COMP3311 23T3   **Assignment 2**   Database Systems
                              Examples

Last updated: **Friday 10th November 6:19am**
Most recent changes are shown in red ... older changes are shown in brown.

[Specification] [Database] [SQL
Schema] [Grades+Rules] **[Examples]** [Testing] [Submitting] [Fixes+Updates]

Introduction

This document contains examples of output from the various scripts that you
are required to develop.

International Students

```
$ python3 q1.py
Term  #Locl  #Intl Proportion
19T1   160    370    0.4
19T2   150    360    0.4
19T3   163    722    0.2
20T0    17     77    0.2
20T1   334    620    0.5
20T2   351    903    0.4
20T3   365   1038    0.4
21T0    57    175    0.3
21T1   620   1112    0.6
21T2   601   1017    0.6
21T3   619   1210    0.5
22T0    46    185    0.2
22T1   823   1339    0.6
22T2   773   1230    0.6
22T3   796   1414    0.6
23T0    65    210    0.3
23T1  1028   1472    0.7
23T2   952   1431    0.7
23T3   968   1980    0.5
```

Course Satifaction

```
$ python3 q2.py COMP1521
COMP1521 Computer Systems Fundamentals
Term  Satis  #resp   #stu  Convenor
19T2    96      5     10  Mohamed Eaton
19T3    96      3      6  Vidan Nilsson
20T2    90     16     32  Vidan Nilsson
20T3    95     12     25  Vidan Nilsson
```

```
21T2     89     18     37  Lauren Zou
21T3     93     17     34  Vidan Nilsson
22T1     97      6     13  Vidan Nilsson
22T2     94     13     26  Lauren Zou
22T3     92     21     42  Vidan Nilsson
23T1     88     16     33  Vidan Nilsson
23T2     95     21     43  Dave Bhusal
23T3     97     31     62  Vidan Nilsson


$ python3 q2.py ACCT1511
ACCT1511 Accounting and Financial Management 1B
Term  Satis  #resp   #stu  Convenor
19T2     ?      ?       2  Laura Koczanowski
20T0     ?      ?       0  Sonakshi Johnstone
20T1     91      1      3  Laura Koczanowski
20T2     82      3      7  Sonakshi Johnstone
20T3     90      2      4  Othman Weakley
21T1     ?      ?       1  Othman Weakley
21T2     82      2      4  Geoffrey McCowan


$ python3 q2.py COMP2521
COMP2521 Data Structures and Algorithms
Term  Satis  #resp   #stu  Convenor
19T2     94      4      8  Dave Foskett
19T3     ?      ?       2  Dave Foskett
20T1     96      4      8  Dave Foskett
20T2     88      7     15  Dave Bhusal
20T3     97      6     13  Dave Foskett
21T1     92      3      7  Dave Foskett
21T2     97     11     23  Yasmin Lannigan
21T3     91     13     27  Dave Foskett
22T1     84     10     20  Dave Foskett
22T2     83     14     28  Edward Mai
22T3     87     10     20  Dave Foskett
23T0     88      4      8  Dave Foskett
23T1     87     16     32  Latoya Basa
23T2     91     19     39  Flora Ackerman
23T3     93     22     44  Dave Bhusal


$ python3 q2.py COMP1010
COMP1010 The Art of Computing
Term  Satis  #resp   #stu  Convenor
20T3     ?      ?       0  Matthew Govendir
21T1     ?      ?       0  Matthew Govendir
21T2     ?      ?       2  Flora Ackerman
21T3     ?      ?       1  Flora Ackerman
22T1     ?      ?       2  Flora Ackerman
22T2     94      1      3  Flora Ackerman
22T3     ?      ?       2  Flora Ackerman
23T0     ?      ?       1  Flora Ackerman
23T1     ?      ?       2  Flora Ackerman
```

