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| --- |
| Stack |
|  | class StackProgram |
|  | { |
|  | static final int max=1000; |
|  | int top; |
|  | inta[]=new int[max]; |
|  | booleanisEmpty() |
|  | { |
|  | return(top<0); |
|  | } |
|  | StackProgram() |
|  | { |
|  | top=-1; |
|  | } |
|  | booleanpush(int x) |
|  | { |
|  | if(top>=(max-1)) |
|  | { |
|  | System.out.println("Stack is overflow"); |
|  | return false; |
|  | } |
|  | else |
|  | { |
|  | a[++top]=x; |
|  | System.out.println(x+"pushed into stack"); |
|  | return true; |
|  | } |
|  | } |
|  | intpop() |
|  | { |
|  | if(top<0) |
|  | { |
|  | System.out.println("Stack underflow"); |
|  | return 0; |
|  | } |
|  | else |
|  | { |
|  | int x=a[top--]; |
|  | return x; |
|  | } |
|  | } |
|  | intpeek() |
|  | { |
|  | if(top<0) |
|  | { |
|  | System.out.println("Stack underflow"); |
|  | return 0; |
|  | } |
|  | else |
|  | { |
|  | int x=a[top]; |
|  | return x; |
|  | } |
|  | } |
|  | } |
|  | class Stack |
|  | { |
|  | public static void main(String args[]) |
|  | { |
|  | StackProgram s=new StackProgram(); |
|  | s.push(10); |
|  | s.push(20); |
|  | s.push(30); |
|  | System.out.println(s.pop()+" Popped from stack"); |
|  | } |
|  | } |
|  |  |
|  | Queue |
|  | class Queue |
|  | { |
|  | private static intfront,rear,capacity; |
|  | private static intqueue[]; |
|  | Queue(int c) |
|  | { |
|  | front=rear=0; |
|  | capacity=c; |
|  | queue=new int[capacity]; |
|  | } |
|  | static void queueEnqueue(int data) |
|  | { |
|  | if(capacity==rear) |
|  | { |
|  | System.out.println("Queue is full!!!!"); |
|  | return; |
|  | } |
|  | else |
|  | { |
|  | queue[rear]=data; |
|  | rear++; |
|  | } |
|  | return; |
|  | } |
|  | static void queueDequeue() |
|  | { |
|  | if(front==rear) |
|  | { |
|  | System.out.println("Queue is empty!!!"); |
|  | return; |
|  | } |
|  | else |
|  | { |
|  | for(inti=0;i<rear-1;i++) |
|  | { |
|  | queue[i]=queue[i+1]; |
|  | } |
|  | if(rear<capacity) |
|  | queue[rear]=0; |
|  | rear--; |
|  | } |
|  | return; |
|  | } |
|  | static void queueDisplay() |
|  | { |
|  | inti; |
|  | if(front==rear) |
|  | { |
|  | System.out.println("Queue is empty!!!"); |
|  | return; |
|  | } |
|  | for(i=front;i<rear;i++) |
|  | { |
|  | System.out.println(queue[i]); |
|  | } |
|  | return; |
|  | } |
|  | public static void main(String args[]) |
|  | { |
|  | Queue q=new Queue(4); |
|  | System.out.println("After inserting 4 elements in the queue"); |
|  | q.queueEnqueue(10); |
|  | q.queueEnqueue(20); |
|  | q.queueEnqueue(30); |
|  | q.queueEnqueue(40); |
|  | q.queueDisplay(); |
|  | System.out.println("Try to insert 5th element in the queue"); |
|  | q.queueEnqueue(50); |
|  | System.out.println("Try to display queue after deleting all elements....."); |
|  | q.queueDequeue(); |
|  | q.queueDequeue(); |
|  | q.queueDequeue(); |
|  | q.queueDequeue(); |
|  | q.queueDisplay(); |
|  | } |
|  | } |