Coursework Cover Sheet

Students should complete the input fields contained in this form and attach it in front of your formal assessment submission. All fields within this form are required. Please ensure that check boxes and radio buttons are appropriately selected. The last three questions are just for you to personally consider.

# Department and assessment information:

**School Name: Engineering and Computing (SEC)**

**Assessment title: Degrees of Hell**

**Course Title: BSc Hons Software Engineering**

**Module Title : Advanced Programming**

**Module Code: CO2402**

**Year of Study: 2023-2024**

**GNumber: G21234388**

# Academic Misconduct / Plagiarism Declaration

By attaching this front cover sheet to my assessment I confirm and declare that **I am the sole author of this work**, except where otherwise acknowledged by appropriate referencing and citation, and that I have taken all reasonable skill and care to ensure that no other person has been able, or allowed, to copy this work in either paper or electronic form, and that prior to submission I have read, understood and followed the University regulations as outlined in the [Academic Integrity Policy and Procedure for Academic Misconduct](https://www.uclan.ac.uk/assets/student-contracts/2022-23/academic-integrity-policy-and-procedure-for-academic-misconduct-2223.pdf)

# Have you checked the following? This will help your assessment achievement.

I have applied the learning outcomes for this module

I have followed the guidance in the Assessment Brief and have not used AI to boost my grade unfairly.

I have proofread my work for spelling, grammar and punctuation.

I have checked that the word count/size of this submissions accords with the guidance provided in the Assessment Brief.

# Well-being

We wish to support any student who is experiencing mitigating circumstances which prevents students from performing to the best of their ability when completing or submitting assignments. If you are experiencing such circumstances, then you may apply for Mitigating Circumstances**.** Wherever possible this must be done prior to handing in your assignment.

Do you need to apply for mitigating circumstances for this assignment Please select Yes / No

Please refer to the [Mitigating Circumstances Policy](https://msuclanac.sharepoint.com/sites/StudentHub/SitePages/Mitigating-circumstances.aspx)

## Questions you may wish to consider:

1. Have I allowed sufficient time to prepare this assessment?
2. Have I reflected on previous feedback and made improvements in accordance with advice?
3. What grade am I expecting?

