CLU Examples

- From CACM Aug77 article
  - EG1 - how to define a class in CLU; shows rep type and operation signatures but not the specification
  - EG2 - how to define an iterator in CLU

Fig. 3. The *wordbag* cluster.

```
wordbag = cluster is
   create,      % create an empty bag
   insert,      % insert an element               class
   print;       % print contents of bag           interface
   rep = record [contents: wordtree, total: int];   Rep type
create = proc ( ) returns (cvt);
         return (rep${contents: wordtree$create ( ), total: 0});
         end create;
insert = proc (x: cvt, v: string);
         x.contents := wordtree$insert (x.contents, v);
         x.total := x.total + 1;
         end insert;
print = proc (x: cvt, o: outstream);
         wordtree$print (x.contents, x.total, o);
         end print;
end wordbag;
```

Fig. 5. Use and definition of a simple iterator.

```
count_numeric = proc (s: string) returns (int);
   count: int := 0;
   for c: char in string_chars (s) do
      if char_is_numeric (c)
         then count := count + 1;
         end;
      end;
   return (count);
   end count_numeric;
string_chars = iter (s: string) yields (char);
   index: int := 1;
   limit: int := string$size (s);
   while index < = limit do
      yield (string$fetch (s, index));
      index := index + 1;
      end;
   end string_chars;
```