

Programming Fundamentals (COSC2531)

Final Coding Challenge

Assessment Type	Individual assessment (no group work). Submit online via Canvas/Assignments/Final Coding Challenge. Marks are awarded per rubric (please see the rubric on Canvas). Clarifications/updates may be made via announcements. Questions can be raised via the Canvas discussion forum.
Due Date	End of Week 14 (exact time is shown in Canvas/Assignments/Final Coding Challenge) Deadline will not be advanced nor extended. Please check Canvas/Assignments/Final Coding Challenge for the most up to date information regarding the assignment. As this is a major assignment, a university standard late penalty of 10% (i.e., 3 marks) per each day applies for up to 5 days late, unless special consideration has been granted.
Weighting	30 marks out of 100

1. Overview

The main objective of this final project is to assess your capability of program design and implementation for solving a non-trivial problem. You are to solve the problem by designing a number of classes, methods, code snippets and associating them towards a common goal. If you have questions, please ask via the relevant Canvas discussion forums in a general manner; for example, you should replicate your problem in a different context in isolation before posting, and you must not post your code on the Canvas discussion forum.

2. Assessment Criteria

This assignment will determine your ability to:

- i. Follow coding, convention, and behavioural requirements provided in this document and in the course lessons;
- ii. Independently solve a problem by using programming concepts taught in this course;
- iii. Design an OO solution independently and write/debug in Python code;
- iv. Document code;
- v. Provide references where due;
- vi. Meet deadlines;
- vii. Seek clarification from your "supervisor" (instructor) when needed via the Canvas discussion forums; and
- viii. Create a program by recalling concepts taught in class, understand and apply concepts relevant to solution, analyse components of the problem, evaluate different approaches.

3. Learning Outcomes

This assignment is relevant to the following Learning Outcomes:

1. Analyse simple computing problems.
2. Devise suitable algorithmic solutions and code these algorithmic solutions in a computer programming language (i.e., Python).
3. Develop maintainable and reusable solutions using object-oriented paradigm.

4. Assessment Details

Please ensure that you have read Sections 1-3 of this document before going further.

Problem Overview: In this final coding challenge, you are asked to develop a Python game program with the Object-Oriented Programming paradigm, that is based on recently popular Japanese anime virtual pet game, named **pymon.py**, that can read data from files and perform operations and simulate interactions with users. You are required to implement the program following the below requirements. Note that we will give you some files for you to run with your developed program, BUT you should change the data in these files to test your program. **During the marking, we will use different data/files to test the behavior of your program.**

Game objective: Pymon is an imaginary creature that you can adopt as a pet. In the game map, there will be two kinds of creatures: Pymon and animal. Only a Pymon can be captured and adopted as a pet. Initially, you control a Pymon to scroll through a map of interconnected locations with the mission to find other creatures to defeat in a battle of “rock, scissor, paper” encounter. The goal is to be able to find all the creatures located in various rooms before your Pymon runs out of energy. Once your Pymon defeats a creature, it will be captured and added to your pet list and can be used to help win your mission. If your Pymon got defeated by another creature, one energy point will be deducted. Once you run out of all energies, then you will lose your Pymon and it will wildly move to random location. If you hold an extra Pymon, this will become active. If this was your only and last Pymon, then it is game over. You will win the game once there is no longer any capturable creature on the map.

Requirements: Your code must meet the following **functionalities**, **code**, and **documentation** requirements. Your submission will be graded based on the **rubric** published on Canvas. Please ensure you read all the requirements and the rubric carefully before working on your assignment.

A - Functionalities Requirements:

There are **4 levels**, please ensure you only attempt one level after completing the previous level.

----- **PASS LEVEL (12 marks)** -----

Your project is to implement the required functionalities in the Object-Oriented (OO) style with at least four classes: **Locations**, **Pymon**, **Record**, and **Operation**. You need to design appropriate static/instance variables, constructors, and static/instance methods in these classes. The class related info should be encapsulated inside the corresponding class.

The goal of this level is to first construct a map that contains multiple interconnected locations.

