

# Course Project Overview

This project continues and enhances the Dungeon Adventure game developed in TCSS 502. It is designed for the project team members responsible for implementing and verifying the correct functioning of version 2.0 of the Dungeon Adventure game.

The implementation will adhere to object-oriented programming principles in Python.

The project aims to improve gameplay dynamics, apply the MVC (Model-View-Controller) and Factory design patterns, and incorporate an inheritance hierarchy for characters and items. It will utilize database management and pickling for data handling, implement version control using Git and GitHub, and plan tasks using YouTrack Project Management—all as part of the TCSS 504 course project.

## Software Requirements

- The software will run on macOS, Windows, and Linux operating systems with a minimum requirement of 4 GB RAM.
- The software will require a modern CPU (Central Processing Unit).
- A graphics card capable of rendering basic 2D graphics is required.
- Python 3.x or higher (preferably the latest stable version) is required.
- SQLite 3.x or higher (preferably the latest stable version) is required.

## Hardware Requirements

- Monitor (laptop or desktop)
- Keyboard
- Mouse

## Pending Decisions

- The choice of additional third-party libraries for enhanced graphics (e.g., for a standby GUI).
- Outstanding decisions regarding the implementation of multiplayer functionality.

Special  
Thanks to:

Professor Tom Capaul for the valuable learnings,  
guidance, dedication, and wisdom shared during  
the TCSS 504 course.

## References:

- Course Project guidelines and outline prepared by Professor Tom Capaul.
- Team discussions via Discord and collaborative task progress tracking through the GitHub repository and YouTrack project management.
- TCSS 502 Assignment 5: Putting it All Together - Dungeon Adventure!
- TCSS 504 Course Project: Trivia Maze, Dungeon Adventure 2.0, or File Watcher.
- [SRS Templates] TCSS 504 Software Requirements and Specifications (SRS) Assignment.
- Zoom lecture recordings and class modules prepared by Professor Tom Capaul.
- Class modules by Mr. Kevin Anderson.
- Class modules by Professor Varik Hoang.
- Class modules by Professor Robert Cordingly.
- Getting Started with Python by Fabrizio Romano et al.
- [Python Enhancement Proposal (PEP) process. GitHub public domain.]  
<https://github.com/python-peps/tree/main>
- <https://app.diagrams.net>

# Team Awesome – Dungeon Adventure 2.0

James Godwin The Brilliant Thinker	Maddy Whitney The Awesome Thinker	Jannine G. D. MacGormain The Fierce Thinker
Main Job	Main Job	Main Job
Code Spikes and Implementations Manager	Git and GitHub Version Control Manager	YouTrack Course Project Management Manager
Other Jobs	Other Jobs	Other Jobs
<ul style="list-style-type: none"><li>▪ Source Code Debugger</li><li>▪ Battle Fight Writer</li></ul>	<ul style="list-style-type: none"><li>▪ Source Code Debugger</li><li>▪ Battle Fight Writer</li></ul>	<ul style="list-style-type: none"><li>▪ Source Code Reviewer</li><li>▪ Battle Fight Writer</li><li>▪ Sprint(s) Deliverables Documentation Writer</li></ul>
Key Contributions	Key Contributions	Key Contributions
<ul style="list-style-type: none"><li>▪ Implemented the Foundational Source Code.</li></ul>	<ul style="list-style-type: none"><li>▪ UML Class Diagram: Initial and Final Draft.</li></ul>	<ul style="list-style-type: none"><li>▪ Software Requirements and Specifications (SRS): Initial and Final Draft.</li></ul>

# Team Awesome – Dungeon Adventure 2.0

<b>James Godwin</b> The Brilliant Thinker	<b>Maddy Whitney</b> The Awesome Thinker	<b>Jannine G. D. MacGormain</b> The Fierce Thinker
<b>Key Contributions</b> <ul style="list-style-type: none"><li>▪ Refactored Source Code.</li><li>▪ Implemented Foundational Database.</li><li>▪ Database Tester.</li><li>▪ In-person Discussion Facilitator.</li><li>▪ Created Source Code Docstrings.</li></ul>	<b>Key Contributions</b> <ul style="list-style-type: none"><li>▪ Implemented the Foundational Source Code.</li><li>▪ Organized Python Modules into their respective directories.</li><li>▪ Refactored Source Code.</li><li>▪ Refined Database.</li><li>▪ Implemented Pickling.</li></ul>	<b>Key Contributions</b> <ul style="list-style-type: none"><li>▪ Organized and Combined working Source Code.</li><li>▪ Consolidated and Synchronized all working Source Code.</li><li>▪ Implemented 2D lists utilizing the import process for NumPy arrays (import numpy as np).</li><li>▪ Developed a breadth-first search (BFS) algorithm for dungeon maze traversal to ensure a valid path from the entrance to the exit.</li></ul>

# Team Awesome – Dungeon Adventure 2.0

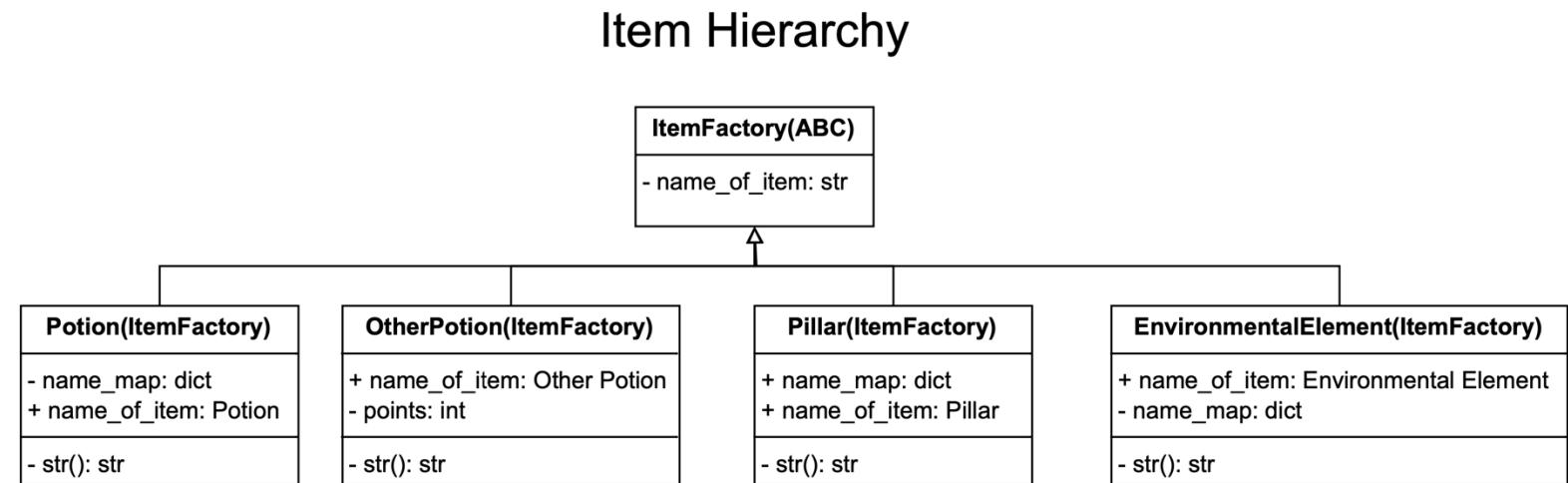
James Godwin The Brilliant Thinker	Maddy Whitney The Awesome Thinker	Jannine G. D. MacGormain The Fierce Thinker
Key Contributions	Key Contributions	Key Contributions
<ul style="list-style-type: none"><li>▪ Refined Foundational Playable Program from consolidated working source code.</li><li>▪ Conducted Source Code Test Cases</li><li>▪ Debugged Source Code.</li><li>▪ Implemented Additional Classes.</li><li>▪ Finalized Game Design and Mechanics.</li></ul>	<ul style="list-style-type: none"><li>▪ Refined Foundational Playable Program from consolidated working source code.</li><li>▪ Hosted Zoom and Google Meetings.</li><li>▪ Conducted Source Code Test Cases</li><li>▪ Debugged Source Code.</li><li>▪ Implemented Additional Classes.</li><li>▪ Finalized Game Design and Mechanics.</li></ul>	<ul style="list-style-type: none"><li>▪ Implemented Foundational Playable Program from consolidated working source code.</li><li>▪ Created Meeting Agendas.</li><li>▪ Implemented a standby GUI.</li><li>▪ Refined Source Code.</li><li>▪ Conducted Source Code Test Cases and Preliminary Unit Tests.</li><li>▪ Created Course Project Presentation Slides.</li><li>▪ Finalized Game Design and Mechanics.</li></ul>





