is zero, the action time is a constant equal to the mean. If the modifier is a positive number (<=mean), the action time is an integer random variable chosen from the range (mean ± modifier), with equal probabilities given to each number in the range.