
CmpE 320 – Spring 2008 – Project #1 Evaluation Criteria

General

The project was evaluated in terms of the following criteria:

Correctness (55 points)

See “Correctness Evaluation” below.

Document (15 points)

- The project document was graded with one of the points (15, 10, 5, 0) which correspond to (good, fair, poor, none), respectively.
- The document should include the sections (all or those that are sufficient to explain the project) as stated in the Programming Project Documentation.
- The sections should include sufficient information and be written in a clear way such that the document serves as both a user manual and a technical manual. In other words, when reading the document, a user should be able to use the program and a programmer should understand the code without any difficulty.

Testing Strategy (10 points)

- The testing was graded with one of the points (10, 7, 5, 0) which correspond to (thorough, good, incomplete, none), respectively.
- The test cases should include sufficient data as to test all or most of the functionality of the program.

Style (10 points)

- The style was graded with one of the points (10, 8, 6, 3, 0) which correspond to (very good, good, fair, poor, very bad), respectively.
- The program should be written in a modular way. For instance, if a task you want to do is not trivial, then probably you should use some auxiliary functions.
- More complex functions should be written in terms of the already written simpler functions.
- The code should be **highly commented**. Marks were deducted for missing comments.
- The filenames should be the same with the ones stated in the project specification.

Logic and Efficiency (10 points)

- The logic and efficiency of the code were graded with one of the points (10, 8, 6, 3, 0) which correspond to (very good, good, fair, poor, very bad), respectively.
- Making use of any properties of the language which were not allowed as stated in the project statement greatly reduced your grade you got in logic and efficiency evaluation.
- Marks were deducted for creating unnecessary lists or variables.
- Marks were deducted for missing constraints. For instance, including duplicate elements in an output list when duplicates must be eliminated.
- Marks were deducted for missing or unnecessary base cases. For instance, checking for empty list as base case in a function and then calling another function where it is checked again.