Class Location

Location represent a placeholder for your Pymon to interact with other creatures and items. It will be listed in a map and interconnected with each other through a door. Every location has all directions

“west”, “north”, “east”, and “south”, however not every direction will lead you to another room. In Your Pymon can move to another location by going by one of these directions. Every location will be connected to at least 1 other location adjacent to it. If the location is connected on the west side, then the adjacent location will be connected to it on the east side. The suggested class implementation is as follows:

Location should have 4 attributes:

- Name. Short name of the location.
- Description. Short description of the location.
- Doors. A dictionary of connected locations in each direction “west”, “north”, “east”, “south”. Initially all doors will be assigned None as its initial value. None simply means there is no location currently exists in that direction.
- List of creatures. List of creatures that resides in it. Initially there will be None.
- List of items. List of items that it holds. Initially there will be None.

Location should also have:

- A constructor
- Relevant getter and setter methods
- Connect method: This will assign an available direction with another ‘location’. Consequently the method should take in two parameter arguments: direction and location. It will add the other location in the list of connected location. At the same time, it will set the current room in its list of list of connected locations. Example use case of this method:
 - school.connect(“west”, playground) connects playground on school’s west side and connect school on playground’s east side.

After the map is done, another objective of this level is to instantiate the game’s objects and to perform basic operations to interact with the game character called Pymon.

Class Creature

Creature can be found throughout the map and it has 3 basic attributes:

- Nickname: Each creature will have name.
- Description: Each creature will have a brief description such as “large, blue and white Pymon with yellow fangs.”
- Location: This will contain object reference of its current location.

A normal Creature cannot be challenged or adopted.

Class Pymon

Pymon is an inheritance of Creature that has an additional attribute:

- Energy: Initially there are 3/3 energy points. There are factors that will increase and decrease energy.

Besides a constructor, relevant setter, and getter methods, Pymon will also have this ability. More abilities will be added in later stage.

- **Move:** This will take in a 'direction' parameter argument. The acceptable keywords are "west", "north", "east", and "south". If there is a connected location in that direction, then the Pymon will move to new location, otherwise it will not do anything and stay in the current location.

Class Record

At the pass level, you are required to import two input files: locations.csv and creatures.csv and load data to relevant location and creatures lists.

Class Operation

The object instantiated from Class Operation would provide menu option that links with a relevant method of another object.

At this level the program would have the following menu options to operate Pymon.

1. **Inspect Pymon**
This is to review Pymon's biodata, energy, and game statistics.
2. **Inspect current location**
This will provide information about your Pymon current location including location name and description, creatures that reside in it and items. It can only work when your Pymon is currently located in this location. In order to get description of another location you must try and move Pymon to another location.
3. **Move**
This option will command Pymon to move from its current location to an adjacent location by entering a direction's door namely "west", "north", "east", and "south". If there is no door in that direction, then Pymon cannot enter the location in that direction and will remain in the current location.
4. **Exit the program**

Initial environment setup

At this level, the following initial setup will be required and tested.

1. There will be 3 interconnected locations:
 - a. Playground { west = School, north = Beach, east = None, south = None }
 - b. Beach { west = None, north = None, east = None, south = Playground }
 - c. School { west = None, north = None, east = Playground, south = None }
2. Your Pymon will be placed in the playground initially.
3. The following creatures are placed in the following locations:
 - a. Playground contains "Kitimon".
 - b. Beach contains "Sheep".
 - c. School contains "Marimon".

When the game starts, the following output appears:

```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Python 3.12.6 (main, Sep 8 2024, 13:18:56) [GCC 14.2.1 20240805] on linux
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: /home/dipto/Documents/RMIT/Programming Fundamentals/a3/sample_output.py
Welcome to Pymon World

It's just you and your loyal Pymon roaming around to find more Pymons to capture
and adopt.

You started at school
Please issue a command to your Pymon:
1) Inspect Pymon
2) Inspect current location
3) Move
4) Exit the program
Your command: 1
Hi Player, my name is Kimimon, I am white and yellow with a square face.
My energy level is 3/3. What can I do to help you?
```

Sample output of the program at this level for inspecting current location is as follows:

```
Please issue a command to your Pymon:
1) Inspect Pymon
2) Inspect current location
3) Move
4) Exit the program
Your command: 2
You are at a school, a secondary school for local creatures with 3 two-story buildings.
```