Requirements

```
$ python3 q3.py 3707
3707 Engineering (Honours)
Academic Requirements:
Total UOC at least 192 UOC
1 stream from BE(Hons) Streams
- AEROAH None
- BINFAH Bioinformatics Engineering
- CEICAH Chemical Engineering
- CEICDH Chemical Product Engineering
- COMPBH Computer Engineering
- CVENAH Civil Engineering
- CVENBH None
- ELECAH Electrical Engineering
- ELECCH None
- GMATDH None
- MANFBH None
- MINEAH Mining Engineering
- MTRNAH Mechatronic Engineering
- PETRAH None
- SENGAH Software Engineering
- SOLAAH Photovoltaics and Solar Energy
- SOLABH None
- TELEAH Telecommunications
all courses from Industrial Training
- ENGG4999 Industrial Training
12 UOC of General Education


$ python3 q3.py SENGAH
SENGAH Software Engineering
Academic Requirements:
Total UOC at least 168 UOC
all courses from Foundational Computing
- COMP1511 Programming Fundamentals
- COMP1521 Computer Systems Fundamentals
- COMP1531 Software Engineering Fundamentals
- COMP2511 Object-Oriented Design and Programming
- COMP2521 Data Structures and Algorithms
all courses from SENGAH Maths
- MATH1081 Discrete Mathematics
- MATH1131 Mathematics 1A
  or MATH1141 Higher Mathematics 1A
- MATH1231 Mathematics 1B
  or MATH1241 Higher Mathematics 1B
- MATH2400 Finite Mathematics
- MATH2859 Probability, Statistics and Information
all courses from SENGAH Workshops/Design
- DESN1000 Introduction to Engineering Design and Innovation
  or ENGG1000 Introduction to Engineering Design and Innovati
```

```
                    - DESN2000 Engineering Design and Professional Practice
                    - SENG2011 Workshop on Reasoning about Programs
                    - SENG2021 Requirements and Design Workshop
                    - SENG3011 Software Engineering Workshop 3
                    all courses from SENGAH Advanced Core
                    - COMP2041 Software Construction: Techniques and Tools
                    - COMP3141 Software System Design and Implementation
                    - COMP3311 Database Systems
                    - COMP3331 Computer Networks and Applications
                    - SENG4920 Ethics and Management
                    - COMP4951 Research Thesis A
                    - COMP4952 Research Thesis B
                    - COMP4953 Research Thesis C
                    at least 36 UOC courses from SENGAH Discipline Electives
                    - ENGG2600,ENGG3060,ENGG3600,ENGG4600,COMP3###,COMP4###,COMP6
                    6 UOC of SENGAH Free Electives

                    $ python3 q3.py 3778
                    3778 Computer Science
                    Academic Requirements:
                    Total UOC at least 144 UOC
                    1 stream from Comp Sci Majors
                    - COMPA1 Computer Science
                    - COMPD1 Computer Science (Database Systems)
                    - COMPE1 e-Commerce
                    - COMPI1 Computer Science (Artificial Intelligence)
                    - COMPJ1 Computer Science (Programming Languages)