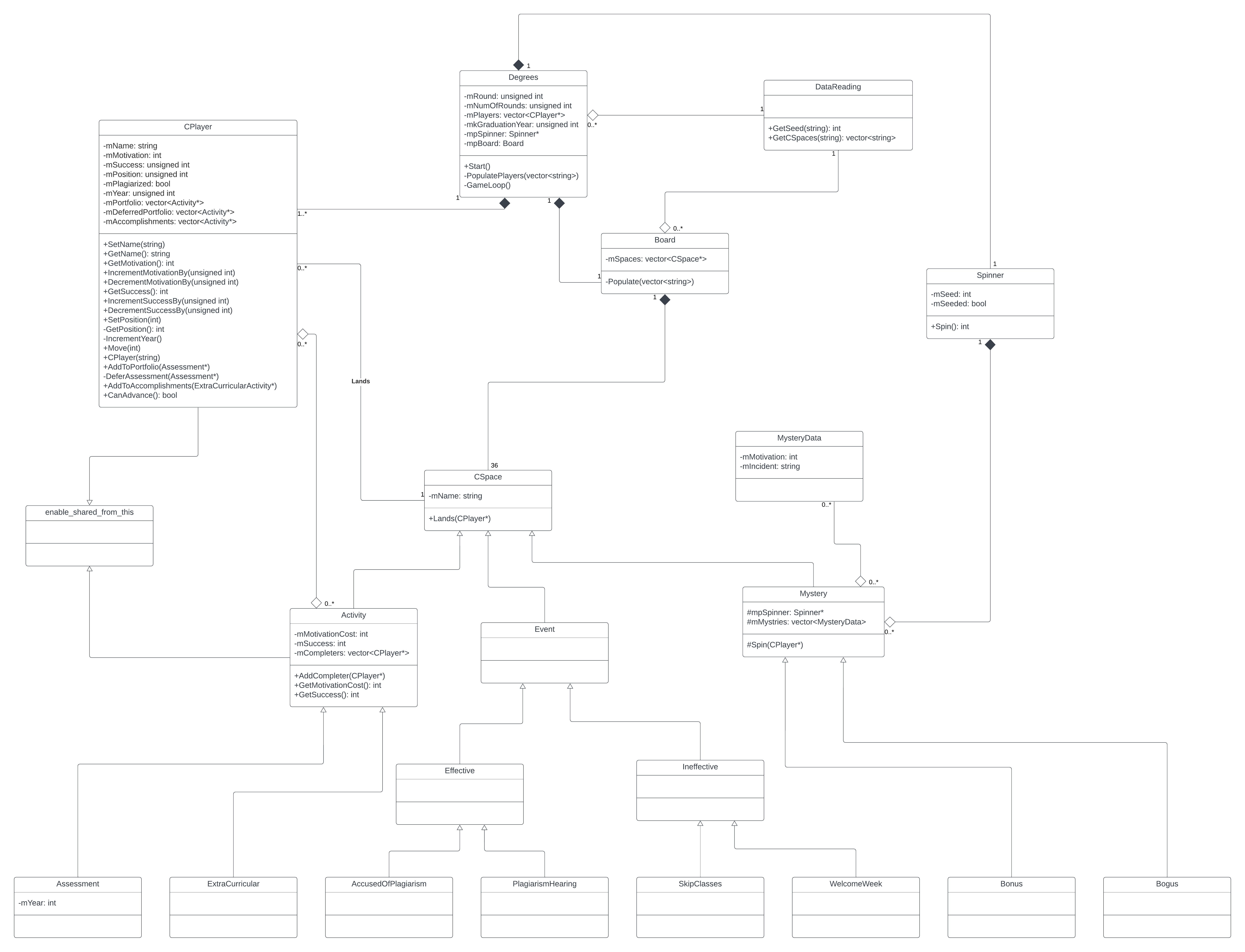
CO2402 2024 Assignment Checklist for Kasun Dodanwala.

Please fill in the grid to indicate which features you have attempted, and (where appropriate) which code file we should look in to see the implementation of that feature. This will help us mark your work more efficiently and avoid the possibility of us missing something in your code.

|  |  |  |
| --- | --- | --- |
| **Feature** | **Attempted** | **Code file(s) (if appropriate)** |
| **Any Grade > 0%** | | |
| Video demo showing code compiling and running | Yes |  |
| Copy of console output | Yes |  |
| Adherence to style guide | Yes |  |
| Code commented throughout | Yes |  |
| **Third 40% +** | | |
| CSpace and CPlayer classes (in own .h/.cpp files!) | Yes |  |
| Spinner spin function | Yes |  |
| Console outputs for spinner and space names | Yes |  |
| Passing Welcome Week and gaining 250 motivation | Yes |  |
| Collection of pointers to CSpaces | Yes |  |
| CAssessment class derived from CSpace | Yes |  |
| Implemented rules for completing assessments | Yes |  |
| Output player motivation at the end of each turn | Yes |  |
| Final success and winner output | Yes |  |
| **Lower Second 50% +** | | |
| CPlagiarismHearing class (derived from CSpace) | Yes |  |
| CAccusedOfPlagiarism class (derived from CSpace) | Yes |  |
| CSkipClasses class (derived from CSpace) | Yes |  |
| CExtraCurricular class (derived from CSpace) | Yes |  |
| Space pointers all base class pointers, not derived | Yes |  |
| Over-ridden function for landing on a space in each of the derived classes | Yes |  |
| Output as expected from derived classes | Yes |  |
| **Upper Second 60% +** | | |
| Class diagram | Yes |  |
| CBonus class (derived from CSpace) | Yes |  |
| CBogus class (derived from CSpace) | Yes |  |
| No global variables | Yes |  |
| No Memory Leaks (screenshot evidence required) | Yes |  |
| Genuine polymorphism  (no asking what type of space it is) | Yes |  |
| **First 70% +** | | |
| Rule for progression to next year | Yes |  |
| Use of typedef (or using) for vectors | Yes |  |
| Fully OO solution including Game class | Yes |  |
| Smart pointers instead of new/delete | Yes |  |
| **High First 85% +** | | |
| Additional players | Yes |  |
| Rules on deferring and completing assessments | Yes |  |
| Players can drop out | Yes |  |