Sample output of the program at this level for moving is as follows:

```
Please issue a command to your Pymon:
1) Inspect Pymon
2) Inspect current location
3) Move
4) Exit the program
Your command: 3
Moving to which direction?:west
There is no door to the west. Pymon remains at its current location.

Please issue a command to your Pymon:
1) Inspect Pymon
2) Inspect current location
3) Move
4) Exit the program
Your command: 3
Moving to which direction?:east
You traveled east and arrived at a playground.
```

----- **CREDIT LEVEL (5 marks, you must only attempt this level after completing the PASS level)** -----

At this level, you will implement 2 additional menu items

1. Pick an item
This option will command Pymon to attempt to pick up an item. Every location may be decorated with items that Pymon can interact with. Some items can be picked and some cannot. Pymon can only pick an item if it is currently located in the same location as the item.
2. View inventory
This is to review items picked up along the journey. Each items in the inventory can be used in a certain way.

Item list

The following items may be found in a location. At the pass level, there is only 1 item of each type.

1. Apple. Apple is Pymon's main food, which can be picked up and eaten to replenish Pymon's energy. Apple can only be used once.
2. Magic potion. This can be picked up and when applied, the pet will have immunity during a battle. That is if it loses in battle, its energy will not be deducted and it will be given a chance to try battle once again. Magic potion can only be used once.
3. Binocular. With the binocular, Pymon can get an extra ability to quickly review of its surroundings including the location names in all directions. Additionally a binocular also provides a foresight of a direction.
4. A tree. A tree does nothing and cannot be picked up. It is there for decoration purpose.

Your game initial set up will now have the following items placed in the following locations:

1. Playground contains a tree and magic potion.
2. Beach contains apple.
3. School contains binoculars.

At this level, you will implement an additional menu item called "Challenge a creature", which sends the Pymon to enter a battle mode against the other creature that are located at the same location as yours. The battle is based on a traditional children game called "rock, scissor, paper", in which each side would present one of three shapes at the same time.

A battle will consist of maximum 3 encounters or as much as the energy points that your Pymon has. In each encounter you select and issue one of the three available shapes, and your opponent will randomly issue their selected shape immediately afterwards. Both issued shapes will be compared and assessed based on the following rules to determine the winner of each encounter.

Yours	Your opponent	Encounter outcome
Rock	Rock	Draw, no one wins
Rock	Paper	Paper wins (you lose)
Rock	Scissor	Rock wins (you win)
Paper	Paper	Draw, no one wins
Paper	Rock	Paper wins (you win)
Paper	Scissor	Paper loses (you lose)
Scissor	Scissor	Draw, no one wins
Scissor	Rock	Rock wins (you lose)

Scissor	Paper	Scissor wins (you win)
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The battle follows ‘best of three encounters’, that means, the first player to win 2 encounters will win the battle. If there is a draw, then the encounter will be repeated until there is a winner. If your Pymon loses an encounter, its energy level will decrease by 1 point. Once your energy level is zero or you got beaten in 2 encounters (whichever comes first) then, you have lost the battle and must relinquish your Pymon into the wild and it will be randomly moved into another location. If you have another Pymon in your pet list, then this will become your current Pymon. But if your one and only Pymon was taken away, then it is game over. If your Pymon wins against its opponent, then you would capture collect the opposing Pymon as a pet to be added to your pet list.

