Lista Encadeada em Assembly

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Estrutura de Dados

```
struc linklist
  next: resd 1
  nr: resd 1
endstruc
%define NULL
%define LLSIZE
```

```
limit = 5;
                                               head = NULL;
                                               newItem = NULL;
                                               lastItem = NULL:
                                               // cria a lista
                                              do {
    head — ► NULL
                                               newItem = malloc (sizeof(struct linklist));
newItem
               NULL
                                               newItem-> next = NULL;
                                               newItem -> nr = limit;
                                               if ( head == NULL) {
 lastItem
                NULL
                                                  head = newItem;
                                                  lastItem = head;
                                               else {
                                                lastItem -> next = newItem;
                                                lastItem = newItem;
                                               limit --;
                                              \text{while (limit > 0)};
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                                                // cria a lista
                                               do {
    head
                NULL
                                                newItem = malloc (sizeof(struct linklist));
newItem
                   0005
                                         NULL newItem-> next = NULL;
                          next
                                                newItem -> nr = limit;
                                                if ( head == NULL) {
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                    NULL
                                                   head = newItem;
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                                                else {
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                                                do {
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                                                 newItem = malloc (sizeof(struct linklist));
                                          NULL newItem-> next = NULL;
newItem
                    0005
                           next
                                                 newItem -> nr = limit;
                                                 if ( head == NULL) {
 lastItem
                                                    head = newItem;
                                                    lastItem = head;
                                                 else {
                                                   lastItem -> next = newItem;
                                                   lastItem = newItem;
                                                 limit --;
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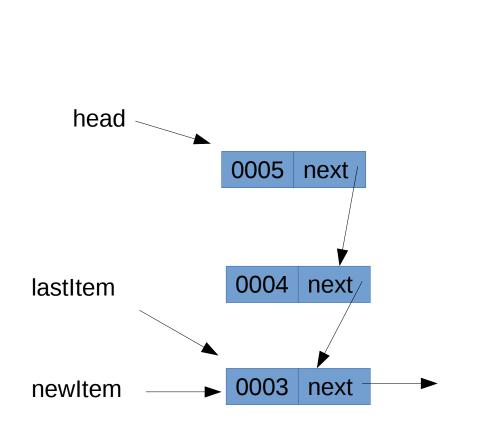
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                          next
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                   0004
                                          NULL
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                                                 limit --;
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                   0005
                                                newItem-> next = NULL;
                          next
                                                newItem -> nr = limit;
                                                if ( head == NULL) {
lastItem
                                                   head = newItem;
                                                   lastItem = head;
                   0004
                          next
                                                else {
                                                 lastItem -> next = newItem;
                                         NULL lastItem = newItem;
                   0003
                          next
newItem
                                                limit --;
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                                                newItem-> next = NULL;
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                                                newItem -> nr = limit;
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                                                   head = newItem;
                                                   lastItem = head;
                   0004
                          next/
                                                else {
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                                                limit --;
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 head = NULL;
 newItem = NULL;
 lastItem = NULL:
// cria a lista
do {
 newItem = malloc (sizeof(struct linklist));
 newItem-> next = NULL;
 newItem -> nr = limit;
 if ( head == NULL) {
    head = newItem;
    lastItem = head;
 else {
  lastItem -> next = newItem;
  lastItem = newItem;
 limit --;
\text{while (limit > 0)};
```

```
limit = 5;
limit dd 5
                                                   head = NULL:
main:
                                                   newItem = NULL;
            dword [ head ], NULL
     mov
                                                   lastItem = NULL:
            dword [ newItem ], NULL
     mov
                                                   // cria a lista
            dword [lastItem], NULL
     mov
                                                  do {
                                                   newItem = malloc (sizeof(struct linklist));
                                                   newItem-> next = NULL;
do while 1:
                                                   newItem -> nr = limit;
                                                   if ( head == NULL) {
            rdi, LLSIZE
     mov
                                                      head = newItem:
     call
          malloc
                                                      lastItem = head;
           dword [newItem], eax
     mov
                                                   else {
            ecx, dword [limit]
     mov
                                                     lastItem -> next = newItem;
                                                     lastItem = newItem;
            ebx, eax
     mov
            [ebx], dword NULL
     mov
                                                   limit --;
            [ ebx + nr ], ecx
     mov
                                                  \mathbf{while} (limit > 0);
```

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limit = 5;
limit dd 5
                                                   head = NULL:
main:
                                                   newItem = NULL;
            dword [ head ], NULL
     mov
                                                   lastItem = NULL:
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     mov
                                                   // cria a lista
            dword [lastItem], NULL
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                                                  do {
                                                   newItem = malloc (sizeof(struct linklist));
                                                   newItem-> next = NULL;
do while 1:
                                                   newItem -> nr = limit;
                                                   if ( head == NULL) {
          rdi, LLSIZE
     mov
                                                      head = newItem;
     call malloc
                                                      lastItem = head;
           dword [newItem], eax
     mov
                                                   else {
            ecx, dword [limit]
     mov
                                                     lastItem -> next = newItem;
                                                     lastItem = newItem;
            ebx, eax
     mov
            [ebx], dword NULL
     mov
                                                   limit --;
            [ ebx + nr ], ecx
     mov
                                                  \mathbf{while} (limit > 0);
```