* When players collaborate on assessments and extracurricular activities, the overall success is divided among them, with the result rounded to the nearest whole number. However, it seems that Lecturer Nick's output hasn't been rounded correctly according to this guideline.
* For instance, if the overall success is 20 and three players have contributed:
* Nick's output suggests a success per player of 6.
* However, following the guidelines outlined in the brief, the success per player should be rounded to 7.
* I have ensured that my approach aligns with the brief's instructions.
* **UML Diagram**

Lucid Chart Link - [Kasun - Lucid chart](https://lucid.app/lucidchart/8c4a9023-5e10-4603-912e-d1606ff61852/edit?viewport_loc=-3212%2C-3705%2C5767%2C2687%2C0_0&invitationId=inv_3050aef2-4f48-4b8c-9c83-fb7d93c52147)



Console Output :

Welcome to Scumbag College

ROUND 1

=========

Vyvyan spins 1

Vyvyan lands on Programming Task

Vyvyan completes the Programming Task for 60 and achieves 10

Vyvyan's motivation is 940 and success is 10

Rick spins 10

Rick lands on Bogus

Rick spins 9

Nobody turns up to teach your class. Lose motivation of 300

Rick's motivation is 700 and success is 0

Neil spins 4

Neil lands on PASS Leader

Neil undertakes PASS Leader activity for 100 and achieves 20

Neil's motivation is 900 and success is 20

Mike spins 4

Mike lands on PASS Leader

Mike undertakes PASS Leader activity for 50 and achieves 10

Mike motivates Neil by 50 by joining their activity

Neil also achieves 10

Mike's motivation is 950 and success is 10

ROUND 2

=========

Vyvyan spins 2

Vyvyan lands on C++ Exam

Vyvyan completes the C++ Exam for 80 and achieves 30

Vyvyan's motivation is 860 and success is 40

Rick spins 9

Rick lands on Maths Quiz

Rick completes the Maths Quiz for 100 and achieves 30

Rick's motivation is 600 and success is 30

Neil spins 7

Neil lands on Team Project

Neil completes the Team Project for 160 and achieves 20

Neil's motivation is 790 and success is 50

Mike spins 6

Mike lands on Bogus

Mike spins 10

Lecturer changes assignment schedule. Lose motivation of 20

Mike's motivation is 930 and success is 10

ROUND 3

=========

Vyvyan spins 10

Vyvyan lands on Boring Essay

Vyvyan completes the Boring Essay for 200 and achieves 10

Vyvyan's motivation is 660 and success is 50

Rick spins 10

Rick lands on Project Demo

Rick completes the Project Demo for 300 and achieves 50

Rick's motivation is 300 and success is 80

Neil spins 5

Neil lands on Accused of Plagiarism

and goes to the Hearing

Neil loses motivation

Neil's motivation is 740 and success is 50

Mike spins 3

Mike lands on Boring Essay

Mike completes the Boring Essay for 100 and achieves 5

...Vyvyan helps and achieves 5

Mike's motivation is 830 and success is 15

ROUND 4

=========

Vyvyan spins 2

Vyvyan lands on Assessed Dialog

Vyvyan completes the Assessed Dialog for 180 and achieves 10

Vyvyan's motivation is 480 and success is 65

Rick spins 9

Rick attends Welcome Week and starts Year 1 again

Rick lands on Bogus

Rick spins 6

Fail an assignment. Lose motivation of 200

Rick's motivation is 350 and success is 80

Neil spins 8

Neil attends Welcome Week and starts Year 1 again

Neil lands on PASS Leader

Neil has already undertaken the activity PASS Leader

Neil's motivation is 990 and success is 50

Mike spins 8

Mike lands on Mock Interview

Mike completes the Mock Interview for 240 and achieves 10

Mike's motivation is 590 and success is 25

ROUND 5

=========

Vyvyan spins 10

Vyvyan lands on Security Exam

Vyvyan completes the Security Exam for 280 and achieves 20

