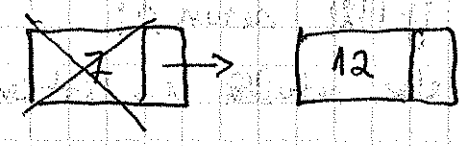
58902
Ricardo José Sampaio 23/04/2010

Stack
- Push - insere in cabec
- Pop - remover cabec

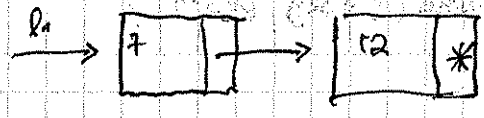
Queue
- enqueue - insere no fim
- dequeue - remover cabec

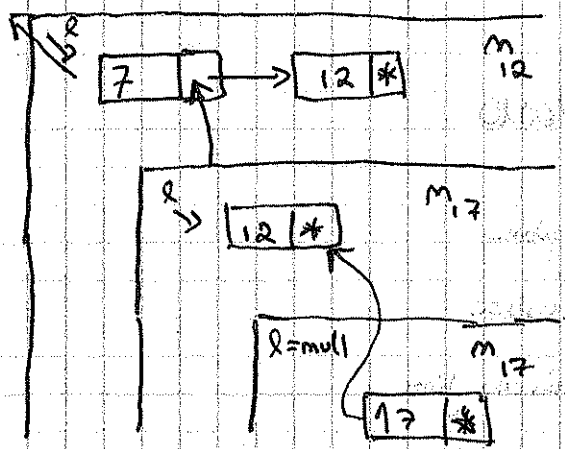
First in First out

```
LInt removercabec (LInt l)
{ LInt aux;
  if (!l)
      return l;
  else
      {
       aux = l -> reg;
       free (l);
       return aux;
      }
}
```

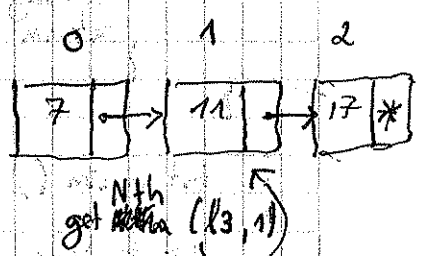


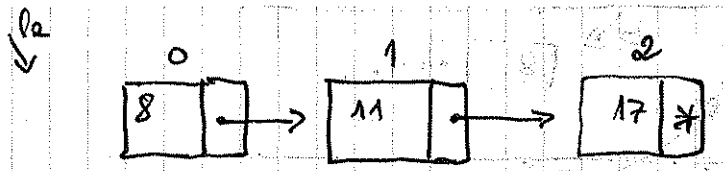

```
LInt insereinfim (LInt l, int n)

{
  LInt aux;
  if (!l)
      {
       aux = (LInt) malloc (sizeof (NLInt));
       aux -> valor = n;
       aux -> reg = l;
       return aux;
      }
  else
      {
       l -> reg = insereinfim (l->reg, n);
       return l;
      }
}

int main ()
{
  LInt l1;
  ...
  ...
  l1 = insereinfim (l1, 17);
  ...
```



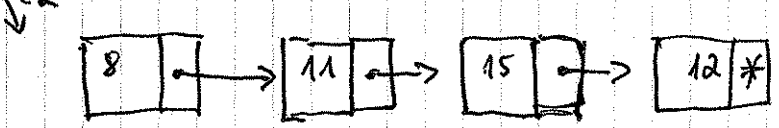



```
int listlen(List l)
{
    if (!l) return 0;
    else return 1 + listlen(l->reg);
}

    return !l ? 0 : 1 + listlen(l->reg);

int listlenit(List l)
{
    int res = 0;
    while (l)
    {
        res++;
        l = l->reg;
    }
    return res;
}

List getNth(List l, int pos)
{
    if (!l || (pos==0))
        return l;
    else
        return getNth(l->reg, pos-1);
}
```

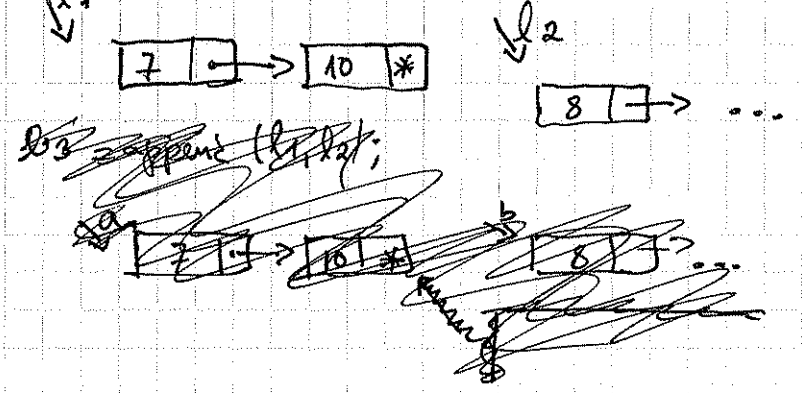




l2 = insert Nth (l2, 15, 2




```
Lint insertNth (Lint l, int m, int pos)
{
  if (!l || (pos == 0))
      return [illegible] insertcabec (l, m);
  else
    { l->seg = insertNth (l->seg, m, pos-1);
      return l;
    }
}

Lint append (Lint a, Lint b)
{
  if (!a) return b;
  else
    {
      a->seg = append (a->seg, b);
      return a;
    }
}
```



l3 = append (l1, l2)