

Implementation af hængte lister (stakke og køer)

Imperativ Programmering og Datastrukturer

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- At kunne implementere og anvende hægtede lister i Visual BASIC
- At kunne implementere og anvende stakke og køer i Visual BASIC

Definition af Elementer

Pseudokode

```
Structure Record
```

```
  Dim titel as String
```

```
  Dim next as Record
```

```
End Structure
```

Visual BASIC

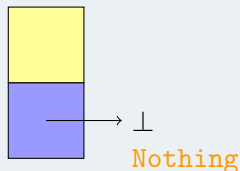
- Vælg "Projects" → "Add Class..."
- Navngiv den nye klasse: "Record"
- Tilføj struktur:

```
Class Record
```

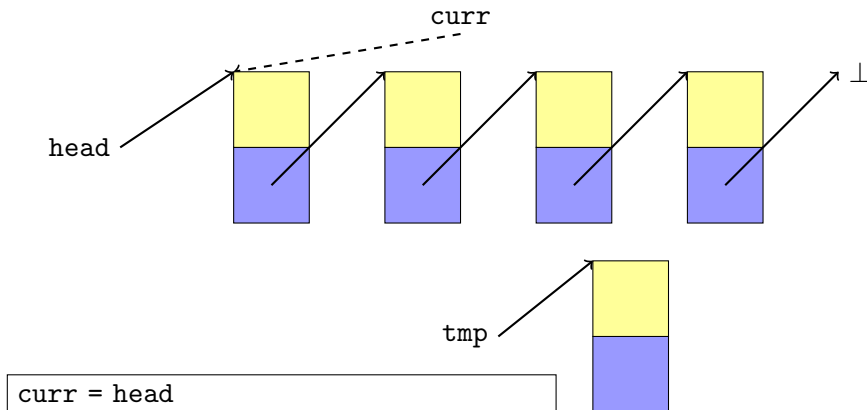
```
  Public titel as String
```

```
  Public next as Record
```

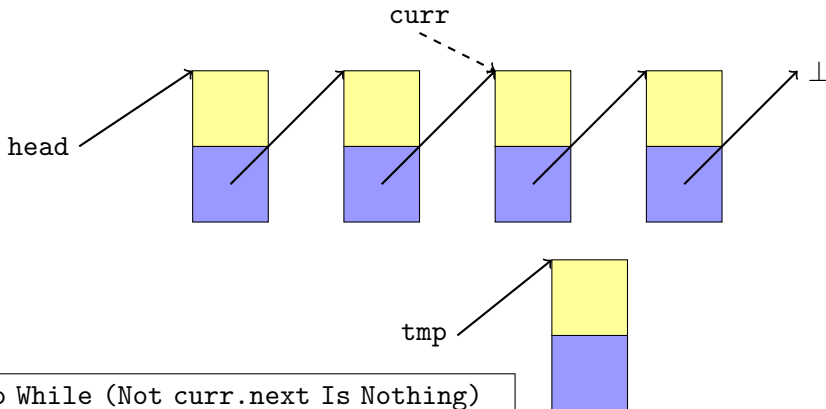
```
End Class
```



Indsættelse af element i hægtet liste

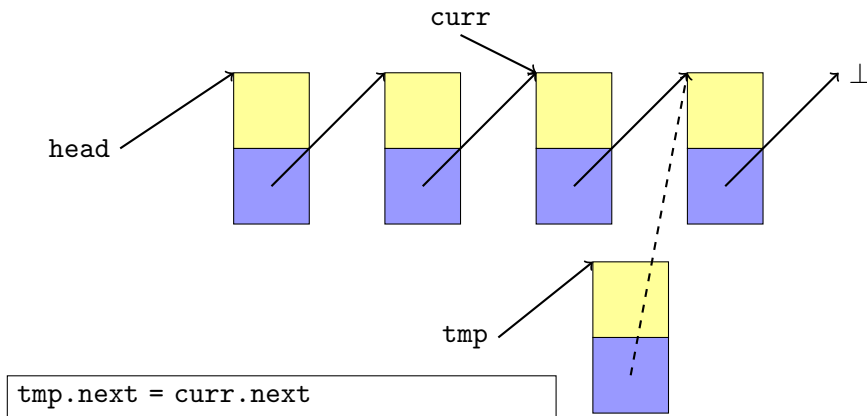


Indsættelse af element i hægtet liste

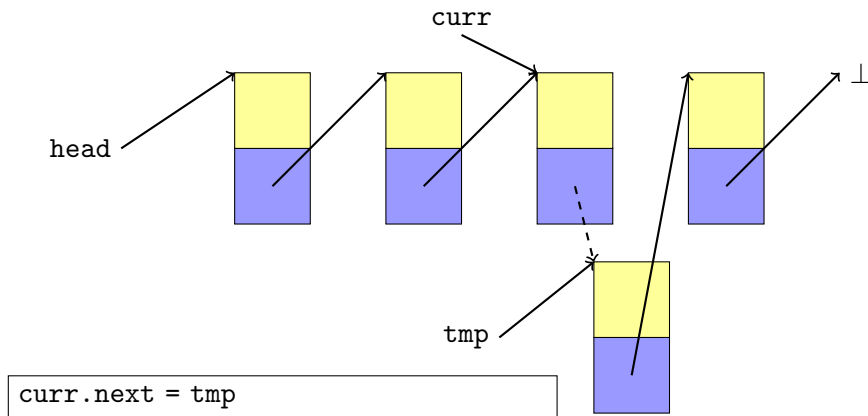


```
Do While (Not curr.next Is Nothing)
  and (curr.next.info < tmp.info)
  curr = curr.next
Loop
```

Indsættelse af element i hægtet liste



Indsættelse af element i hægtet liste



Indsættelse af element i hægtet liste (iterativt)

```
Sub AddElement(ByRef tmp as Element)
```

```
    Dim curr as Element
```

```
        curr = head
```

```
        Do While (Not curr.next Is Nothing) And  
                (curr.next.info < tmp.info)
```

```
            curr = curr.next
```

```
        Loop
```

```
        tmp.next = curr.next
```

```
        curr.next = tmp
```

```
End Sub
```


Indsættelse af element i hægtet liste (iterativt)

```
Sub AddElement(ByRef tmp as Element)
    Dim curr as Element

    If (head Is Nothing) OrElse (tmp.info < head.info) Then
        tmp.next = head
        head = tmp
    Else
        curr = head
        Do While (Not curr.next Is Nothing) And
            (curr.next.info < tmp.info)
            curr = curr.next
        Loop
        tmp.next = curr.next
        curr.next = tmp
    End If
End Sub
```

Indsættelse af element i hægtet liste (rekursivt)

```
Sub AddElement(ByRef head as Element,ByRef tmp as Element)
  If (head Is Nothing) OrElse (tmp.info < head.info) Then
    tmp.next = head
    head = tmp
  Else If (curr.next Is Nothing) OrElse
    (curr.next.info >= tmp.info) Then
    tmp.next = head
    head.next = tmp
  Else
    AddElement(head.next,tmp)
  End If
End Sub
```

Stak

- Last In, First Out (LIFO) / First In, Last Out (FILO)
- Operationer
 - Push (indsæt top-element)
 - Pop (fjern top-element)

Kø

- Last In, Last Out (LILO) / First In, First Out (FIFO)
- Operationer
 - Put (indsæt nyt bund-element)
 - Get (fjern top-element)