

2003 JHU Language Engineering Summer School

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Text Generation Lab

In this lab assignment, you will be editing an existing FUF grammar and generate sentences from a semantic representation.

1. Get C-Scheme to run

```
cd /export/ws02gmt/tools/cfuf
tcsh
source update_path.csh

setenv LD_LIBRARY_PATH /export/ws02gmt/tools/cfuf/lib
scm/bin/runfuf.solaris
```

2. Get CFUF and SURGE to run. Type each of the following commands in FUF, pressing Enter after each one.

```
(chdir "scm")
(load "toplevel/cfuf.scm")
(load "surge/surge.scm")
(load-grammar *surge-info* 'linearizer)
(load "testsuit/gr0")
(define *cfuf-common-path* (get-env-var "CFUF_COMMON_PATH"))
(load "testsuit/ir0")

(define cir0 (get-test 'ir0_1))
(define cgr0 (set-ex-grammar))
cir0
cgr0
(cfuf:unify-fd! cir0 cgr0)
(pretty-print (cfuf:fd->list cir0))
(write-to-file cir0 "qqq.scm" '*PPRINT-FD*)
```

```

(load "testsuit/gr10")
(define cgr10 (set-ex-grammar))
(load "testsuit/ir10")
(define cir10 (get-test 'ir10_1))
cgr10
cir10
(cfuf:unify-fd! cir10 cgr10)
(write-to-file cir10 "www.scm" '*PPRINT-FD*)
(print-sentence (call-linearizer cir0))

```

```

(define _ir10_2
  '((cat clause)
    (proc ((type composite)
          (relation-type possessive)
          (mode attributive)          ;; default
          (agentive yes)              ;; default
          (effective yes)             ;; default
          (effect-type dispositive)   ;; default
          (dative-prep "to")
          (lex "give"))))
    (dative-move no)
    (partic ((agent ((cat proper) (lex "John")))
            (affected ((cat proper) (lex "Mary")))
            (possessor {^ affected})
            (possessed ((lex "book")
                       (cat common)
                       (definite no)
                       (describer === "blue"))))))))
(define cfd (cfuf:compile-fd _ir10_2))
(cfuf:unify-fd! cfd cgr10)
(print-sentence (call-linearizer cfd))

(quit)

```

3. Using SURGE, generate the following sentences:

- Meow is a cat.
- Joe feeds Meow.
- Joe feeds Meow with a silver spoon.
- Every day, Joe feeds his dog with a silver spoon.

FEEDER	FED	UTENSIL	FOOD	TIME
Mary (feminine, singular)	Mary (feminine)	silver spoon	fish	every day
Joe (masculine, singular)	cat (masculine/feminine, singular)	spoon	milk	often
they (plural)	cats (masculine/feminine, plural)	eyedropper	sushi	today
I (masculine/feminine, singular)	Joe (masculine)	- (none)	dog food	now
- (none)	fish (singular)		- (none)	- (none)
	fish (plural)			
	dog (singular)			
	dogs (plural)			

Table 1: Possible values for the five input slots.

4. Semantic/syntax interface

IMPORTANT: Do NOT use SURGE for part 4. of the lab. You have to write your own FUF grammar. Once the grammar is ready, you will unify some sample input FDs with it to produce grammatical English sentences.

In this part of the assignment, you will use the FUF system to build a simple natural language generator. More specifically, you will use as input a set of database records (in any input FD format that you find appropriate) and produce a sentence for each of the records.

The input should consist of one item of each of the following semantic attributes: feeder, fed, utensil, food, time. Table 1 lists all possible values that each attribute can take.