

Problem V.

(i) Write Prolog code answering the query of FCS problem 14.3.1 and proving the facts formulated in FCS problem 14.9.2. Demonstrate that your code operates properly.

All programming targets were achieved to the 3rd degree. Below is proof of program correctness.

14.3.1 Write an expression similar to (14.1) for the question “What grade did L. Van Pelt get in PH100?”

```
tux2: problem5 > prolog
GNU Prolog 1.4.5 (64 bits)
Compiled Feb 23 2020, 20:14:50 with gcc
By Daniel Diaz
Copyright (C) 1999-2020 Daniel Diaz
| ?- [problem5].
compiling /home2/home-d/djg365/cs360/Homew
/home2/home-d/djg365/cs360/Homework3/progr
/home2/home-d/djg365/cs360/Homework3/progr

(2 ms) yes
| ?- answer(G).

G = 'C+'
```

14.9.2

a) before(“CS120”, “CS100”)

```
tux2: problem5 > prolog
GNU Prolog 1.4.5 (64 bits)
Compiled Feb 23 2020, 20:14:50 with gcc
By Daniel Diaz
Copyright (C) 1999-2020 Daniel Diaz
| ?- [problem5].
compiling /home2/home-d/djg365/cs360/Home
/home2/home-d/djg365/cs360/Homework3/prog
/home2/home-d/djg365/cs360/Homework3/prog

(1 ms) yes
| ?- before('CS120', 'CS100').

true ?

yes
| ?- |
```

b) before("CS206", "CS100")

```
tux2: problem5 > prolog
GNU Prolog 1.4.5 (64 bits)
Compiled Feb 23 2020, 20:14:50 with gcc
By Daniel Diaz
Copyright (C) 1999-2020 Daniel Diaz
| ?- [problem5].
compiling /home2/home-d/djg365/cs360/Homework3/prolog1.pl
/home2/home-d/djg365/cs360/Homework3/prolog2.pl
/home2/home-d/djg365/cs360/Homework3/prolog3.pl

yes
| ?- before('CS206', 'CS100').

true ?

yes
| ?- |
```

(ii) Write SICP Query System (section 4.4 of SICP) code answering the query of FCS problem 14.3.1 and proving the facts formulated in FCS problem 14.9.2. Demonstrate that your code operates properly.

All programming targets were achieved to the 3rd degree. Below is proof of program correctness.

14.3.1 Write an expression similar to (14.1) for the question “What grade did L. Van Pelt get in PH100?”

```
tux2: problem5 > mit-scheme
MIT/GNU Scheme running under GNU/Linux
Type '^C' (control-C) followed by 'H' to obtain information

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Image saved on Thursday September 5, 2019 at 11:51:46
Release 10.1.10 || Microcode 15.3 || Runtime 15.7 |

1 ]=> (load "problem5.scm")

;Loading "problem5.scm"... done
;Value: fcs-data-base

1 ]=> (initialize-data-base fcs-data-base)

;Value: done

1 ]=> (query-driver-loop)

;;; Query input:
(answer ?g)

;;; Query results:
(answer c+)
```

14.9.2

a) before("CS120", "CS100")

```
;;; Query input:
(before CS120 CS100)

;;; Query results:
(before cs120 cs100)
```

b) before("CS206", "CS100")

```
;;; Query input:
(before CS206 CS100)

;;; Query results:
(before cs206 cs100)
(before cs206 cs100)
```

NOTE: Since there is output, that means that the query was accepted. If there was no output, that would mean that the query was not accepted.