Date

Program 3 (Linear queue)

```
#include <stdio.h>
#include <stdlib.h>
#define QUE_SIZE 1
int item, front=0, rear=-1, q[10];
void insertrear()
{ if (rear==QUE_SIZE-1)
{ printf("queue overflow\n");
  return;
} rear=rear+1;
  q[rear]=item;
} int deletefront()
{ if (front>rear)
{ front=0;
   rear=-1;
   return -1;
} return q[front++];
} void displayQ()
{ int i;
if (front>rear)
{ printf("contents of queue
   printf("queue is empty\n");
   return;
} printf("contents of queue\n");
```

```
for (i=front; i<=rear; i++)
{ printf("%d\n", q[i]);
}} int main()
{ int choice;
  for (;;)
{ printf("1: insertrear 2: deletefront 3: display
          4: exit\n");
  printf("enter the choice.\n");
  scanf("%d", &choice.);
  switch (choice)
{ case 1: printf("enter the item\n");
  scanf("%d", &item);
  insertrear();
  break;
  case 2: item = deletefront();
  if (item == -1)
  printf("queue is empty\n");
  else
  printf("item deleted = %d\n", item);
  break;
  case 3: displayQ();
  break;
  default: exit(0);
  }
}
```

output:

1. insertrear 2. deletefront 3. display 4. exit.
enter the choice : 1
enter the item : 10
1. insertrear 2. deletefront 3. display 4. exit
enter the choice : 1
enter the item : 20
queue overflow
1. insertrear 2. deletefront 3. display 4. exit.
enter the choice: 3
contents of queue: 10
1. insertrear 2. deletefront 3. display 4. exit
enter the choice : 2
item deleted = 10
1. insertrear 2. deletefront 3. display 4. exit.
enter the choice = 4

[Program finished]