                    - COMPN1 Computer Science (Computer Networks)
                    - COMPS1 Computer Science (Embedded Systems)
                    - COMPY1 Computer Science (Security Engineering)
                    all courses from Foundational Computing
                    - COMP1511 Programming Fundamentals
                    - COMP1521 Computer Systems Fundamentals
                    - COMP1531 Software Engineering Fundamentals
                    - COMP2511 Object-Oriented Design and Programming
                    - COMP2521 Data Structures and Algorithms
                    all courses from Comp Sci Maths
                    - MATH1081 Discrete Mathematics
                    - MATH1131 Mathematics 1A
                      or MATH1141 Higher Mathematics 1A
                    - MATH1231 Mathematics 1B
                      or MATH1241 Higher Mathematics 1B
                    all courses from Comp Sci Advanced Core
                    - COMP3121 Algorithms and Programming Techniques
                      or COMP3821 Extended Algorithms and Programming Techniques
                    - COMP3900 Computer Science Project
                    - COMP4920 Management and Ethics
                    12 UOC of General Education

                    $ python3 q3.py COMPD1
                    COMPD1 Computer Science (Database Systems)
                    Academic Requirements:
                    Total UOC at least 66 UOC
```

```
all courses from COMPD1 Core
- COMP3311 Database Systems
18 UOC courses from COMPD1 Electives
- COMP6714,COMP9312,COMP9313,COMP9315,COMP9318,COMP9319
at least 6 UOC courses from COMPD1 Computing Electives
- ENGG2600,ENG3600,ENGG4600,COMP3###,COMP4###,COMP6###,COMP9#
at least 36 UOC of COMPD1 Free Electives
(yes, yes, COMP2041 is missing from the Computing Electives)
(whether you see 96 UOC or 66 UOC for the total depends on whether
```

```
$ python3 q3.py 8543
8543 Information Technology
Academic Requirements:
Total UOC at least 96 UOC
1 stream from MIT Streams
- COMPAS Artificial Intelligence
- COMPBS Bioinformatics
- COMPCS Information Technology
- COMPDS Database Systems
- COMPES e-Commerce Systems
- COMPIS Internetworking
- COMPSS Data Science and Engineering
all courses from Project Management
- GSOE9820 Engineering Project Management
all courses from PG Core Courses
- COMP9021 Principles of Programming
- COMP9024 Data Structures and Algorithms
- COMP9311 Database Systems
- COMP9331 Computer Networks and Applications
all courses from MIT Project Courses
- COMP9900 Information Technology Project
  or COMP9991 Research Project A
36 UOC courses from ADK Courses
- COMP4121,COMP4161,COMP4418,COMP6714,COMP9153,COMP9242,COMP9
```

```
$ python3 q3.py ACCTAH
ACCTAH Accounting
Academic Requirements:
Total UOC at least 48 UOC
(has no requirements defined except Total UOC)
```

```
$ python3 q3.py AAAAAA
Invalid stream code AAAAAA
```

```
$ python3 q3.py 3333
Invalid program code 3333
```

```
$ python3 q3.py 12345
Invalid code
```