# Unified Modeling Language (UML)

Class Diagram



# Factory Design Pattern

- Separates the instantiation logic from the objects themselves.

Pillar  
Factory

Monster  
Factory

# MVC DESIGN PATTERN

Model

View

Controller

# Model

Contains business logic and data.



# View

Renders the model into a form suitable for interaction, typically as a user interface element.  
Multiple views can exist for a single model for different purposes.

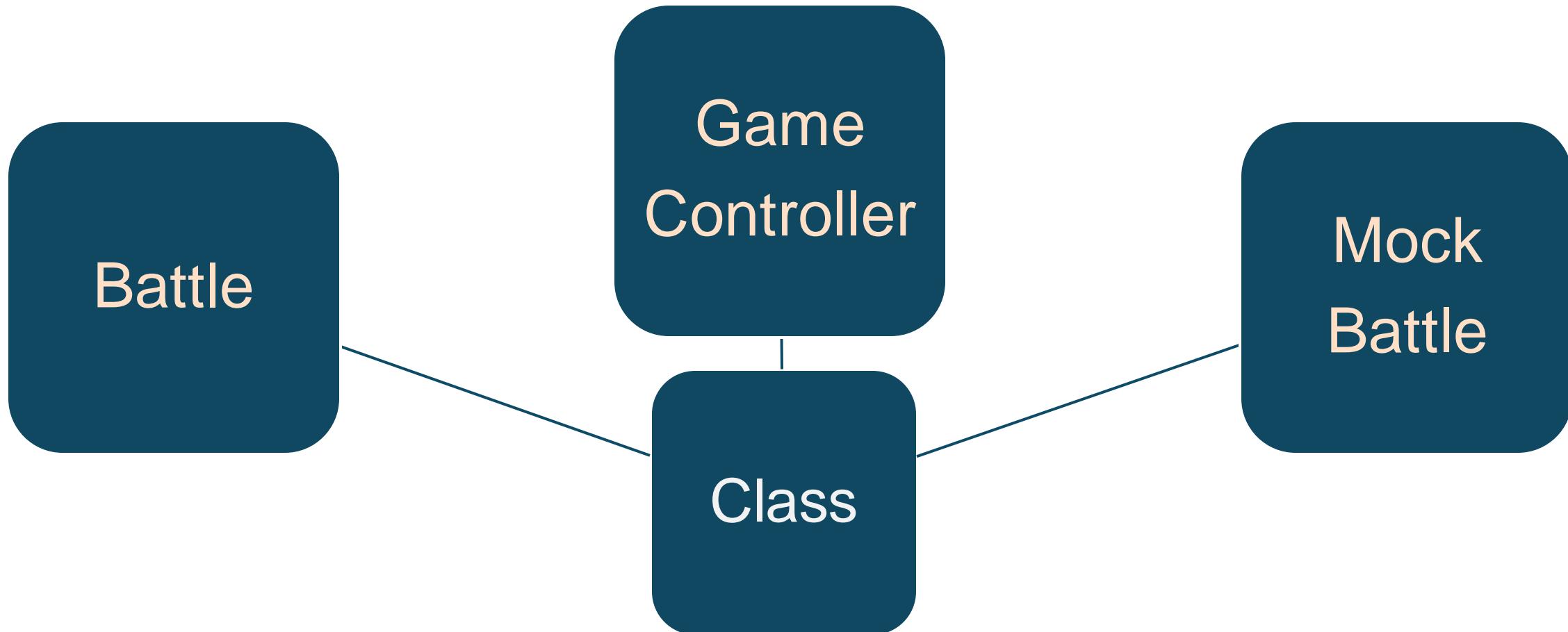
Class

GameView

# Controller

Passes user input from the VIEW to the MODEL, as necessary.  
The MODEL changes its state and notifies the VIEW.

It is responsible for calling input methods from the GameView class and processing the results, maintaining the separation of concerns.



# SQLite

## Standard Query Language Lite

- is a DATABASE engine and is recognized as the number one relational database.
- it is widely used for storing and managing data.

The screenshot shows the SQLite Database Browser interface. At the top, there are various menu options: New Database, Open Database, Write Changes, Revert Changes, Undo, Open Project, Save Project, Attach Database, Close Database. Below the menu is a toolbar with buttons for Create Table, Create Index, Modify Table, Delete Table, Print, and Refresh. The main area is titled "Database Structure" and displays the schema of a database. It shows two tables: "heroes" and "monsters". The "heroes" table has columns: name (TEXT, primary key), hit\_points (INTEGER), min\_damage (INTEGER), max\_damage (INTEGER), attack\_speed (INTEGER), chance\_to\_hit (REAL), chance\_to\_block (REAL), min\_heal (INTEGER), max\_heal (INTEGER), and special\_skill (TEXT). The "monsters" table has columns: name (TEXT, primary key), hit\_points (INTEGER), min\_damage (INTEGER), max\_damage (INTEGER), attack\_speed (INTEGER), chance\_to\_hit (REAL), chance\_to\_heal (REAL), min\_heal (INTEGER), max\_heal (INTEGER), is\_boss (BOOLEAN, default 0), and flavor\_text (TEXT). The schema is defined by the following CREATE TABLE statements:

```
CREATE TABLE heroes (name TEXT PRIMARY KEY, hit_points INTEGER, min_damage INTEGER, max_damage INTEGER, attack_speed INTEGER, chance_to_hit REAL, chance_to_block REAL, min_heal INTEGER, max_heal INTEGER, special_skill TEXT)
CREATE TABLE monsters (name TEXT PRIMARY KEY, hit_points INTEGER, min_damage INTEGER, max_damage INTEGER, attack_speed INTEGER, chance_to_hit REAL, chance_to_heal REAL, min_heal INTEGER, max_heal INTEGER, is_boss BOOLEAN DEFAULT 0, flavor_text TEXT)
```

