MUPL streams

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Hung-Kun Chen · a month ago

Here are some stream related stuff written in MUPL.
It is interesting that the function "stream-for-n-steps" includes most of the MUPL constructs in a short program.
It also uses important concepts such as curry and recursion.
Thus it seems a good test case.

```
(define stream-for-n-steps
  (fun "stream-for-n-steps" "s"
       (fun #f "n"
            (ifeq (int 0) (var "n")
                  (aunit)
                  (mlet "pair" (call (var "s") (aunit))
                        (apair (fst (var "pair"))
                               (call (call (var "stream-for-n-steps") (snd (var "pair"
)))
                                     (add (var "n") (int -1)))))))))
;
;(define ones (lambda () (cons 1 ones)))
(define ones
  (fun "ones" "()"
       (apair (int 1) (var "ones"))))

(define (call-curry-2 f arg1 arg2)
  (call (call f arg1) arg2))

(eval-exp-c (call-curry-2 stream-for-n-steps ones (int 3)))

;(define (nat_from n)
;  (lambda () (cons n (nat_from (+ n 1)))))
;(define nat (nat_from 1))
```

```
(define nat-from
  (fun "nat-from" "n"
       (fun #f "()"
            (apair (var "n")
                   (call (var "nat-from")
                         (add (var "n") (int 1)))))))
(define nat
  (call nat-from (int 1)))

(eval-exp-c (call-curry-2 stream-for-n-steps nat (int 3)))
```

The results

```
(apair (int 1) (apair (int 1) (apair (int 1) (aunit))))
(apair (int 1) (apair (int 2) (apair (int 3) (aunit))))
```

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 Pierpaolo Bernardi · a month ago

Nice test. What a pity I didn't have it before submitting my hw :)
It will be very useful to who has not submitted yet, though.

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Anonymous · a month ago

Very nice test, thank you for posting!

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