```
limit = 5;
  newItem==(newItem+next)
                                                   head = NULL:
  (next==0)
                                                   newItem = NULL;
                                                    lastItem = NULL:
           next
                                                   // cria a lista
                        newItem+nr
           0005
                                                  do {
                         (nr==4)
                                                    newItem = malloc (sizeof(struct linklist));
                                                    newItem-> next = NULL;
                                                    newItem -> nr = limit;
do while 1:
                                                    if ( head == NULL) {
                                                      head = newItem:
            rdi, LLSIZE
     mov
                                                      lastItem = head:
     call
          malloc
           dword [newItem], eax
     mov
                                                    else {
                                                     lastItem -> next = newItem;
            ecx, dword [limit]
     mov
                                                     lastItem = newItem;
     mov
            ebx, eax
            [ebx], dword NULL
                                                    limit --;
     mov
            [ebx + nr], ecx
     mov
                                                  \mathbf{while} (limit > 0);
```

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limit = 5;
  newItem==(newItem+next)
                                                    head = NULL:
  (next==0)
                                                    newItem = NULL;
                                                    lastItem = NULL:
           next
                                                   // cria a lista
                        newItem+nr
           0005
                                                  do {
                         (nr==4)
                                                    newItem = malloc (sizeof(struct linklist));
                                                    newItem-> next = NULL;
                                                    newItem -> nr = limit;
do while 1:
                                                    if ( head == NULL) {
                                                      head = newItem:
            rdi, LLSIZE
     mov
                                                      lastItem = head:
     call
          malloc
           dword [newItem], eax
     mov
                                                    else {
                                                     lastItem -> next = newItem;
            ecx, dword [limit]
     mov
                                                     lastItem = newItem;
     mov
            ebx, eax
            [ebx], dword NULL
                                                    limit --;
     mov
            [ebx + nr], ecx
     mov
                                                  \mathbf{while} (limit > 0);
```

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limit dd 5
                                                    head = NULL:
main:
                                                    newItem = NULL;
            dword [ head ], NULL
     mov
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            dword [ newItem ], NULL
     mov
                                                   // cria a lista
            dword [lastItem], NULL
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                                                    newItem = malloc (sizeof(struct linklist));
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do while 1:
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                                                      head = newItem:
     call
          malloc
                                                      lastItem = head;
           dword [newItem], eax
     mov
                                                    else {
            ecx, dword [limit]
     mov
                                                     lastItem -> next = newItem;
                                                     lastItem = newItem;
            ebx, eax
     mov
            [ ebx ], dword NULL
     mov
                                                    limit --;
            [ ebx + nr ], ecx
     mov
                                                  \mathbf{while} (limit > 0);
```

```
limit = 5:
                                                  head = NULL:
           dword [ head ], NULL
    cmp
                                                  newItem = NULL;
    ine
          parte else
                                                  lastItem = NULL:
    mov [head], eax
                                                 // cria a lista
    mov [lastItem], eax
                                                do {
           fim if
    imp
                                                  newItem = malloc (sizeof(struct linklist));
                                                  newItem-> next = NULL;
parte else:
                                                  newItem -> nr = limit;
    mov ebx, dword [lastItem]
                                                  if ( head == NULL) {
    mov edx, [newItem]
                                                    head = newItem:
    mov [ebx], edx
                                                    lastItem = head:
     mov dword [lastItem], edx
fim if:
                                                  else {
          ecx, dword [limit]
    mov
                                                   lastItem -> next = newItem;
    dec ecx
                                                   lastItem = newItem;
    mov dword [limit],ecx
    cmp ecx,0
                                                  limit --;
    ine do while 1
                                                \mathbf{while} (limit > 0);
```

```
limit = 5:
                                                  head = NULL:
           dword [ head ], NULL
    cmp
                                                  newItem = NULL;
    ine
           parte else
                                                  lastItem = NULL:
          [head], eax
    mov
                                                 // cria a lista
          [lastItem], eax
    mov
                                                do {
    jmp
           fim if
                                                  newItem = malloc (sizeof(struct linklist));
                                                  newItem-> next = NULL;
parte else:
                                                  newItem -> nr = limit;
    mov ebx, dword [lastItem]
                                                  if ( head == NULL) {
    mov edx, [newItem]
                                                    head = newItem:
    mov [ebx], edx
                                                    lastItem = head:
    mov dword [lastItem], edx
fim if:
                                                  else {
    mov ecx, dword [limit]
                                                   lastItem -> next = newItem;
    dec ecx
                                                   lastItem = newItem;
    mov dword [limit],ecx
    cmp ecx,0
                                                  limit --;
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           fim if
                                                  newItem = malloc (sizeof(struct linklist));
                                                  newItem-> next = NULL;
parte else:
                                                  newItem -> nr = limit;
    mov ebx, dword [lastItem]
                                                  if ( head == NULL) {
    mov edx, [newItem]
                                                    head = newItem:
    mov [ebx], edx
                                                    lastItem = head:
    mov dword [lastItem], edx
fim if:
                                                  else {
    mov ecx, dword [limit]
                                                   lastItem -> next = newItem;
    dec ecx
                                                   lastItem = newItem;
    mov dword [limit],ecx
     cmp ecx,0
                                                  limit --;
    ine do while 1
                                                \mathbf{while} (limit > 0);
```