# SQLite

## Standard Query Language Lite

- is a DATABASE engine and is recognized as the number one relational database.
- it is widely used for storing and managing data.

```
Run  database x

Single database connection established.
Tables created successfully.
Monsters inserted successfully.
Heroes inserted successfully.

--- Monsters in Database ---
('Ogre', 200, 30, 60, 2, 0.6, 0.1, 30, 60, 0, '')
('Gremlin', 70, 15, 30, 5, 0.8, 0.4, 20, 40, 0, '')
('Skeleton', 100, 30, 50, 3, 0.8, 0.3, 30, 50, 0, '')
('Mind Leech', 120, 20, 45, 4, 0.75, 0.3, 25, 45, 0, '')
('Ogre Boss', 500, 80, 120, 1, 0.7, 0.1, 50, 100, 1, 'The Ogre is more than muscle and rage-it is inevitability. A')
('Gremlin Boss', 150, 40, 60, 5, 0.9, 0.5, 40, 60, 1, 'The Gremlin is a master of bloodlines and stolen legacies. I')
('Skeleton Boss', 250, 50, 80, 3, 0.85, 0.4, 50, 80, 1, 'The Skeleton has mastered the art of becoming many while r')
('Mind Leech Boss', 300, 60, 100, 4, 0.85, 0.4, 60, 90, 1, 'The Mind Leech does not strike with claws or fangs-it b')
('Final Boss', 1000, 100, 150, 1, 0.8, 0.2, 100, 150, 1, 'You have fought, bled, and defied the odds to stand here.')

--- Heroes in Database ---
('Warrior', 20000, 30, 60, 2, 0.6, 0.1, 30, 60, 'Shield Block - Reduces damage from attacks')
('Thief', 70000, 15, 30, 5, 0.8, 0.4, 20, 40, 'Surprise Attack - Chance to gain an extra turn')
('Priestess', 10000, 30, 50, 3, 0.8, 0.3, 30, 50, 'Healing Touch - Heals the Priestess for a random amount of HP')

Database connection closed successfully.

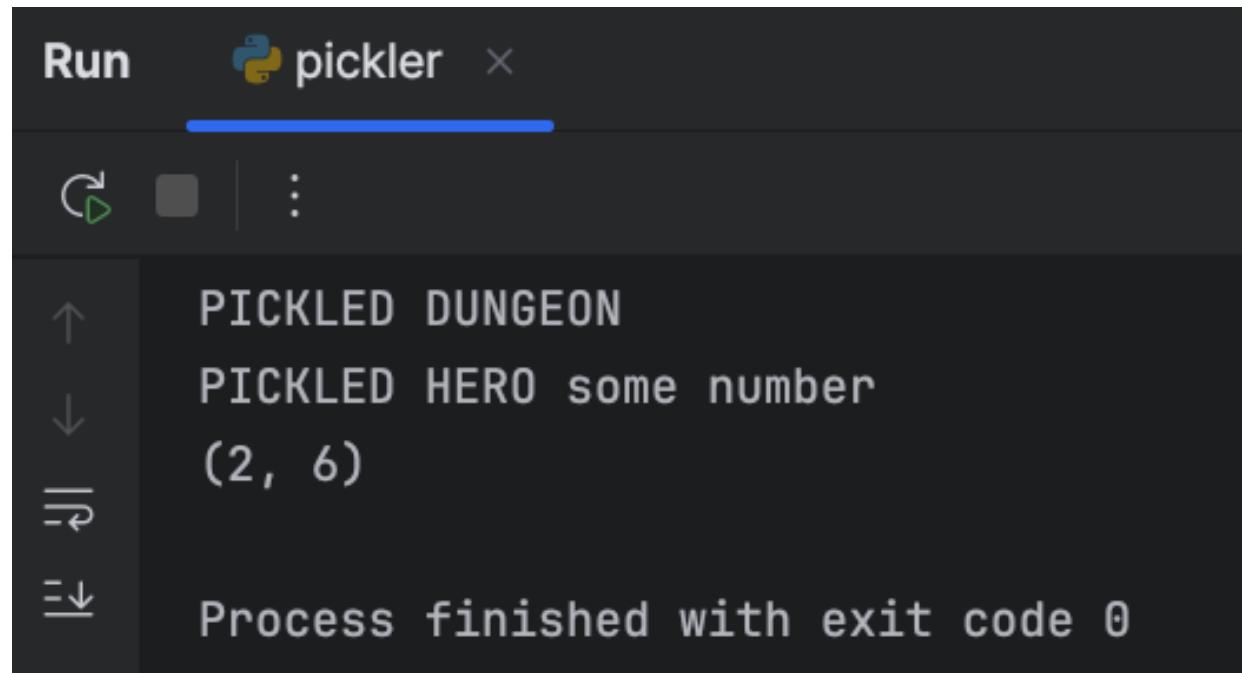
Process finished with exit code 0
```

# Pickling

A.K.A. Serialization

- The ability to save information about an object in memory to a file.

## Pickler Class



```
Run  ⚡ pickler ×
      ⏪ | : 
↑ ↓ ⌂ ⌂ 
PICKLED DUNGEON
PICKLED HERO some number
(2, 6)
Process finished with exit code 0
```

# Git and GitHub Version Control Overview

madswh

Overview Repositories 1 Projects Packages Stars 1

Pinned

[504DA\\_0306](#) (Public) Python

45 contributions in the last year

Learn how we count contributions

Less More

2025 2024 2023 2022

Contribution activity

March 2025

- Created 26 commits in 2 repositories
  - [madswh/504DA\\_0306](#) 21 commits
  - [madswh/504DungeonAdventure\\_new](#) 5 commits
- Created 1 repository
  - [madswh/504DA\\_0306](#) Python Built by Mar 6

February 2025

- Created 12 commits in 2 repositories
  - [madswh/504DungeonAdventure](#) 10 commits
  - [madswh/504DungeonAdventure\\_new](#) 2 commits
- Created 2 repositories
  - [madswh/504DungeonAdventure\\_new](#) Python Built by Feb 26
  - [madswh/504DungeonAdventure](#) Python Built by Feb 4

# Git and GitHub Version Control Overview

Screenshot of a GitHub user profile page for [jagtheqr](#).