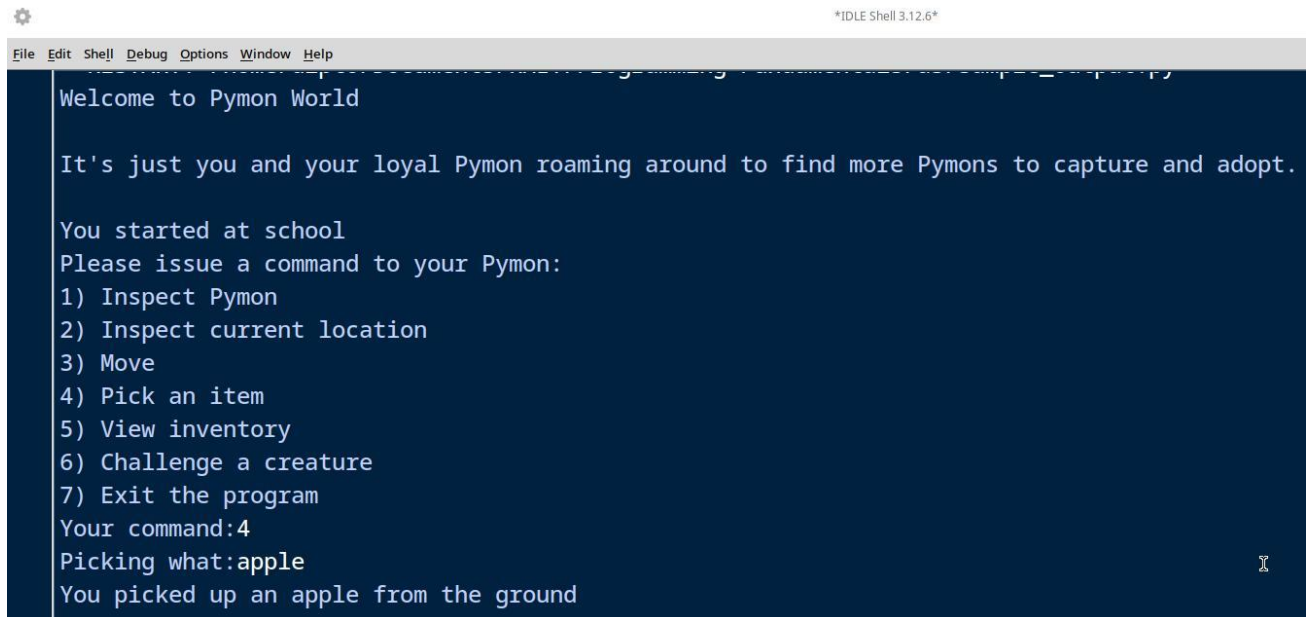
To implement the above, Class Pymon needs to be modified to include the following additional method:

- **Challenge:** This will take in a ‘creature_name’ parameter argument. If there is another Pymon as a potential opponent in the location, your Pymon can challenge the opponent to go into battle of “rock, paper, scissor” encounter. While Pymon can be challenged, other creatures cannot.

The menu will now look as follows:

1. **Inspect Pymon** (this menu item now has 2 sub items)
 1. **Inspect current Pymon:** View your current Pymon’s name, description, and energy.
 2. **List and select a benched Pymon to use.** If another Pymon is available in the bench you can swap it with your current one.
2. Inspect current location
3. Move
4. Pick an item
5. View inventory
6. **Challenge a creature:** This will send your Pymon into a battle mode against another Pymon in the current location. If there is no other Pymon in the location, then the challenge is invalid and will not affect anything.
7. Exit the program

Sample output of the program at this level for picking up an item is as follows:



```
*IDLE Shell 3.12.6*
File Edit Shell Debug Options Window Help
Welcome to Pymon World

It's just you and your loyal Pymon roaming around to find more Pymons to capture and adopt.

You started at school
Please issue a command to your Pymon:
1) Inspect Pymon
2) Inspect current location
3) Move
4) Pick an item
5) View inventory
6) Challenge a creature
7) Exit the program
Your command:4
Picking what:apple
You picked up an apple from the ground
```


Sample output of the program at this level for making a challenge is as follows:

```
Please issue a command to your Pymon:
```

- 1) Inspect Pymon
- 2) Inspect current location
- 3) Move
- 4) Pick an item
- 5) View inventory
- 6) Challenge a creature
- 7) Exit the program

```
Your command:5
```

```
You are carrying: apple
```

```
Please issue a command to your Pymon:
```

