#ARRAY \_IMPLEMENTATION

SIZE = 5

queue = [None] \* SIZE

front = -1

rear = -1

#Check if the queue is empty

def isEmpty():

return front == -1 or front > rear

#Check if the queue is full

def isFull():

return rear == SIZE - 1

#Insertion

def enqueue(value):

global rear, front

if isFull():

print("Queue is FULL!!! Insertion not possible!")

return

if front == -1:

front = 0

rear += 1

queue[rear] = value

print(f"Inserted {value} into queue.")

#Deletion

def dequeue():

global front, rear

if isEmpty():

print("Queue is EMPTY!!!")

return

print(f"Deleted element: {queue[front]}")

front += 1

if front > rear:

front = rear = -1

def size():

if isEmpty():

return 0

return rear - front + 1

#Display

def show():

if isEmpty():

print("Queue is EMPTY!!!")

else:

print("Queue elements are:", end=" ")

for i in range(front, rear + 1):

print(queue[i], end=" ")

print()

while True:

print("\n=== Queue Operations ===")

print("1. Enqueue")

print("2. Dequeue")

print("3. Check if Queue is Empty")

print("4. Get Queue Size")

print("5. Show Queue")

print("6. Exit")

choice = input("Enter your choice (1-6): ")

if choice == '1':

value = input("Enter the value to insert: ")

enqueue(value)

elif choice == '2':

dequeue()

elif choice == '3':

print("Queue is Empty" if isEmpty() else "Queue is NOT Empty")

elif choice == '4':

print(f"Queue size = {size()}")

elif choice == '5':

show()

elif choice == '6':

print("Exiting program.")

break

else:

print("Invalid choice! Please enter between 1-6.")

OUTPUT

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 1

Enter the value to insert: DataStructures

Inserted DataStructures into queue.

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 1

Enter the value to insert: python

Inserted python into queue.

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 1

Enter the value to insert: Java

Inserted Java into queue.

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 2

Deleted element: DataStructures

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 3

Queue is NOT Empty

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 4

Queue size = 2

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 5

Queue elements are: python Java

=== Queue Operations ===

1. Enqueue

2. Dequeue

3. Check if Queue is Empty

4. Get Queue Size

5. Show Queue

6. Exit

Enter your choice (1-6): 6

Exiting program.