Vyvyan's motivation is 200 and success is 85

Rick spins 4

Rick lands on Bonus

Rick spins 7

Attend an inspiring C++ lecture. Gain motivation of 200

Rick's motivation is 550 and success is 80

Neil spins 7

Neil lands on Team Project

Neil has already completed the Team Project

Neil's motivation is 990 and success is 50

Mike spins 1

Mike lands on Quidditch Captain

Mike undertakes Quidditch Captain activity for 100 and achieves 20

Mike's motivation is 490 and success is 45

ROUND 6

=========

Vyvyan spins 10

Vyvyan lands on Annoying Simulation

Vyvyan doesn't have the 220 motivation to complete the Annoying Simulation

Vyvyan's motivation is 200 and success is 85

Rick spins 3

Rick lands on Networking Test

Rick completes the Networking Test for 100 and achieves 10

Rick's motivation is 450 and success is 90

Neil spins 1

Neil lands on Bonus

Neil spins 3

Get a free coffee with full loyalty card. Gain motivation of 80

Neil's motivation is 1070 and success is 50

Mike spins 10

Mike lands on Plagiarism Hearing

and supports their friend

Mike's motivation is 490 and success is 45

ROUND 7

=========

Vyvyan spins 9

Vyvyan has successfully completed Year 1

Vyvyan attends Welcome Week and starts Year 2

Vyvyan lands on Accused of Plagiarism

and goes to the Hearing

Vyvyan loses motivation

Vyvyan's motivation is 400 and success is 85

Rick spins 5

Rick lands on Skip Classes

and hangs out with their dodgy mates

Rick's motivation is 450 and success is 90

Neil spins 10

Neil lands on Quidditch Captain

Neil undertakes Quidditch Captain activity for 50 and achieves 10

Neil motivates Mike by 50 by joining their activity

Mike also achieves 10

Neil's motivation is 1020 and success is 60

Mike spins 5

Mike attends Welcome Week and starts Year 1 again

Mike lands on Programming Task

Mike completes the Programming Task for 30 and achieves 5

...Vyvyan helps and achieves 5

Mike's motivation is 760 and success is 60

ROUND 8

=========

Vyvyan spins 3

Vyvyan lands on Annoying Simulation

Vyvyan completes the Annoying Simulation for 220 and achieves 30

Vyvyan's motivation is 180 and success is 120

Rick spins 5

Rick lands on Maths Quiz

Rick has already completed the Maths Quiz

Rick's motivation is 450 and success is 90

Neil spins 8

Neil lands on Bogus

Neil spins 8

Your friend drops out of uni. Lose motivation of 200

Neil's motivation is 820 and success is 60

Mike spins 5

Mike lands on Bonus

Mike spins 1

Receive some useful feedback. Gain motivation of 20

Mike's motivation is 780 and success is 60

ROUND 9

=========

Vyvyan spins 3

Vyvyan has successfully completed Year 2

Vyvyan attends Welcome Week and starts Year 3

Vyvyan lands on Bogus

Vyvyan spins 7

Get caught skipping class. Lose motivation of 50

Vyvyan's motivation is 380 and success is 120

Rick spins 1

Rick lands on Computing Society

Rick undertakes Computing Society activity for 100 and achieves 20

Rick's motivation is 350 and success is 110

Neil spins 5

Neil lands on Annoying Simulation

Neil completes the Annoying Simulation for 110 and achieves 15

...Vyvyan helps and achieves 15

Neil's motivation is 710 and success is 75

Mike spins 8

Mike lands on Skip Classes

and hangs out with their dodgy mates

Mike's motivation is 780 and success is 60

ROUND 10

=========

Vyvyan spins 6

Vyvyan lands on Accused of Plagiarism

and goes to the Hearing

Vyvyan loses motivation

Vyvyan's motivation is 330 and success is 135

Rick spins 4

Rick lands on Bogus

Rick spins 7

Get caught skipping class. Lose motivation of 50

Rick's motivation is 300 and success is 110

Neil spins 7

Neil attends Welcome Week and starts Year 1 again