Correctness Evaluation

Your program was tested using the following sample database:

```
(define SCIENTISTS
 '(
  (oswald veblen university of chicago 1903 alonzo church)
  (alonzo_church princeton_university 1927 william_boone alfred_foster john_kemeny stephen_kleene dana_scott
alan_turing michael_o_rabin_raymond_smullyan hartley_rogers barkley_rosser)
  (barkley_rosser princeton_university 1934 george_collins gerald_sacks)
  (george_collins cornell_university 1955)
  (ellis_horowitz university_of_wisconsin 1965 sartaj_sahni)
  (sartaj_sahni cornell_university 1973 yookun_cho eliezer_dekel teofilo_gonzalez)
  (yookun_cho university_of_minnesota 1980)
  (eliezer_dekel university_of_minnesota 1981)
  (teofilo_gonzalez university_of_minnesota 1975 sing_ling_lee)
  (sing_ling_lee university_of_texas_at_dallas 1984)
  (gerald_sacks cornell_university 1952)
  (lenore_blum massachusetts_institute_of_technology 1969)
  (harvey_friedman massachusetts_institute_of_technology 1967)
  (joe_halpern harvard_university 1981)
  (dana_scott princeton_university 1958 michael_fourman kenneth_kunen bill_rounds)
  (michael_fourman oxford_university 1974 john_longley)
  (john_longley edinburgh_university 1995)
  (kenneth_kunen stanford_university 1968 william_farme)
  (william_farmer university_of_wisconsin 1984)
  (bill_rounds stanford_university 1970)
  (jan_cuny university_of_michigan 1981)
  (raymond_smullyan princeton_university 1959)
  (hartley_rogers princeton_university 1953)
  (william_boone princeton_university 1952 george_sacerdote_w_e_singletary ann_yasuhara)
  (george_sacerdote_university_of_illinois_at_urbana_champaign 1971)
  (w_e_singletary_university_of_illinois_at_urbana_champaign 1964)
  (ann_yasuhara_university_of_illinois_at_urbana_champaign 1964)
  (alfred_foster princeton_university 1930 frank_harary lw_beineke niall_graham steve_hedetniemi
paul_stockmeyer)
  (frank_harary_university_of_california_at_berkeley 1948 )
  (lw_beineke_university_of_michigan 1965)
  (niall_graham_new_mexico_state_university 1989)
  (steve_hedetniemi_university_of_michigan 1966 curtis_cook eleanor_hare sandra_mitchell)
  (curtis_cook_university_of_iowa 1970)
  (eleanor_hare_clemson_university 1989)
  (sandra_mitchell_university_of_virginia 1977)
  (paul_stockmeyer_university_of_michigan 1971)
  (john_kemeny princeton_university 1949 bob_ritchie)
  (bob_ritchie princeton_university 1961 dick_hamlet scott_huddleston fred_springsteel)
  (dick_hamlet_university_of_washington 1971)
  (scott_huddleston_university_of_washington 1982)
  (fred_springsteel_university_of_washington 1967)
  (michael_fourman_oxford_university 1974 john_longley)
  (john_longley_edinburgh_university 1995)
  (alan_turing princeton_university 1938 robin_gandy)
  (robin_gandy_cambridge_university 1953 martin_hyland)
  (martin_hyland_oxford_university 1971 paul_taylor)
  (paul_taylor_cambridge_university 1989)
  (michael_o_rabin princeton_university 1957 doug_tygar gary_miller)
  (doug_tygar_harvard_university 1986 steve_guattery allan_heydon)
  (allan_heydon_carnegie_mellon_university 1992)
  (norman_i_badler_university_of_toronto 1975 joseph_o_rourke bulent_ozguc)
  (joseph_o_rourke_university_of_pennsylvania 1980 alok_aggarwal subhash_suri)
  (alok_aggarwal_johns_hopkins_university 1984 dina_kravets)
  (dina_kravets_massachusetts_institute_of_technology 1992)
  (subhash_suri_johns_hopkins_university 1987)
  (bulent_ozguc_university_of_pennsylvania 1979 veysi_isler)
  (veysi_isler_bilkent_university 1995)
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(gary_miller university_of_california_at_berkeley 1975 hillel_gazit steve_guattery susan_landau
tom_leighton shang_hua_teng)
(hillel_gazit university_of_southern_california 1988)
(steve_guattery carnegie_mellon_university 1995)
(susan_landau massachusetts_institute_of_technology 1983)
(tom_leighton massachusetts_institute_of_technology 1981 thang_bui dina_kravets)
(thang_bui massachusetts_institute_of_technology 1986)
(shang_hua_teng carnegie_mellon_university 1991)
(pafnuty_lvovich_chebyshev st_petersburg_university 1849 andrei_andreevich_markov)
(andrei_andreevich_markov st_petersburg_university 1884 georgy_fedoseevich_voronoi)
(georgy_fedoseevich_voronoi st_petersburg_university 1897 waclaw_sierpinski)
(waclaw_sierpinski jagiellonian_university 1906 stefan_mazurkiewicz)
(stefan_mazurkiewicz lwow_university 1913 karol_borsu)
(karol_borsuk warszaw_university 1931 samuel_eilenberg)
(samuel_eilenberg warszaw_university 1936 martin_golumbic daniel_m_kan)
(martin_golumbic columbia_university 1975 mark_buckingham)
(mark_buckingham courant_institute 1980)
(daniel_m_kan hebrew_university 1955 jerrold_w_grossman)
(jerrold_w_grossman massachusetts_institute_of_technology 1974)
)
)

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For each question, you got the points shown below if the code returned the correct answer.

If your code took any more than 10 seconds to run for a question, the execution was aborted and the program was accepted as unsuccessful for that question. The cases were carefully selected so that in all situations, correct code would finish within a second or two.

For each function, the test cases, the expected answer, and the points are as follows:

Test Case 1: (UNIVERSITY 'bulent_ozguc)

Expected Answer: 'university_of_pennsylvania

Points: 3

Test Case 2: (YEAR 'steve_guattery)

Expected Answer: 1995

Points: 3

Test Case 3: (SUPERVISED-STUDENTS 'dana_scott)

Expected Answer: (list 'michael_fourman 'kenneth_kunen 'bill_rounds)

Points: 3

Test Case 4: (UNIVERSITY-GRADUATES 'university_of_wisconsin)

Expected Answer: (list 'ellis_horowitz 'william_farmer)

Points: 3

Test Case 5: (YEAR-GRADUATES 1980)

Expected Answer: (list 'yookun_cho 'joseph_o_rourke 'mark_buckingham)

Points: 3

Test Case 6: (SUPERVISORS 'kenneth_kunen)

Expected Answer: (list 'dana_scott)

Points: 5

Test Case 7: (GRAND-STUDENTS 'dana_scott)

Expected Answer: (list 'john_longley 'william_farme)

Points: 5

Test Case 8: (SUPER-SUPERVISORS 'yookun_cho)

Expected Answer: (list 'ellis_horowitz)

Points: 5

Test Case 9: (IN-BETWEEN 1900 1915)

Expected Answer: (list 'oswald_veblen 'waclaw_sierpinski 'stefan_mazurkiewicz)

Points: 5

Test Case 10: (FROM-TO 'john_kemeny 'bob_ritchie)

Expected Answer: (list 'john_kemeny 'bob_ritchie)

Points: 5

Test Case 11: (FROM-TO 'oswald_veblen 'fred_springsteel)

Expected Answer: (list 'oswald_veblen 'alonzo_church 'john_kemeny 'bob_ritchie 'fred_springsteel)

Points: 5

Test Case 12: (COMMON-SUPERVISERS (list 'michael_fourman 'martin_hyland 'dina_kravets))

Expected Answer: (list 'alonzo_church 'oswald_veblen)

Points: 5

Test Case 13: (COMMON-SUPERVISERS (list 'mark_buckingham 'norman_i_badler))

Expected Answer: empty

Points: 5

TOTAL: 55