**Popular repositories:**

- week1** Forked from [Garcix/week1](#) (Public)
- syllabus** Forked from [peterdt1/syllabus](#) (Public)  
Syllabus for PHYS434 Fall'15
- week2** Forked from [JamesonClark/week2](#) (Public)
- week3** Forked from [LPope/week3](#) (Public)
- week4** Forked from [lembcke/week4](#) (Public)
- week5** Forked from [LCueva/week5](#) (Public)  
Kundt's Tube  
LabVIEW

**Contributions in the last year:** 53 contributions in the last year.

**Contribution activity:**

- March 2025:** Created 42 commits in 2 repositories:
  - [madswh/504DA\\_0306](#) 30 commits
  - [madswh/504DungeonAdventure\\_new](#) 12 commits
- February 2025:** Created 1 commit in 1 repository:
  - [madswh/504DungeonAdventure](#) 1 commit
- January 2025:** Opened 1 pull request in 1 repository:
  - [madswh/504DungeonAdventure](#)
  - [James'-branch](#)

# Git and GitHub Version Control Overview

Signed in as  JgdmSDE89

Overview    Repositories 3    Projects    Packages    Stars

Popular repositories

[my\\_github\\_and\\_git\\_assignment](#)    Public  
Python

47 contributions in 2025

Contribution settings ▾    2025    2024

Less    More

Learn how we count contributions

Contribution activity

March 2025

- Created 18 commits in 2 repositories
  - [madswh/504DA\\_0306](#) 10 commits
  - [madswh/504DungeonAdventure\\_new](#) 8 commits

February 2025

- Created 23 commits in 2 repositories
  - [madswh/504DungeonAdventure](#) 15 commits
  - [madswh/504DungeonAdventure\\_new](#) 8 commits

Feb 18

Opened 1 pull request in 1 repository

- [madswh/504DungeonAdventure](#)

Team Awesome - Dungeon Adventure 2.0

1 merged

# YouTrack Project Management Report

Sprint	Task Cards	Problem Encountered	Lessons Learned
Sprint 0	No Task Cards created yet.  Analysis and Planning Phase	No problems encountered thus far!	This is just the beginning of what's coming!
Sprint 1	8 Task Cards:  Screenshots of the task card details are attached to the First Iteration Deliverables	The initial learning curve for YouTrack was a bit confusing; however, the team successfully navigated its functionalities.	Trust in each other's strengths. Help each other. We are not Team Awesome for nothing!

# YouTrack Project Management Report

Sprint	Task Cards	Problem Encountered	Lessons Learned
Sprint 2	9 Task Cards:  Screenshots of the task card details are attached to the Second Iteration Deliverables	Trial and error code spikes and implementations.	Relax and chill; there's no free laptop out there!

# YouTrack Project Management Report

Sprint	Task Cards	Problem Encountered	Lessons Learned
Sprint 3	<p>11 Task Cards:</p> <p>Screenshots of the task card details are attached to the Third Iteration Deliverables</p>	<p>Ideas are diverging:</p> <p>Key 1 traversed Node A.</p> <p>Key 2 traversed Node B.</p> <p>Key 3 traversed Node C.</p> <pre>from abc import ABC, abstractmethod class TeamAwesome(ABC):     @abstractmethod     def __init__(self, name)         self.__name = name      @property     def name(self):         return self.__name     @name.setter     def name(self, name)         self.__name = name      @abstractmethod     def functions(self):         pass</pre>	<p>Communication is the key.</p> <p>If not, conversation is locked!</p>

# YouTrack Project Management Report

Sprint	Task Cards	Problem Encountered	Lessons Learned
Sprint 4	<p>18 Task Cards:</p> <p>Screenshots of the task card details are attached to the Fourth Iteration Deliverables</p>	The initial merging of the final phase of the working source codes was challenging; however, the team managed to combine, organize, synchronize, and make the program work.	Laugh at your program errors. If you don't, you will cry over it!

# YouTrack Project Management Report

Sprint	Task Cards	Problem Encountered	Lessons Learned
Sprint 5	24 Task Cards:  Screenshots of the task card details are attached to the Final Formal Iteration Deliverables	Integrating the working source code to establish a connection with the database was overwhelming.  Paying close attention to relative and absolute paths.	<pre>def initialize_team_awesome_brain(self):     print("1. James – the Brilliant thinker!")     print("2. Maddy – the Awesome thinker!")     print("3. Jannine – the Fierce thinker!")      while True:         try:             brainstorming = int(input("Please think!: "))             if brainstorming in [1, 2, 3]:                 return brainstorming             else:                 print("Invalid brain! Please select a valid brain.")         except ValueError:             print("Brain is not functioning!")</pre>

# YouTrack Project Management Report

Total Time Spent (from Sprint 1 to Sprint 5):

The screenshot shows the YouTrack Project Management Report interface. On the left, there's a sidebar with icons for Issues, Dashboards, Agile Boards, Reports (which is selected), Projects, Knowledge Base, Timesheets, and Gantt Charts. The main area displays a report titled "TeamAwesomeDungeonAdventure2.0(TCSS 504), <no query> Timesheet report". It has two filtering options: "per user" (selected) and "per issue". The report table shows data for February and March, with columns for "Users", "Total time", and dates from "03-09" to "24-02" and "03-09". The "Total time" row shows 286h 04m. Individual user rows show their names and time spent per week.

Users	Total time	Feb				Mar
		03-09	10-16	17-23	24-02	03-09
Jannine	286h 04m	30h 59m	38h 00m	49h 35m	69h 45m	97h 45m
maddy		194h 30m	14h 30m	24h 00m	36h 00m	53h 00m
James Godwin		44h 59m	8h 29m	4h 30m	3h 30m	7h 00m
		46h 35m	8h 00m	9h 30m	10h 05m	9h 45m

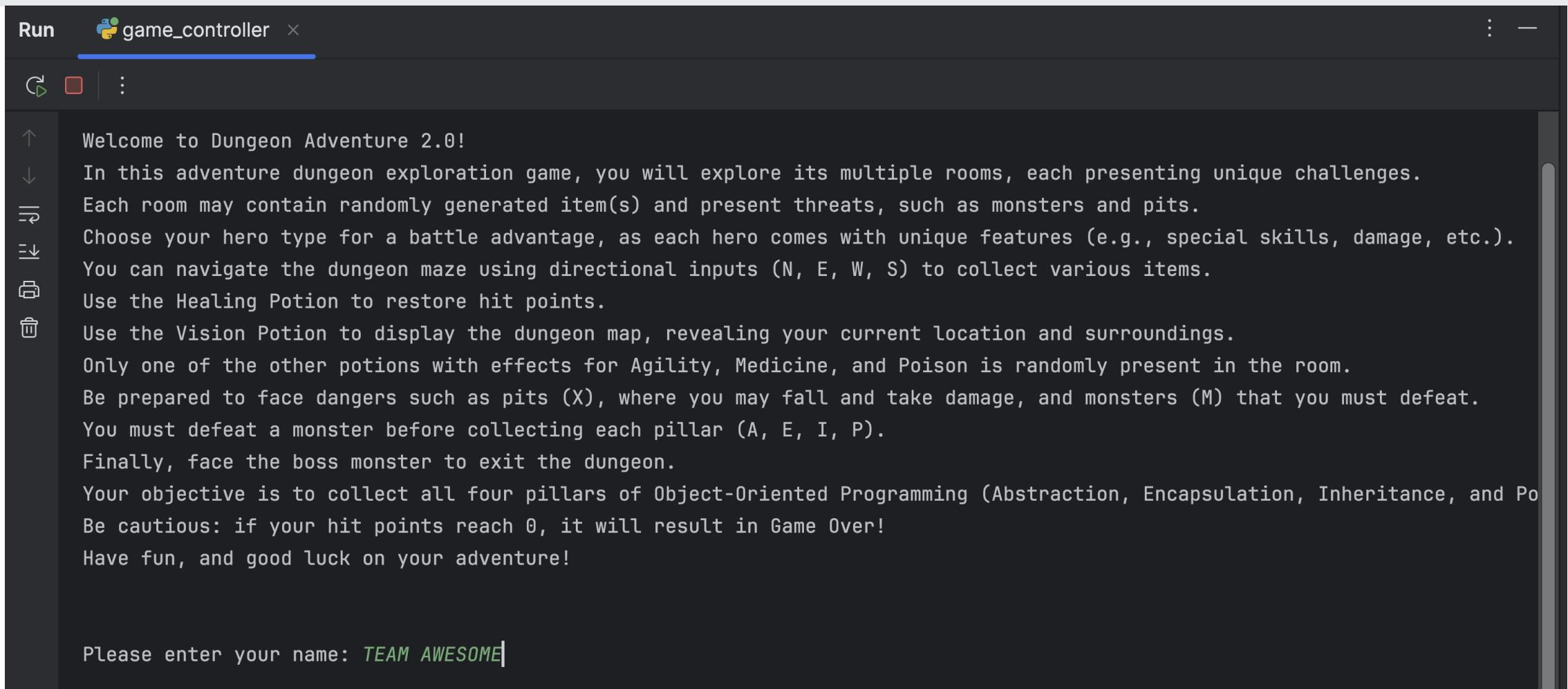
The following slides are for illustration purposes only.