Neil lands on Bonus

Neil spins 6

Secure an industry placement Gain motivation of 150

Neil's motivation is 1110 and success is 75

Mike spins 6

Mike lands on Computing Society

Mike undertakes Computing Society activity for 50 and achieves 10

Mike motivates Rick by 50 by joining their activity

Rick also achieves 10

Mike's motivation is 730 and success is 70

ROUND 11

=========

Vyvyan spins 5

Vyvyan attends Welcome Week and starts Year 3 again

Vyvyan lands on Programming Task

Vyvyan has already completed the Programming Task

Vyvyan's motivation is 580 and success is 135

Rick spins 4

Rick lands on Bonus

Rick spins 3

Get a free coffee with full loyalty card. Gain motivation of 80

Rick's motivation is 430 and success is 120

Neil spins 7

Neil lands on Boring Essay

Neil completes the Boring Essay for 100 and achieves 3

...Vyvyan helps and achieves 3

...Mike helps and achieves 3

Neil's motivation is 1010 and success is 78

Mike spins 4

Mike lands on Bogus

Mike spins 2

Meet with coach about poor attendance. Lose motivation of 50

Mike's motivation is 680 and success is 73

ROUND 12

=========

Vyvyan spins 1

Vyvyan lands on Bogus

Vyvyan spins 10

Lecturer changes assignment schedule. Lose motivation of 20

Vyvyan's motivation is 560 and success is 138

Rick spins 10

Rick attends Welcome Week and starts Year 1 again

Rick lands on Bogus

Rick spins 6

Fail an assignment. Lose motivation of 200

Rick's motivation is 480 and success is 120

Neil spins 4

Neil lands on App Presentation

Neil completes the App Presentation for 80 and achieves 20

Neil's motivation is 930 and success is 98

Mike spins 2

Mike lands on Bonus

Mike spins 9

Make a new romantic friend Gain motivation of 150

Mike's motivation is 830 and success is 73

ROUND 13

=========

Vyvyan spins 2

Vyvyan lands on PASS Leader

Vyvyan undertakes PASS Leader activity for 50 and achieves 7

Vyvyan motivates Neil by 50 by joining their activity

Neil also achieves 7

Vyvyan motivates Mike by 50 by joining their activity

Mike also achieves 7

Vyvyan's motivation is 510 and success is 145

Rick spins 4

Rick lands on Bonus

Rick spins 1

Receive some useful feedback. Gain motivation of 20

Rick's motivation is 500 and success is 120

Neil spins 4

Neil lands on Mock Interview

Neil completes the Mock Interview for 120 and achieves 5

...Mike helps and achieves 5

Neil's motivation is 860 and success is 110

Mike spins 2

Mike lands on Bonus

Mike spins 2

Win a hackathon. Gain motivation of 50

Mike's motivation is 930 and success is 85

ROUND 14

=========

Vyvyan spins 7

Vyvyan lands on Team Project

Vyvyan completes the Team Project for 80 and achieves 10

...Neil helps and achieves 10

Vyvyan's motivation is 430 and success is 155

Rick spins 10

Rick lands on Accused of Plagiarism

and goes to the Hearing

Rick loses motivation

Rick's motivation is 450 and success is 120

Neil spins 10

Neil lands on Design Documents

Neil completes the Design Documents for 320 and achieves 40

Neil's motivation is 540 and success is 160

Mike spins 6

Mike lands on Skip Classes

and hangs out with their dodgy mates

Mike's motivation is 930 and success is 85

ROUND 15

=========

Vyvyan spins 9

Vyvyan lands on Computing Society

Vyvyan undertakes Computing Society activity for 50 and achieves 7

Vyvyan motivates Rick by 50 by joining their activity

Rick also achieves 7

Vyvyan motivates Mike by 50 by joining their activity

Mike also achieves 7

Vyvyan's motivation is 380 and success is 162

Rick spins 9

Rick attends Welcome Week and starts Year 1 again

Rick lands on Database Design

