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① a.) buatlah deklarasi dari list dari liked list di atas.

```
type infotype : real
type adr      : pointer to ElmList
type ElmList <
   info : infotype
   next : adr
>
type List <
   first : adr
>
```

b.) Procedure CreateList (in/out L:List)

```
kamus

Algoritma
   L.first : NULL
endprocedure
```

c.) Procedure NewElm (in X :infotype, out P:adr)

```
kamus

Algoritma
   allocate (P)
   P -> info = X
   P -> next = NULL
endprocedure
```

d.) Procedure InsertAscending(in/out L:List, in P: adr)

```
kamus
   Q, R : adr
Algoritma
   Q = NULL
   R = L.first
   while R != NULL and P->info > R->info do
      Q = R
      R = R-> next
   endwhile
```

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```
    if Q != NULL then
        P -> next = Q -> next
        Q -> next = P
    else
        P -> next = L.first
        L.first = P
    endif
endprocedure
```

② a.) Function search (L : List, X : infotype) -> adr

```
kamus
    P : adr
Algoritma
    P = L.first
    while P != NULL and P->info != X do
        P = P->next
    endwhile
    return P
endfuction
```

b.) Procedure delete (in/out L : List, in X : infotype, out P : adr)

```
Kamus
    search ( L : List, X : infotype ) -> adr
    Q : adr
Algoritma
    P = search (L, X)
    if P == NULL then
        output (" Tidak ada")
    else if P->next == NULL then
        P = deleteLast (L, P)
    else if P == L.first then
        P = deleteFirst (L, P)
    else
        Q = P
        P = deleteAfter (L, Q)
endprocedure
```

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```
Procedure deleteFirst(in/out L:List, out P:adr)
Kamus

Algoritma
   L.first = P -> next
   P->next = NULL
endprocedure

Procedure deleteLast(in/out L:List, out P:adr)
kamus
  Q:adr
Algoritma
  if L.first == NULL then
     P = NULL
  else if (L.first->next == NULL) then
     P = L.first
     L.first = NULL
  else
     P = L.first
     Q = L.first
        while (P->next != NULL do
           Q = P
           P = P -> next
        endwhile
        Q -> next = NULL
  endif
endprocedure
Procedure deleteAfter (in/out L:List, Q:adr)
Kamus
  P:adr
Algoritma
   P = Q -> next
   Q -> next = p -> next
   P -> next = NULL
endprocedure
```