Transcripts

Note: the line starting with DEBUG is there primarily to help with your debugging.
If you add it to your code, comment it out before submitting.

```
$ python3 q4.py 3892140
3892140 Burn, Farid
8338 ELECIS Engineering Science
GSOE9830 20T2 Economic Decision Analysis in E  57 PS   6uoc
ELEC9713 21T1 Industrial and Commercial Power  42 FL   fail
UOC = 6, WAM = 49.5
DEBUG: Weighted_sum:594 UOC_for_WAM:12, UOC_passed:6


$ python3 q4.py 3891785
3891785 Ahmad, Callum James
8404 FINSCS Commerce
FINS5568 19T3 Capstone - Portfolio Management  68 CR   6uoc
UOC = 6, WAM = 68.0
DEBUG: Weighted_sum:408 UOC_for_WAM:6, UOC_passed:6


$ python3 q4.py 3891853
3891853 Spargo, Osuki Dilara
8404 FINSCS Commerce
MGMT5050 20T1 Professional Skills and Ethics   88 HD   6uoc
ACCT5906 20T2 Financial Literacy for Business  59 PS   6uoc
FINS5512 20T2 Financial Markets and Instituti  57 PS   6uoc
ACCT5930 21T1 Financial Accounting              - PW   unrs
UOC = 18, WAM = 68.0
DEBUG: Weighted_sum:1224 UOC_for_WAM:18, UOC_passed:18


$ python3 q4.py 2891269
2891269 Pathmanandavel, Patronella
8338 CVENRT Engineering Science
CVEN9701 19T1 Engineering Economics and Finan  89 HD   6uoc
CVEN9521 19T2 Slope Instability and Stabilisa  93 HD   6uoc
CVEN9512 20T1 Geomechanics                      - SY   6uoc
CVEN9630 20T2 Groundwater Hydrology and Resou  87 HD   6uoc
GSOE9011 20T3 Engineering Postgraduate Course  93 HD   6uoc
CVEN9531 21T2 Unsaturated Soil Mechanics       97 HD   6uoc
CVEN9513 21T3 Advanced Foundation Engineering  78 DN   6uoc
CVEN9522 22T3 Rock Engineering                  90 HD   6uoc
UOC = 48, WAM = 89.6
DEBUG: Weighted_sum:3762 UOC_for_WAM:42, UOC_passed:48


$ python3 q4.py 5893146
5893146 Aung, Timothy Russell
3778 COMPA1 Computer Science
ACCT1501 20T1 Accounting and Financial Manage  93 HD   6uoc
COMP1511 20T1 Programming Fundamentals          - SY   6uoc
MATH1141 20T1 Higher Mathematics 1A             - SY   6uoc
COMP1521 20T2 Computer Systems Fundamentals    55 UF   fail
ECON1101 20T2 Microeconomics 1                 85 HD   6uoc
```

```
MATH1231 20T2 Mathematics 1B                      74 CR    6uoc
COMP2521 20T3 Data Structures and Algorithms      86 HD    6uoc
MATH1081 20T3 Discrete Mathematics                79 DN    6uoc
COMP3311 21T1 Database Systems                     88 HD    6uoc
ECON1102 21T1 Macroeconomics 1                     68 CR    6uoc
MGMT1001 21T1 Managing Organisations and Peop      76 DN    6uoc
COMP1521 21T2 Computer Systems Fundamentals        85 HD    6uoc
PSYC1001 21T2 Psychology 1A                        71 CR    6uoc
COMP3331 21T3 Computer Networks and Applicati      64 PS    6uoc
COMP1531 22T1 Software Engineering Fundamenta      92 HD    6uoc
COMP3121 22T1 Algorithms and Programming Tech      69 CR    6uoc
COMP3411 22T1 Artificial Intelligence             72 CR    6uoc
ARTS1270 22T2 Global History: Exploring the F      - AW     unrs
COMP2511 22T2 Object-Oriented Design and Prog      68 CR    6uoc
COMP3421 22T3 Computer Graphics                    65 CR    6uoc
COMP4920 22T3 Management and Ethics                84 DN    6uoc
COMP3231 23T1 Operating Systems                    66 CR    6uoc
COMP6080 23T1 Web Front-end Programming            76 DN    6uoc
DDES1110 23T1 3D Visualisation 1 - 3D Virtual      67 CR    6uoc
COMP3900 23T2 Computer Science Project             97 HD    6uoc
COMP9313 23T2 Big Data Management                  80 DN    6uoc
UOC = 144, WAM = 76.5
DEBUG: Weighted_sum:10560, UOC_for_WAM:138, UOC_passed:144


$ python3 q4.py 5812345
Invalid student ID 5812345


$ python3 q4.py 1234567
Invalid student ID 1234567
```