- 1) Inspect Pymon
- 2) Inspect current location
- 3) Move
- 4) Pick an item
- 5) View inventory
- 6) Challenge a creature
- 7) Exit the program

```
Your command:6
```

```
Challenge who:gumimon
```

```
Gumimon gladly accepted your challenge! Ready for battle!
```

```
The first Pymon to win 2 of encounters will win the battle
```

```
First encounter!
```

```
Your turn (r)ock), (p)aper), or (s)cissor?:r
```

```
You issued a rock!
```

```
Your opponent issued a paper!
```

```
rock vs paper: paper wins! You lost 1 encounter and 1 energy.
```

```
Your turn (r)ock), (p)aper), or (s)cissor?:s
```

```
You issued a scissor!
```

```
Your opponent issued a paper!
```

```
scissor vs rock: scissor wins! You won 1 encounter.
```

```
Your turn (r)ock), (p)aper), or (s)cissor?:p
```

```
You issued a paper!
```

```
Your opponent issued a rock!
```

```
paper vs rock: paper wins! You won 2 encounters!.
```

```
Congrats! You have won the battle and adopted a new Pymon called Gumimon!
```

----- **DI LEVEL (5 marks, you must only attempt this level after completing the CREDIT level)** -----

This level further extend your program with extra features and complexities.

The menu will now look as follows:

1. Inspect Pymon
2. Inspect current location
3. Move
4. Pick an item
5. **View inventory** (this function now has an additional sub-command)

a. Select item to use

6. Challenge a creature
7. Generate stats
8. Exit the program

Pymon energy level can go up and down.

1. Energy level increases by one point if Pymon eats an edible item.
2. Energy level decreases by one point in every 2 moves. When Pymon moves 2 locations, it's energy will decrease by 1 point. Once all energy points were depleted, your Pymon will escape into the wild and moved to a random room. If this this was your one and only Pymon, then it is game over.

A this level Pymon can use items in the inventory to help its mission and maintain its energy level. Make the following modification in Class Pymon:

- Use item: This will take in an 'item' parameter argument to use an item in the inventory. An item must first be collected and added in inventory before it can be used.
 - If there is an edible item like an 'apple', then Pymon can eat it. Each item will increase energy by one point. Maximum energy is 3. If current energy level is already 3, then eating will not further increase energy.
 - A 'magic potion' will give temporary immunity in a battle. The potion can only be used in one battle. While the potion is used, if your Pymon wins the encounter, this magic potion remains. If your Pymon lose the encounter, energy will not get deducted and the magic potion will disappear from the inventory. Regardless of the battle outcome, after the battle, the potion will disappear from the inventory.
 - A 'binocular' will give Pymon farsight vision of the current location and other connected location in a particular direction. When using binocular, Pymon can select from the following options:
 - "current". Example output "A sheep, another Pymon, and in the west is a cave".
 - "west". Example output "In the west, there seems to be a cave with an edible apple".
 - "north". Example output "This direction leads nowhere"
 - "east". Example output "This direction leads nowhere".
 - "south". Example output "This direction leads nowhere"

Additionally, your program should now be able to handle some variations in the files using built-in/custom exceptions:

1. InvalidDirectionException: This exception gets thrown when the selected direction does not contain any location.
2. InvalidInputFileFormat: This exception gets thrown when a CSV file has invalid content or in incorrect format.

----- HD LEVEL (5 marks, you must only attempt this level after completing the DI level) -----

The menu will now look as follows:

1. Inspect Pymon
2. Inspect current location
3. Move

4. Pick an item
5. View inventory
6. Challenge a creature
7. **Generate stats**
8. Exit the program

Additional information will be saved:

1. Every battle will now be noted in statistic. This will now include number of wins, number of draw, and number of losses. At the bottom of the battle list, it will show total wins, total draws and total loss. For example:

Pymon Nickname: "Marimon"

Battle 1, 25/10/2024 11:22AM Opponent: "Gumimon", W: 2 D: 1 L: 1

Battle 2, 26/10/2024 10:30PM Opponent: "Pumamon", W: 2 D: 0 L: 0

Total: W: 4 D: 1 L: 1

2. Every encounter will be given a timestamp that contains actual date and time of the battle.

There are 3 data files that will provide the starting materials to run the game: creatures.csv, locations.csv and items.csv. Data from these 3 should be added to corresponding lists in a Record object. As the program gets more complex, it allows for custom files input to provide extension and extra variations to the game. For this you may add an additional Record class to manage file input and output. NOTE, your code must be able to run under command-line as in the specification. Specifically, if the filenames of the locations, creatures, and items are locations.csv, creatures.csv, and items.txt, respectively, then your program should be able to run under the following command lines:

1. `python pymon_game.py`
2. `python pymon_game.py locations.csv`
3. `python pymon_game.py locations.csv creatures.csv`
4. `python pymon_game.py locations.csv creatures.csv items.csv`

After data were imported into the program, the program will place items and creatures at various locations randomly. Your Pymon starting location will also be randomised.