Rick completes the Database Design for 120 and achieves 20

Rick's motivation is 630 and success is 147

Neil spins 7

Neil attends Welcome Week and starts Year 1 again

Neil lands on Bogus

Neil spins 1

Fall asleep in a boring lecture. Lose motivation of 20

Neil's motivation is 770 and success is 160

Mike spins 3

Mike attends Welcome Week and starts Year 1 again

Mike lands on Programming Task

Mike has already completed the Programming Task

Mike's motivation is 1230 and success is 92

ROUND 16

=========

Vyvyan spins 4

Vyvyan lands on Bogus

Vyvyan spins 4

Get kicked out of lab for messing about. Lose motivation of 100

Vyvyan's motivation is 280 and success is 162

Rick spins 9

Rick lands on Skip Classes

and hangs out with their dodgy mates

Rick's motivation is 630 and success is 147

Neil spins 10

Neil lands on Bonus

Neil spins 4

Impress your lecturer in class. Gain motivation of 100

Neil's motivation is 870 and success is 160

Mike spins 6

Mike lands on Literature Review

Mike completes the Literature Review for 300 and achieves 30

Mike's motivation is 930 and success is 122

ROUND 17

=========

Vyvyan spins 2

Vyvyan lands on Bonus

Vyvyan spins 4

Impress your lecturer in class. Gain motivation of 100

Vyvyan's motivation is 380 and success is 162

Rick spins 3

Rick lands on App Presentation

Rick completes the App Presentation for 40 and achieves 10

...Neil helps and achieves 10

Rick's motivation is 590 and success is 157

Neil spins 4

Neil lands on Accused of Plagiarism

and goes to the Hearing

Neil loses motivation

Neil's motivation is 820 and success is 170

Mike spins 1

Mike lands on Accused of Plagiarism

and goes to the Hearing

Mike loses motivation

Mike's motivation is 880 and success is 122

ROUND 18

=========

Vyvyan spins 8

Vyvyan lands on Skip Classes

and hangs out with their dodgy mates

Vyvyan's motivation is 380 and success is 162

Rick spins 4

Rick lands on Mock Interview

Rick completes the Mock Interview for 120 and achieves 3

...Mike helps and achieves 3

...Neil helps and achieves 3

Rick's motivation is 470 and success is 160

Neil spins 9

Neil attends Welcome Week and starts Year 1 again

Neil lands on Database Design

Neil completes the Database Design for 60 and achieves 10

...Rick helps and achieves 10

Neil's motivation is 1010 and success is 183

Mike spins 1

Mike lands on Project Report

Mike completes the Project Report for 400 and achieves 50

Mike's motivation is 480 and success is 175

ROUND 19

=========

Vyvyan spins 10

Vyvyan attends Welcome Week and starts Year 3 again

Vyvyan lands on Accused of Plagiarism

and goes to the Hearing

Vyvyan loses motivation

Vyvyan's motivation is 580 and success is 162

Rick spins 9

Rick lands on Bogus

Rick spins 6

Fail an assignment. Lose motivation of 200

Rick's motivation is 270 and success is 170

Neil spins 8

Neil lands on Boring Essay

Neil has already completed the Boring Essay

Neil's motivation is 1010 and success is 183

Mike spins 10

Mike attends Welcome Week and starts Year 1 again

Mike lands on Literature Review

Mike has already completed the Literature Review

Mike's motivation is 730 and success is 175

ROUND 20

=========

Vyvyan spins 1

Vyvyan lands on Project Report

Vyvyan completes the Project Report for 200 and achieves 25

...Mike helps and achieves 25

Vyvyan's motivation is 380 and success is 187

Rick spins 9

Rick has successfully completed Year 1

Rick attends Welcome Week and starts Year 2

Rick lands on C++ Exam

Rick completes the C++ Exam for 40 and achieves 15

...Vyvyan helps and achieves 15

Rick's motivation is 480 and success is 185

Neil spins 5

