

② Comp Constr.

2000

p3q3 (i)
MR

(a) Records are of variable size so require a general purpose space allocator (like malloc).

Either

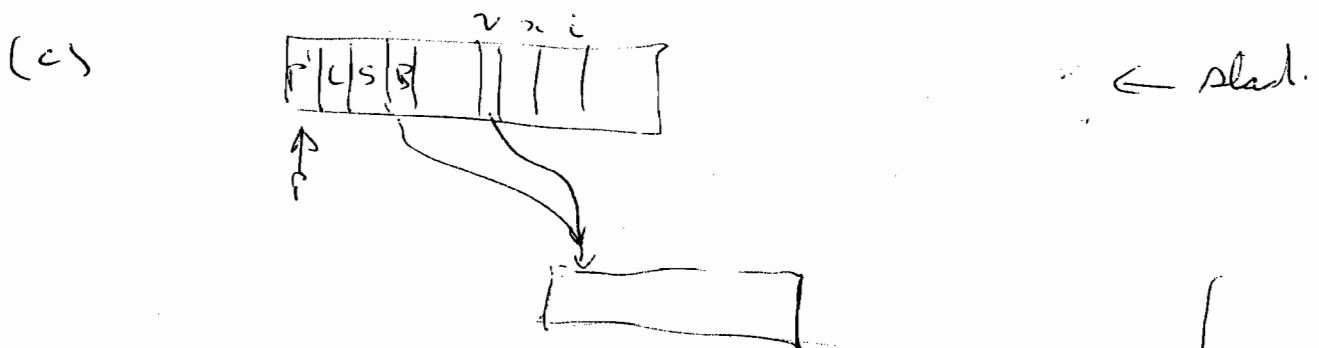
- (1) explicitly allocate and free
- (2) use ref counts
- (3) use a garbage collector.

In (2) & (3) must know the type of every variable and field so that the garbage collector can follow all pointers.

Some optimisation possible.

(b) Union Alloc space for the largest of the possible computer types. + tag to say which type the value actually is.

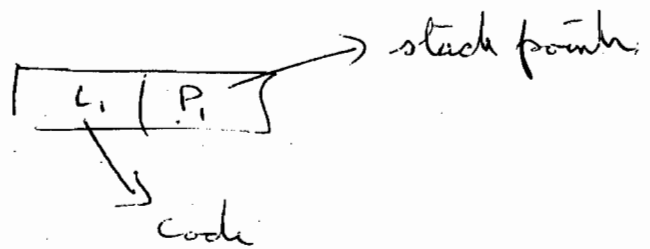
For union of pointers the tag can be in the code pointed to.



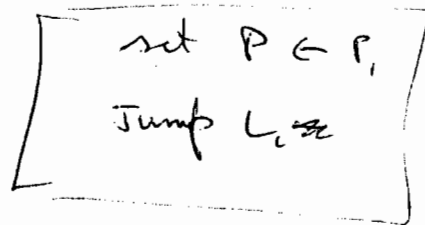
so all variables in the stack have offsets known at compile time. Array struct.

(d)

Label



goto L



- May need to unwind the stack.
- Optimize when P_i is known to $= P$
- ~~•~~
- Label closure needed when passing a label as a fn argument ~
assigning a label to a label variable