The program will have some additional requirements (some might be challenging):

1. Save game progress: This will save state of the game in a custom file like save2024.csv
2. Load game progress: This will load state of the game in a custom file like save2024.csv
3. Admin feature to add a custom location. This is to create a new location object and save it in locations.csv

Sample csv line that represents a location is as follows:

School, a secondary school for local creatures with 3 2-story buildings., west = None, north = None, east = Playground, south = None

4. Admin feature to add a custom creature. This is to create a new creature object (could be both Pymon and other type of creature) and save it in creatures.csv. You may decide to have an inheritance structure to categorise a Creature into 2 categories: Pymon and Animals.
Sample csv may contain *name*, *description*, and *adoptable* (yes/no) such as the following:
Kitimon, large blue and white Pymon with yellow fangs, yes
Sheep, small fluffy animal with interesting curly white fur, no
Marimon, medium red and yellow Pymon with a cute round face, yes

B - Code Requirements:

You must demonstrate your ability to program in Python by yourself, i.e., you should not use any Python packages that can do most of the coding for you. **The only Python packages allowed in this assignment are sys, os, datetime, and random.** If other packages/libraries are used, you will get a heavy penalty.

Your program at all levels should be fully OO, e.g., no variables, methods, or code snippets dangling outside a class. Your main program should simply create an object and run its methods to invoke methods from other classes to perform the required functionalities.

You should test/verify the program with different text files (not just run with our text files) to ensure your program satisfies all the required functionalities.

You are not allowed to use Artificial Intelligence tools (e.g., ChatGPT or Copilot) to help you when developing your code. If this is detected by our plagiarism checker, a plagiarism/misconduct case will be open for you, and you will be reported to the RMIT Misconduct team who will then handle your plagiarism/misconduct case.

Your code needs to be formatted consistently. You must not include any unused/irrelevant code (even inside the comments). What you submitted must be considered the final product.

You should design your classes carefully. You may use a class diagram to assist with the design. **In the DI and HD levels, you are required to provide a detailed class diagram to show your class design.** An example of a class diagram is shown below – Figure 1 (note that this is a class diagram of a different programming assignment). In the diagram, the variables and methods of each class are shown. Note that if your code is at the PASS or CREDIT level, you do not need to submit any diagram; a diagram at these levels would NOT result in any mark.

You could use tools like PowerPoint, Keynotes, or online tools like moqups.com to draw the diagram. **The diagram needs to be submitted in jpg, gif, png, or pdf format.**

Finally, note that in places where this specification may not tell you how exactly you should implement a certain feature, you need to use your judgment to choose and apply the most appropriate concepts from our course materials. You should follow answers given by your "client" (or "supervisor" or the teaching team) under Canvas/Discussions/Discussion on Final Coding Challenge.