Progession Checks

Note that you won't be able to get the answers below using the supplied database. Some of the streams have an incorrect Total UOC value, caused by me moving some requirements into the program and forgetting to change the stream Total UOC accordingly. To "fix" the database, you'll need to apply the following updates:

```
update requirements set min_req = 66 where id=318;   -- fixes U
update requirements set min_req = 66 where id=322;   -- fixes U
```

```
$ python3 q5.py 5893146
5893146 Aung, Timothy Russell
3778 COMPA1 Computer Science
ACCT1501 20T1 Accounting and Financial Manage     93 HD    6uoc
COMP1511 20T1 Programming Fundamentals             - SY     6uoc
MATH1141 20T1 Higher Mathematics 1A                - SY     6uoc
COMP1521 20T2 Computer Systems Fundamentals        55 UF     fail
```

```
ECON1101 20T2 Microeconomics 1                85 HD   6uoc
MATH1231 20T2 Mathematics 1B                  74 CR   6uoc
COMP2521 20T3 Data Structures and Algorithms  86 HD   6uoc
MATH1081 20T3 Discrete Mathematics            79 DN   6uoc
COMP3311 21T1 Database Systems                88 HD   6uoc
ECON1102 21T1 Macroeconomics 1                68 CR   6uoc
MGMT1001 21T1 Managing Organisations and Peop 76 DN   6uoc
COMP1521 21T2 Computer Systems Fundamentals   85 HD   6uoc
PSYC1001 21T2 Psychology 1A                   71 CR   6uoc
COMP3331 21T3 Computer Networks and Applicati 64 PS   6uoc
COMP1531 22T1 Software Engineering Fundamenta 92 HD   6uoc
COMP3121 22T1 Algorithms and Programming Tech 69 CR   6uoc
COMP3411 22T1 Artificial Intelligence         72 CR   6uoc
ARTS1270 22T2 Global History: Exploring the F  - AW   unrs
COMP2511 22T2 Object-Oriented Design and Prog 68 CR   6uoc
COMP3421 22T3 Computer Graphics               65 CR   6uoc
COMP4920 22T3 Management and Ethics           84 DN   6uoc
COMP3231 23T1 Operating Systems               66 CR   6uoc
COMP6080 23T1 Web Front-end Programming       76 DN   6uoc
DDES1110 23T1 3D Visualisation 1 - 3D Virtual 67 CR   6uoc
COMP3900 23T2 Computer Science Project        97 HD   6uoc
COMP9313 23T2 Big Data Management             80 DN   6uoc
UOC = 144, WAM = 76.5
Eligible to graduate

The later COMP courses ended up as COMPA1 Free Electives because on
COMPA1 Computing Electives has sufficient courses, we stop adding t
requirement in the hopes of filling one of the other requirements.
do this, the COMPA1 Computing Electives would have ended up with 48
COMPA1 Free Electives would not have enough UOC to meet the minimum
though the student has taken enough courses to graduate.
To some extent, this is a consequence of using a depth-first (greedy
of the space of possible course→requirement allocation.


$ python3 q5.py 5893146 3778 COMPA1
5893146 Aung, Timothy Russell
3778 COMPA1 Computer Science
... same output as above ...

$ python3 q5.py 5893146 3778 COMPD1
5893146 Aung, Timothy Russell
3778 COMPD1 Computer Science
ACCT1501 20T1 Accounting and Financial Manage 93 HD   6uoc
COMP1511 20T1 Programming Fundamentals         - SY   6uoc
MATH1141 20T1 Higher Mathematics 1A            - SY   6uoc
COMP1521 20T2 Computer Systems Fundamentals   55 UF   fail
ECON1101 20T2 Microeconomics 1                85 HD   6uoc
MATH1231 20T2 Mathematics 1B                  74 CR   6uoc
COMP2521 20T3 Data Structures and Algorithms  86 HD   6uoc
MATH1081 20T3 Discrete Mathematics            79 DN   6uoc
COMP3311 21T1 Database Systems                88 HD   6uoc
ECON1102 21T1 Macroeconomics 1                68 CR   6uoc
MGMT1001 21T1 Managing Organisations and Peop 76 DN   6uoc