The Final Course Project, which integrates Pickling, a Database, and additional classes, will be demonstrated live shortly.

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## Preliminary Game Design and Mechanics:

### 1. Game Introduction and Welcome Message:



The screenshot shows a terminal window titled "game\_controller". The window contains the following text:

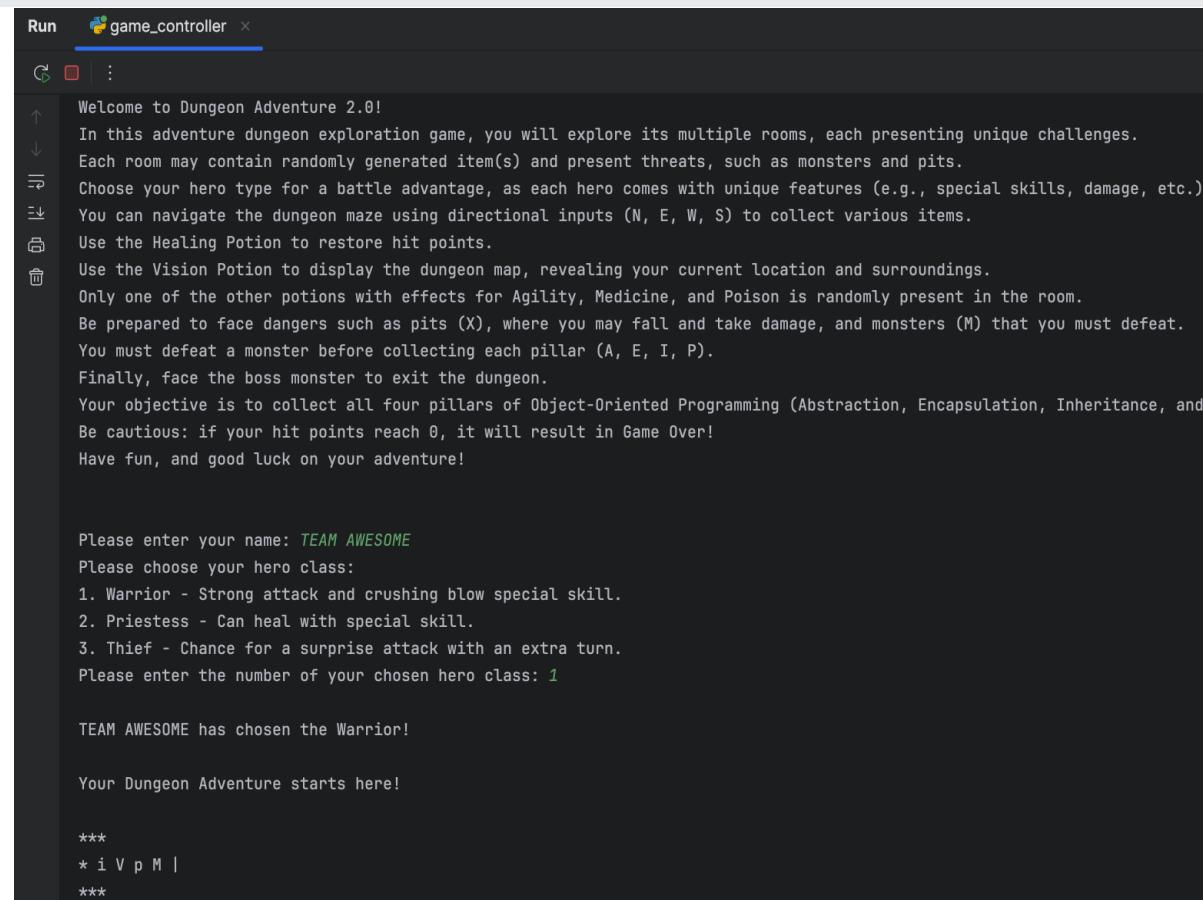
```
Welcome to Dungeon Adventure 2.0!
In this adventure dungeon exploration game, you will explore its multiple rooms, each presenting unique challenges.
Each room may contain randomly generated item(s) and present threats, such as monsters and pits.
Choose your hero type for a battle advantage, as each hero comes with unique features (e.g., special skills, damage, etc.).
You can navigate the dungeon maze using directional inputs (N, E, W, S) to collect various items.
Use the Healing Potion to restore hit points.
Use the Vision Potion to display the dungeon map, revealing your current location and surroundings.
Only one of the other potions with effects for Agility, Medicine, and Poison is randomly present in the room.
Be prepared to face dangers such as pits (X), where you may fall and take damage, and monsters (M) that you must defeat.
You must defeat a monster before collecting each pillar (A, E, I, P).
Finally, face the boss monster to exit the dungeon.
Your objective is to collect all four pillars of Object-Oriented Programming (Abstraction, Encapsulation, Inheritance, and Polymorphism).
Be cautious: if your hit points reach 0, it will result in Game Over!
Have fun, and good luck on your adventure!
```

Please enter your name: TEAM AWESOME

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 2. Player Name Entry and Hero Selection:

The player enters a name and chooses a hero type for a battle advantage. Each hero has unique features (e.g., special skills, damage, etc.).



Welcome to Dungeon Adventure 2.0!  
In this adventure dungeon exploration game, you will explore its multiple rooms, each presenting unique challenges.  
Each room may contain randomly generated item(s) and present threats, such as monsters and pits.  
Choose your hero type for a battle advantage, as each hero comes with unique features (e.g., special skills, damage, etc.).  
You can navigate the dungeon maze using directional inputs (N, E, W, S) to collect various items.  
Use the Healing Potion to restore hit points.  
Use the Vision Potion to display the dungeon map, revealing your current location and surroundings.  
Only one of the other potions with effects for Agility, Medicine, and Poison is randomly present in the room.  
Be prepared to face dangers such as pits (X), where you may fall and take damage, and monsters (M) that you must defeat.  
You must defeat a monster before collecting each pillar (A, E, I, P).  
Finally, face the boss monster to exit the dungeon.  
Your objective is to collect all four pillars of Object-Oriented Programming (Abstraction, Encapsulation, Inheritance, and Polymorphism).  
Be cautious: if your hit points reach 0, it will result in Game Over!  
Have fun, and good luck on your adventure!