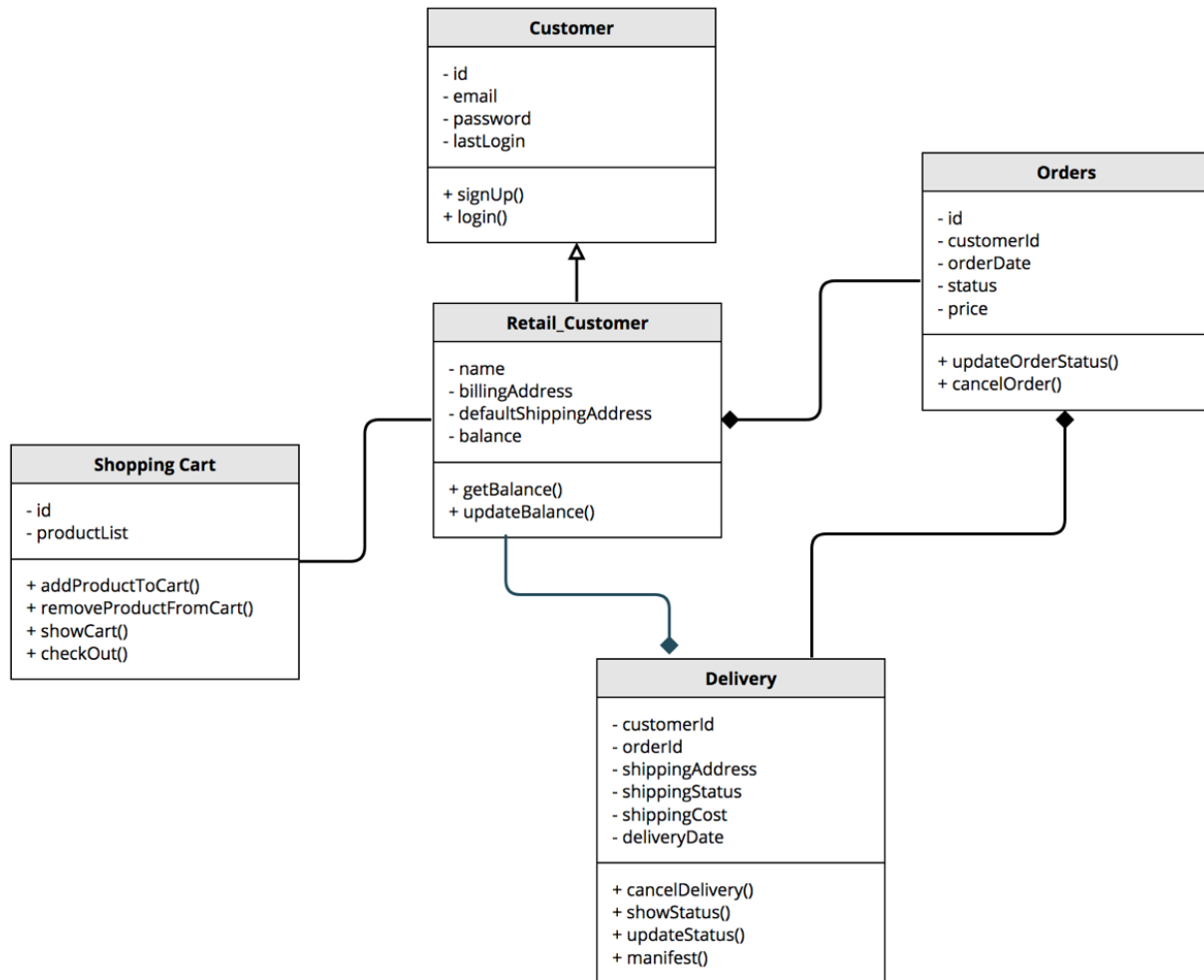


Figure 1. An example of a class diagram

C - Documentation Requirements:

You are required to write comments (documentation) as a part of your code. Writing documentation is a good habit in professional programming. It is particularly useful if the documentation is next to the code segment that it refers to. NOTE that you don't need to write an essay, i.e., you should keep the documentation succinct.

Your comments (documentation) should be in the same Python file. Please DO NOT write a separate file for comments (documentation).

At the beginning of your Python file, your code must contain the following information:

1. **Your name and student ID.**
2. **The highest level you have attempted.** This means you have completed all the requirements of the levels below. Mark will be only given at the lowest level of partial completion. For example, if you completed the PASS level, tried 50% of the CREDIT level, 30% of the DI level, 10% of the HD level, then your submission will be marked at the CREDIT level only (we will ignore the DI and HD levels, so please make sure you fully finish one level before moving to the next one).
3. **Any problems of your code and requirements that you have not met.** For example, scenarios that might cause the program to crash or behave abnormally, the requirements your program does not satisfy. Note that you do not need to handle or address errors that are not covered in the course.

Besides, the comments in this final coding challenge should serve the following purposes:

- Explain your code in a precise but succinct manner. It should include a brief analysis of your approaches instead of simply translating the Python code to English. For example, you can comment on why you introduce a particular function/method, why you choose to use a while loop instead of other loops, why you choose a particular data type to store the data information. These comments can be placed before the code blocks (e.g., functions/methods, loops, if) and important variable declarations that the comments refer to.
- Document some analysis/reflection as a part of your code. Here, you need to write some paragraphs (could be placed at the end or at the beginning of your code) to explain in detail your design process, e.g., how you came up with the design of the program, how you started writing the code after the design process, the challenges you met during the code development.
- Document the references, i.e., any sources of information (e.g., websites) you used other than the course contents directly under Canvas/Modules, you must give acknowledgement of the sources, explaining how you use the sources in this assignment. More detailed information regarding the references can be found in Section 5.

