Dr. D. Y. PATIL
EDUCATIONAL FEDERATION

Theory:

Write theory of queue. (definition, concepts, types, advantages, disadvantages

Definition A queue is a linear data structure. This data structure follows a particular order in which the operations are performed. The order is first in first out (FIFO). It means that the element that is inserted first in the element that is inserted first in last will come out last.

Types of queues:

Simple queue:

Circular queue

priority queue

Explain queue as ADT. (Write pseudo code).

~~A~~ queue is a linear data structure in which the queue is a linear data structure insertion and deletion operations. are performed at two different ends. In queue data structure, adding and removing elements are performed at two different positions. The insertion is performed at one and and deletion is performed at another end.

Dr. D. Y. PATIL
EDUCATIONAL FEDERATION

Algorithm:

Step 1: Include all header file which are used in the program and define a constant 'SIZE' with specific value.

Step 2: Declare all the user defined functions which are used in queue implementation.

Step 3: declare create a one diamentional array with above defined SIZE

Step 4: Define two integer variables, 'front', and 'rear' and initialize both with '-1' (int front=-1, rear=-1)

Step 5: The implement main method by displaying menu of operations list and make suitable function calls to perform operation selected by the user on queue

enQueue(value) - Inserting value into the queue In a queue data structure, enQueue() is a function used to insert a new element is always inserted at rear position. The enQueue() function takes one integer value as parameter and inserts that value into the queue. we can use the following steps to insert an element into the queue

Step 1: check another queue is FULL (rear=SIZE-1)

Step 2: If it is FULL, then display ("Queue is FULL!!! Insertion is not possible!!!" and terminate the function.

Step 3: If it is NOT FULL, then increment rear value by one (rear++) and set queue[rear] = value

Step3 : If it is Not EMPTY then define an integer variable 'i' and set 'i' = front + 1;

Step4 : Display queue [i]. value and increment 'i' value by one (i+1) Repeat the same until (i) value is equal to rear (i<= rear)

Flowchart