Please enter your name: **TEAM AWESOME**  
Please choose your hero class:  
1. Warrior - Strong attack and crushing blow special skill.  
2. Priestess - Can heal with special skill.  
3. Thief - Chance for a surprise attack with an extra turn.  
Please enter the number of your chosen hero class: **1**

TEAM AWESOME has chosen the Warrior!  
Your Dungeon Adventure starts here!

\*\*\*  
\* i V p M |  
\*\*\*

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 3. Player Exploration Mechanics

The player will explore a dungeon with multiple rooms.

Each room may contain randomly generated item(s) and present threats, such as monsters and pits.

### Item Categorization

#### All Types of Items:

Each item has an associated symbol and its description.

#### *Inventory Items:*

##### Pillars (i.e., A, E, I, P):

A – Abstraction

E – Encapsulation

I – Inheritance

P – Polymorphism

The screenshot shows a terminal window titled "game\_controller". The log starts with the player entering their name ("TEAM AWESOME") and choosing a hero class ("Warrior"). It then displays room features (Monster: Skeleton, HP: 100), inventory items (Healing Potion), and environmental elements (Entrance). Finally, it logs a wild skeleton appearing and provides its information (Name: Skeleton, HP: 100, Attack Damage: 30-50).

```
Please enter your name as the Adventurer: TEAM AWESOME
Please choose your hero class:
1. Warrior - Strong attack and crushing blow special skill.
2. Priestess - Can heal with special skill.
3. Thief - Chance for a surprise attack with an extra turn.

Please enter the number of your chosen hero class: 1

TEAM AWESOME has chosen the Warrior!

Your Dungeon Adventure starts here!

*** * i H p M | ***
*** Room Features:
Monster: Skeleton
HP: 100

Inventory Item(Potion):
Healing Potion

Inventory Item(Other Potion):
Medicine

Environmental Element:
Entrance

A wild Skeleton has appeared!

--- Skeleton Information ---
Monster Name: Skeleton
HP: 100
Attack Damage: 30-50
--- End of Skeleton Information ---
```

Potions (i.e., H, V):  
H – Healing Potion  
V – Vision Potion

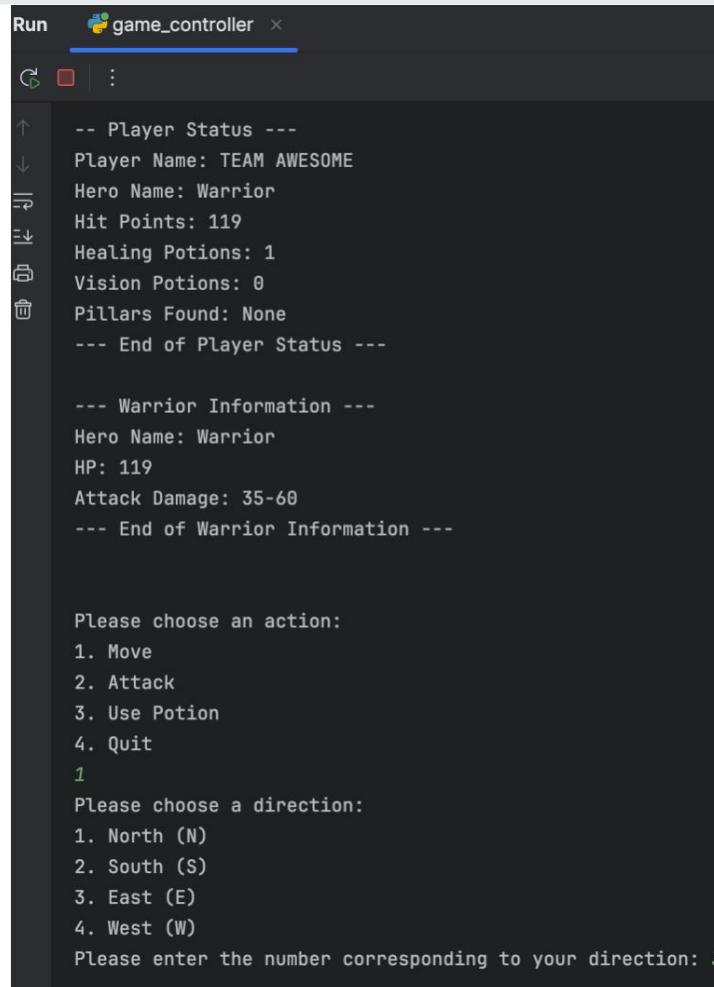
Other Potions:  
"p" for Agility, Medicine, and Poison.

*Environmental Elements:*  
i – Entrance  
O – Exit  
X – Pit  
M – Monster

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 4. Player Movement

The player can move around the dungeon maze using directional inputs (N, E, W, S).



```
Run game_controller ×
G | :  
↑ ↓ ← →  
-- Player Status ---  
Player Name: TEAM AWESOME  
Hero Name: Warrior  
Hit Points: 119  
Healing Potions: 1  
Vision Potions: 0  
Pillars Found: None  
--- End of Player Status ---  
  
--- Warrior Information ---  
Hero Name: Warrior  
HP: 119  
Attack Damage: 35-60  
--- End of Warrior Information ---  
  
Please choose an action:  
1. Move  
2. Attack  
3. Use Potion  
4. Quit  
1  
Please choose a direction:  
1. North (N)  
2. South (S)  
3. East (E)  
4. West (W)  
Please enter the number corresponding to your direction: 3
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 5. Item Collection

The player collects healing potions.

The player collects vision potions.

```
Run game_controller ×

↑ ↓ ⌂ ⌂ ⌂ 
***  
* i H p M |  
***  
  
Room Features:  
Monster: Skeleton  
HP: 100  
  
Inventory Item(Potion):  
Healing Potion  
  
Inventory Item(Other Potion):  
Medicine  
Environmental Element:  
Entrance  
  
A wild Skeleton has appeared!  
  
--- Skeleton Information ---  
Monster Name: Skeleton  
HP: 100  
Attack Damage: 30-50  
--- End of Skeleton Information ---  
  
You found a Healing Potion!  
You used Medicine and restored 19 HP from the Poison inflicted by Skeleton!
```

```
Run game_controller ×

↑ ↓ ⌂ ⌂ ⌂ 
Please choose a direction:  
1. North (N)  
2. South (S)  
3. East (E)  
4. West (W)  
Please enter the number corresponding to your direction: 2  
  
*-*  
| V X |  
***  
  
Room Features:  
  
Inventory Item(Potion):  
Vision Potion  
  
Environmental Element:  
Pit  
  
You found a Vision Potion!  
  