```

```
COMP1521 21T2 Computer Systems Fundamentals    85 HD   6uoc
PSYC1001 21T2 Psychology 1A                    71 CR   6uoc
COMP3331 21T3 Computer Networks and Applicati  64 PS   6uoc
COMP1531 22T1 Software Engineering Fundamenta  92 HD   6uoc
COMP3121 22T1 Algorithms and Programming Tech  69 CR   6uoc
COMP3411 22T1 Artificial Intelligence          72 CR   6uoc
ARTS1270 22T2 Global History: Exploring the F   - AW   unrs
COMP2511 22T2 Object-Oriented Design and Prog  68 CR   6uoc
COMP3421 22T3 Computer Graphics                65 CR   6uoc
COMP4920 22T3 Management and Ethics            84 DN   6uoc
COMP3231 23T1 Operating Systems                66 CR   6uoc
COMP6080 23T1 Web Front-end Programming        76 DN   0uoc
DDES1110 23T1 3D Visualisation 1 - 3D Virtual  67 CR   0uoc
COMP3900 23T2 Computer Science Project         97 HD   6uoc
COMP9313 23T2 Big Data Management              80 DN   6uoc
UOC = 132, WAM = 76.5
Need 12 more UOC for COMPD1 Electives

The reason this doesn't work for graduation is that the COMPD1
requirements are more restrictive than the COMPA1 requirements.
COMP6080 does not fit the COMPD1 Electives requirement, and
all the other requirements are "full". COMP9313 is explicitly
mentioned in the COMPD1 Electives list.



$ python3 q5.py 5892943
5892943 Zhou, Bingqi
3778 COMPA1 Computer Science
COMP1511 21T1 Programming Fundamentals         73 CR   6uoc
MATH1081 21T1 Discrete Mathematics             67 CR   6uoc
MATH1131 21T1 Mathematics 1A                   69 CR   6uoc
COMP1521 21T2 Computer Systems Fundamentals    77 DN   6uoc
COMP2521 21T2 Data Structures and Algorithms   58 PS   6uoc
FINS1613 21T3 Business Finance                 59 PS   6uoc
MATH1231 21T3 Mathematics 1B                   61 PS   6uoc
COMP1531 22T1 Software Engineering Fundamenta  85 HD   6uoc
COMP3311 22T1 Database Systems                 34 FL   fail
FINS2624 22T1 Portfolio Management             51 PS   6uoc
COMP2041 22T2 Software Construction: Techniqu  50 PS   6uoc
DART1110 22T2 Drawing 1: Foundations           74 CR   6uoc
BABS1111 22T3 Big Fat Myths                    76 DN   6uoc
FINS3633 22T3 Real Estate Finance              84 DN   6uoc
INFS2602 22T3 Managing Information Systems      67 CR   6uoc
FINS2643 23T0 Wealth Management                67 CR   6uoc
PHYS1160 23T0 Introduction to Astronomy        61 PS   0uoc
COMP2511 23T1 Object-Oriented Design and Prog   - NC   unrs
COMP3311 23T1 Database Systems                 56 PS   6uoc
COMP3411 23T1 Artificial Intelligence          63 PS   6uoc
COMP3331 23T2 Computer Networks and Applicati  69 CR   6uoc
COMP3900 23T2 Computer Science Project         92 HD   6uoc
COMP3121 23T3 Algorithms and Programming Tech   -  -
COMP9444 23T3 Neural Networks and Deep Learni   -  -
```

```
UOC = 114, WAM = 66.3
Need 6 more UOC for Foundational Computing
- COMP2511 Object-Oriented Design and Progamming
Need 12 more UOC for Comp Sci Advanced Core
- COMP3121 Algorithms and Programming Techniques
  or COMP3821 Extended Algorithms and Programming Techniques
- COMP4920 Management and Ethics
Need 12 more UOC for COMPA1 Computing Electives

COMP2041 is not in the COMPA1 Computing Electives list, so counts as
a Free Elective.
By the time PHYS1160 was considered, the COMPA1 Free Electives bucket
was full; so PHYS1160 can't count towards the degree.
COMP2511 was not resolved, so it counts for 0 UOC.
We don't assume that students will pass courses currently being studied
(e.g. COMP3121)




$ python3 q5.py zID ProgramCode StreamCode


... Coming Soon ...
```