Neil lands on Skip Classes

and hangs out with their dodgy mates

Neil's motivation is 1010 and success is 183

Mike spins 1

Mike lands on Accused of Plagiarism

and goes to the Hearing

Mike loses motivation

Mike's motivation is 680 and success is 200

ROUND 21

=========

Vyvyan spins 10

Vyvyan attends Welcome Week and starts Year 3 again

Vyvyan lands on Literature Review

Vyvyan completes the Literature Review for 150 and achieves 15

...Mike helps and achieves 15

Vyvyan's motivation is 480 and success is 217

Rick spins 6

Rick lands on Networking Test

Rick has already completed the Networking Test

Rick's motivation is 480 and success is 185

Neil spins 9

Neil lands on Web Assignment

Neil completes the Web Assignment for 260 and achieves 45

Neil's motivation is 750 and success is 228

Mike spins 7

Mike attends Welcome Week and starts Year 1 again

Mike lands on C++ Exam

Mike completes the C++ Exam for 40 and achieves 10

...Vyvyan helps and achieves 10

...Rick helps and achieves 10

Mike's motivation is 890 and success is 225

ROUND 22

=========

Vyvyan spins 3

Vyvyan lands on Bogus

Vyvyan spins 5

Get dumped before a big night out. Lose motivation of 150

Vyvyan's motivation is 330 and success is 227

Rick spins 10

Rick lands on Maths Quiz

Rick has already completed the Maths Quiz

Rick's motivation is 480 and success is 195

Neil spins 2

Neil lands on Project Demo

Neil completes the Project Demo for 150 and achieves 25

...Rick helps and achieves 25

Neil's motivation is 600 and success is 253

Mike spins 6

Mike lands on Networking Test

Mike completes the Networking Test for 50 and achieves 5

...Rick helps and achieves 5

Mike's motivation is 840 and success is 230

ROUND 23

=========

Vyvyan spins 9

Vyvyan lands on Maths Quiz

Vyvyan completes the Maths Quiz for 50 and achieves 15

...Rick helps and achieves 15

Vyvyan's motivation is 280 and success is 242

Rick spins 4

Rick lands on AI Assignment

Rick completes the AI Assignment for 260 and achieves 30

Rick's motivation is 220 and success is 270

Neil spins 9

Neil has successfully completed Year 1

Neil attends Welcome Week and starts Year 2

Neil lands on Bogus

Neil spins 1

Fall asleep in a boring lecture. Lose motivation of 20

Neil's motivation is 830 and success is 253

Mike spins 7

Mike lands on Accused of Plagiarism

and goes to the Hearing

Mike loses motivation

Mike's motivation is 790 and success is 230

ROUND 24

=========

Vyvyan spins 9

Vyvyan lands on Bonus

Vyvyan spins 7

Attend an inspiring C++ lecture. Gain motivation of 200

Vyvyan's motivation is 480 and success is 242

Rick spins 1

Rick lands on Bogus

Rick spins 7

Get caught skipping class. Lose motivation of 50

Rick's motivation is 170 and success is 270

Neil spins 1

Neil lands on C++ Exam

Neil completes the C++ Exam for 40 and achieves 8

...Vyvyan helps and achieves 8

...Rick helps and achieves 8

...Mike helps and achieves 8

Neil's motivation is 790 and success is 261

Mike spins 4

Mike has successfully completed Year 1

Mike attends Welcome Week and starts Year 2

Mike lands on Welcome Week

Mike's motivation is 1040 and success is 238

ROUND 25

=========

Vyvyan spins 9

Vyvyan has successfully completed Year 3

Congratulations to Vyvyan on their Graduation Day!

Game Over

=========

Vyvyan Wins!

C:\My Files\Studies\UClan (BsC)\Year 2\Semester 1 & 2\Advanced Programming CO2402\Assignment 01\G21236321\Degrees of Hell\x64\Debug\Degrees of Hell.exe (process 11836) exited with code 0.

To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.

Press any key to close this window . . .

No Memory Leaks :