You fell into a pit and took 21 damage!
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## Continuation for 5. Item Collection:

The player collects pillars (i.e., A, E, I, P).

```
Run game_controller ×
G □ ⋮
Please choose an action:
1. Move
2. Attack
3. Use Potion
4. Quit
2
Skeleton has fainted!

TEAM AWESOME the Warrior attacks Skeleton for 59 damage!

--- Current HP Status ---
TEAM AWESOME the Warrior HP: 45
VS.
Skeleton HP: -4
--- End of HP Status ---

Skeleton has been defeated!

You defeated the Skeleton and collected the Encapsulation pillar!
```

```
Run game_controller ×
G □ ⋮
Skeleton has been defeated!

You defeated the Skeleton and collected the Encapsulation pillar!
*** 
|   *
** 

Room Features:
No features

-- Player Status --
Player Name: TEAM AWESOME
Hero Name: Warrior
Hit Points: 45
Healing Potions: 2
Vision Potions: 1
Pillars Found: Inheritance, Encapsulation
--- End of Player Status ---

--- Warrior Information --
Hero Name: Warrior
HP: 45
Attack Damage: 35-60
--- End of Warrior Information ---

Please choose an action:
1. Move
2. Attack
3. Use Potion
4. Quit
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 6. Item Usage:

V - Vision Potion to display the dungeon map and reveal the player's current location and surroundings.

```
Run game_controller ×

↑ Please choose an action:
↓ 1. Move
→ 2. Attack
← 3. Use Potion
→ 4. Quit
3
Choose a potion to use:
1. Healing Potion
2. Vision Potion
Please enter the number corresponding to your potion: 2

Vision potion used. Revealing the entire dungeon:

Room(0, 0) Room(0, 1) Room(0, 2) Room(0, 3) Room(0, 4)
*** *** **-*
*i M | * | | V p M | | V X | | V X *
*** *** **-* *** ***

Room(1, 0) Room(1, 1) Room(1, 2) Room(1, 3) Room(1, 4)
*-* *** **-*
| | | H V X | * H X | * H V p M * * O H V X |
*** **-* *** *** **-*

YOU ARE HERE!
Room(2, 0) Room(2, 1) Room(2, 2) Room(2, 3) Room(2, 4)
*** *** *** *** ***
| * * H p M | * H V X | * H p M | * i H V X *
**-* *** **-* *** ***
```

```
Run game_controller ×

YOU ARE HERE!
Room(2, 0) Room(2, 1) Room(2, 2) Room(2, 3) Room(2, 4)
*** *** *** *** ***
| * * H p M | * H V X | * H p M | * i H V X *
**-* *** **-* *** *** ***

Room(3, 0) Room(3, 1) Room(3, 2) Room(3, 3) Room(3, 4)
**-* *** **-*
| H V p M * * V p M * | p M | | V X | | H V X |
**-* *** *** *** **-* ***

Room(4, 0) Room(4, 1) Room(4, 2) Room(4, 3) Room(4, 4)
**-* *** **-*
| H X * | V X | * I M * | V X | * O H V X *
**-* *** *** **-* *** **-*

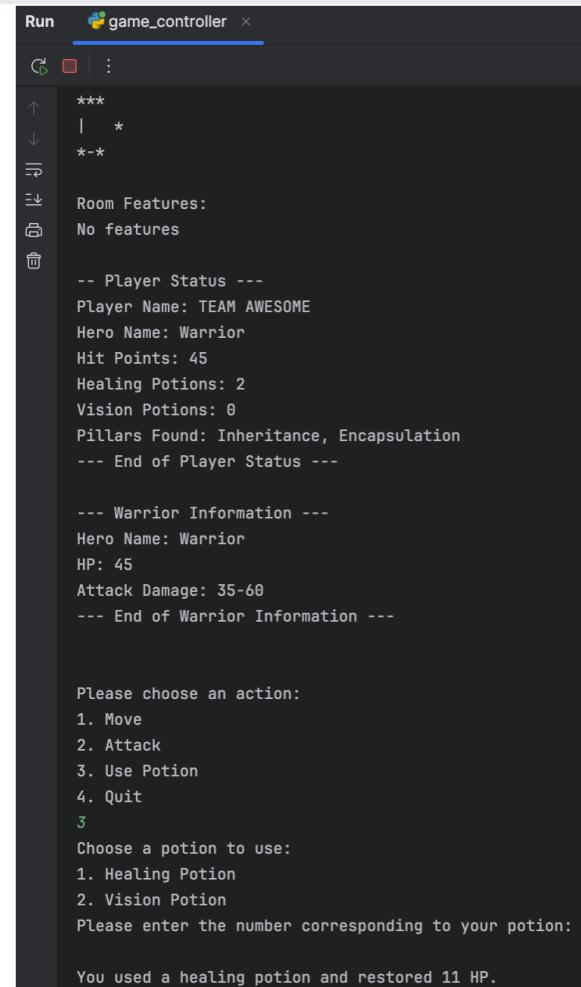
*** 
| *
**-*
|
Room Features:
No features

-- Player Status --
Player Name: TEAM AWESOME
Hero Name: Warrior
Hit Points: 45
Healing Potions: 2
Vision Potions: 0
Pillars Found: Inheritance, Encapsulation
--- End of Player Status ---
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## Continuation for 6. Item Usage:

H - Healing Potion to restore hit points.



The screenshot shows a terminal window titled "game\_controller". The output displays player and hero information, followed by a menu for choosing actions and using potions.

```
Run game_controller x
***| *--*
Room Features:
No features

-- Player Status ---
Player Name: TEAM AWESOME
Hero Name: Warrior
Hit Points: 45
Healing Potions: 2
Vision Potions: 0
Pillars Found: Inheritance, Encapsulation
--- End of Player Status ---

--- Warrior Information ---
Hero Name: Warrior
HP: 45
Attack Damage: 35-60
--- End of Warrior Information ---

Please choose an action:
1. Move
2. Attack
3. Use Potion
4. Quit
3
Choose a potion to use:
1. Healing Potion
2. Vision Potion
Please enter the number corresponding to your potion: 1
You used a healing potion and restored 11 HP.
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 7. Other Potions Effects

- p – Agility: The player picks up an Agility potion and dodges an attack from a monster.
- p – Medicine: The player uses Medicine and restores HP from poison inflicted by a monster.
- p – Poison: A monster inflicts poison on the player, causing damage.

```
Run game_controller x

A wild Skeleton has appeared!

--- Skeleton Information ---
Monster Name: Skeleton
HP: 100
Attack Damage: 30-50
--- End of Skeleton Information ---

You picked up an Agility potion and dodged an attack with a speed of 15 from Skeleton!

-- Player Status ---
Player Name: TEAM AWESOME
Hero Name: Warrior
Hit Points: 1000
Healing Potions: 0
Vision Potions: 0
Pillars Found: None
--- End of Player Status ---

--- Warrior Information ---
Hero Name: Warrior
HP: 1000
Attack Damage: 35-60
--- End of Warrior Information ---

Please choose an action:
1. Move
2. Attack
3. Use Potion
4. Quit
2
```

```
Run game_controller x

*** * i O p M *
*** Room Features:
Monster: Ogre
HP: 200

Inventory Item(Other Potion):
Poison
Environmental Element:
Entrance

Environmental Element:
Exit

A wild Ogre has appeared!

--- Ogre Information ---
Monster Name: Ogre
HP: 200
Attack Damage: 30-60
--- End of Ogre Information ---

You were poisoned by Ogre and took 26 damage!
```

```
Run game_controller x

*** * i H V p M *
*** Room Features:
Monster: Ogre
HP: 200

Inventory Item(Potion):
Healing Potion

Inventory Item(Potion):
Vision Potion

Inventory Item(Other Potion):
Medicine
Environmental Element:
Entrance

A wild Ogre has appeared!