D - Rubric:

Overall:

Level	Points
PASS level	12
CREDIT level	5
DI level	5
HD level	5
Others (code quality, modularity, comments/analysis)	3

More details of the rubric of this assessment can be found on Canvas ([here](#)). Students are required to look at the rubric to understand how the assessment will be graded.

4. Submission

As mentioned in the Code Requirements, **you must submit only one zip file with the name ProgFunFinal_<Your Student ID>.zip** via Canvas/Assignments/Final Coding Challenge. The zip file contains:

- The main Python code of your program, named **pymon_game.py**
- A diagram **in one of the formats: jpg, gif, png, pdf** (if you attempt the DI and HD levels)
- Other Python files written by you to be used by your main application.

It is your responsibility to correctly submit your file. Please verify that your submission is correctly submitted by downloading what you have submitted to see if the file includes the correct contents. The final zip file submitted is the one that will be marked. You do not need to submit the text files we provide you with – we will mark based on our text files. If you attempt the PASS level, your program should be able to run the first and second command lines. If you attempt until the CREDIT level, your program should be able to run the first, second, and third command lines. If you attempt until the DI or HD level, your program should be able to run all the four command lines. **NOTE, the filenames specified in the command lines can be different, not necessarily locations.csv, creatures.csv, items.csv.** You can assume users always specify the correct order of file names, i.e., the locations file first, the creatures file second, and the items file third.

Late Submission

All assignments will be marked as if submitted on time. Late submissions of assignments without special consideration or extension will be automatically penalised at a rate of 10% of the total marks available per day (or part of a day) late. For example, if an assignment is worth 30 marks and it is submitted 1 day late, a penalty of 10% or 3 marks will apply. This will be deducted from the assessed mark. Assignments will not be accepted if more than five days late unless special consideration or an extension of time has been approved.

Special Consideration

If you are applying for extensions for your assessment within five working days after the original assessment date or due date has passed, or if you are seeking extension for more than seven days, you will have to apply for Special Consideration, unless there are special instructions on your Equitable Learning Plan.

In most cases you can apply for special consideration online [here](#). For more information on special consideration, visit the university website on special consideration [here](#).

5. Referencing Guidelines

What: This is an individual assignment, and all submitted contents must be your own. If you have used sources of information other than the contents directly under Canvas/Modules, **you must give acknowledgement of the sources, explaining in detail how you use the sources in this assignment, and give references using the [IEEE referencing format](#).**

Where: You can add a code comment near the work (e.g., code block) to be referenced and include the detailed reference in the IEEE style.

How: To generate a valid IEEE style reference, please use the [citethisforme](#) tool if you're unfamiliar with this style.

6. Academic Integrity and Plagiarism (Standard Warning)

Academic integrity is about honest presentation of your academic work. It means acknowledging the work of others whilst developing your own insights, knowledge, and ideas. You should take extreme care that you have:

- Acknowledged words, data, diagrams, models, frameworks and/or ideas of others you have quoted (i.e., directly copied), summarized, paraphrased, discussed, or mentioned in your assessment through the appropriate referencing methods.
- Provided a reference list of the publication details so your readers can locate the source if necessary. This includes material taken from the internet sites.

If you do not acknowledge the sources of your material, you may be accused of plagiarism because you have passed off the work and ideas of another person without appropriate referencing, as if they were your own.

RMIT University treats plagiarism as a very serious offence constituting misconduct. Plagiarism covers a variety of inappropriate behaviors, including:

- Failure to properly document a source
- Copyright material from the internet or databases
- Collusion between students

For further information on our policies and procedures, please refer to the University website ([link](#)).

7. Assessment Declaration:

When you submit work electronically, you agree to the assessment declaration:

<https://www.rmit.edu.au/students/student-essentials/assessment-and-results/how-to-submit-your-assessments>