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class deque:
  def __init__(self):
      self.items=[]
  def is_empty(self):
    return len(self.items)==0
  def insert_front(self,data):
      return self.items.insert(0,data)
  def insert_rear(self,data):
      return self.items.append(data)
  def delete_front(self):
    if not self.is_empty():
      return self.items.pop(0)
    else:
      raise IndexError("Dequeue is empty...!!!")
  def delete_rear(self):
    if not self.is_empty():
      return self.items.pop()
    else:
      raise IndexError("Dequeue is empty...!!!")
  def get_front(self):
    if not self.is_empty():
      return self.items[0]
    else:
      raise IndexError("Dequeue is empty...!!!")
  def get_rear(self):
    if not self.is_empty():
      return self.items[-1]
    else:
      raise IndexError("Dequeue is empty...!!!")
  def size(self):
    return len(self.items)

def operations():
  d1=deque()
  print("Choose any one option: ")
  print("1.insert_front")
  print("2.insert_rear")
  print("3.delete_front")
  print("4.delete_rear")
  print("5.get_front")
  print("6.get_rear")
  print("7.length")
  print("8.Exit")

  while True:
    choice = input("select ---> 1/2/3/4/5/6/7/8: ")
    if(choice in ('1','2','3','4','5','6','7','8')):
      try:
        if choice=='1':
          n1 = int(input("enter a value: "))
          d1.insert_front(n1)
          print("Element is inserted at front side")
        elif choice=='2':
          n1 = int(input("enter a value: "))
          d1.insert_rear(n1)
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          print("Element is inserted at rear side")
        elif choice=='3':
          d = d1.delete_front()
          print("deleted element at front_side : ",d)
        elif choice=='4':
          d = d1.delete_front()
          print("deleted element at rear_side : ",d)
        elif choice=='5':
          f = d1.get_front()
          print("front side element is : ",f)
        elif choice=='6':
          r = d1.get_rear()
          print("rear side element is : ",r)
        elif choice=='7':
          l = d1.size()
          print("Length of deque is : ",l)
        else:
          if choice=='8':
            break
      except:
        print("Choose valid one...!")
    else:
      print("Choose valid options given above...!!!")

operations()
```

```
Choose any one option:
1.insert_front
2.insert_rear
3.delete_front
4.delete_rear
5.get_front
6.get_rear
7.length
8.Exit
select ---> 1/2/3/4/5/6/7/8: 1
enter a value: 10
Element is inserted at front side
select ---> 1/2/3/4/5/6/7/8: 1
enter a value: 20
Element is inserted at front side
select ---> 1/2/3/4/5/6/7/8: 2
enter a value: 30
Element is inserted at rear side
select ---> 1/2/3/4/5/6/7/8: 2
enter a value: 40
Element is inserted at rear side
select ---> 1/2/3/4/5/6/7/8: 1
enter a value: 50
Element is inserted at front side
select ---> 1/2/3/4/5/6/7/8: 7
Length of deque is :  5
select ---> 1/2/3/4/5/6/7/8: 3
deleted element at front_side :  50
select ---> 1/2/3/4/5/6/7/8: 4
deleted element at rear_side :  20
select ---> 1/2/3/4/5/6/7/8: 5
front side element is :  10
select ---> 1/2/3/4/5/6/7/8: 6
rear side element is :  40
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select ---> 1/2/3/4/5/6/7/8: 8
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Start coding or generate with AI.
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