--- Ogre Information ---
Monster Name: Ogre
HP: 200
Attack Damage: 30-60
--- End of Ogre Information ---

You found a Healing Potion!

You found a Vision Potion!
You used Medicine and restored 15 HP from the Poison inflicted by Ogre!
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 8. Dangers

X – Pit: The player falls into a pit and takes damage.

M – Monster: The player fights a monster and a boss monster.

Each monster has unique features (i.e., damage, chance to heal, etc.).

```
Run game_controller ×

Please choose a direction:
1. North (N)
2. South (S)
3. East (E)
4. West (W)
Please enter the number corresponding to your direction: 2

**|
 | V X |
 ***

Room Features:

Inventory Item(Potion):
Vision Potion

Environmental Element:
Pit

You found a Vision Potion!

You fell into a pit and took 21 damage!
```

```
Run game_controller ×

***| M ***
***

Room Features:
Monster: Ogre
HP: 200

A wild Ogre has appeared!

--- Ogre Information ---
Monster Name: Ogre
HP: 200
Attack Damage: 30-60
--- End of Ogre Information ---

-- Player Status --
Player Name: TEAM AWESOME
Hero Name: Warrior
Hit Points: 89
Healing Potions: 2
Vision Potions: 2
Pillars Found: None
--- End of Player Status ---

--- Warrior Information --
Hero Name: Warrior
HP: 89
Attack Damage: 35-60
--- End of Warrior Information ---


```

```
Run game_controller ×

--- Current HP Status ---
TEAM AWESOME the Warrior HP: 250
VS.
The Dark Lord HP: 41
--- End of HP Status ---

The Dark Lord attacks you for 80 damage!
The Dark Lord heals for 53 hit points!

Please choose an action:
1. Move
2. Attack
3. Use Potion
4. Quit
2

TEAM AWESOME the Warrior performs a Crushing Blow dealing 117 damage!
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 9. Combat Mechanics with Monsters and Boss Monster:

The player must defeat a monster before collecting each pillar found (i.e., A, E, I, P).  
The player faces the boss monster and must defeat it to exit the dungeon.

```
Run game_controller ×
Run game_controller ×
Run game_controller ×
Run game_controller ×

***  
| i I H M *  
***  
  
Room Features:  
Monster: Ogre  
HP: 200  
  
Inventory Item(Pillar):  
Inheritance  
  
Inventory Item(Potion):  
Healing Potion  
Environmental Element:  
Entrance  
  
A wild Ogre has appeared!  
  
--- Ogre Information ---  
Monster Name: Ogre  
HP: 200  
Attack Damage: 30-60  
--- End of Ogre Information ---  
  
You see a pillar: Inheritance  
  
Defeat the monster before collecting the pillar!  
  
You found a Healing Potion!
```

```
Ogre attacks you for 34 damage!  
  
Please choose an action:  
1. Move  
2. Attack  
3. Use Potion  
4. Quit  
2  
  
TEAM AWESOME the Warrior attacks Ogre for 47 damage!  
  
--- Current HP Status ---  
TEAM AWESOME the Warrior HP: 1466  
VS.  
Ogre HP: 107  
--- End of HP Status ---  
  
Ogre attacks you for 59 damage!  
  
Please choose an action:  
1. Move  
2. Attack  
3. Use Potion  
4. Quit  
2  
  
Ogre has fainted!  
  
TEAM AWESOME the Warrior attacks Ogre for 43 damage!  
  
--- Current HP Status ---  
TEAM AWESOME the Warrior HP: 1197  
VS.  
Ogre HP: -17  
--- End of HP Status ---  
  
Ogre has been defeated!
```

```
Ogre attacks you for 55 damage!  
  
Please choose an action:  
1. Move  
2. Attack  
3. Use Potion  
4. Quit  
2  
  
Ogre attacks you for 51 damage!  
  
Please choose an action:  
1. Move  
2. Attack  
3. Use Potion  
4. Quit  
2  
  
Ogre has fainted!  
  
TEAM AWESOME the Warrior attacks Ogre for 43 damage!  
  
--- Current HP Status ---  
TEAM AWESOME the Warrior HP: 1197  
VS.  
Ogre HP: -17  
--- End of HP Status ---  
  
Ogre has been defeated!
```

```
--- Current HP Status ---  
TEAM AWESOME the Warrior HP: 250  
VS.  
The Dark Lord HP: 41  
--- End of HP Status ---  
  
The Dark Lord attacks you for 80 damage!  
The Dark Lord heals for 53 hit points!  
  
Please choose an action:  
1. Move  
2. Attack  
3. Use Potion  
4. Quit  
2  
TEAM AWESOME the Warrior performs a Crushing Blow dealing 117 damage!  
The Dark Lord has been defeated! You can now exit the dungeon.  
  
TEAM AWESOME the Warrior attacks The Dark Lord for 117 damage!  
  
--- Current HP Status ---  
TEAM AWESOME the Warrior HP: 170  
VS.  
The Dark Lord HP: -23  
--- End of HP Status ---  
  
The Dark Lord has been defeated!  
  
Congratulations! You've defeated the boss, collected the 4 pillars, and exited the dungeon! You win!  
  
Process finished with exit code 0
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 10. Quit Game:

The player can quit the game at any time.

```
Run  game_controller x
Run | : 
Up | Player Status --- 
Down | Player Name: TEAM AWESOME 
Left | Hero Name: Warrior 
Right | Hit Points: 1129 
Shift-Left | Healing Potions: 3 
Shift-Right | Vision Potions: 0 
Delete | Pillars Found: Inheritance, Abstraction, Encapsulation 
--- End of Player Status --- 

--- Warrior Information --- 
Hero Name: Warrior 
HP: 1129 
Attack Damage: 35-60 
--- End of Warrior Information --- 

Please choose an action: 
1. Move 
2. Attack 
3. Use Potion 
4. Quit 
4 
Are you sure you want to quit? 
1. Yes 
2. No 

Please enter the number corresponding to your choice: 1 
Thank you for playing! 

Process finished with exit code 0
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## 11. Winning Condition:

The player must collect all four pillars of Object-Oriented Programming (Abstraction, Encapsulation, Inheritance, and Polymorphism), find the exit, and defeat the boss monster to win the game.

```
Run game_controller x

--- Current HP Status ---
TEAM AWESOME the Warrior HP: 250
VS.
The Dark Lord HP: 41
--- End of HP Status ---

The Dark Lord attacks you for 80 damage!
The Dark Lord heals for 53 hit points!

Please choose an action:
1. Move
2. Attack
3. Use Potion
4. Quit
2
TEAM AWESOME the Warrior performs a Crushing Blow dealing 117 damage!
The Dark Lord has been defeated! You can now exit the dungeon.

TEAM AWESOME the Warrior attacks The Dark Lord for 117 damage!

--- Current HP Status ---
TEAM AWESOME the Warrior HP: 170
VS.
The Dark Lord HP: -23
--- End of HP Status ---

The Dark Lord has been defeated!

Congratulations! You've defeated the boss, collected the 4 pillars, and exited the dungeon! You win!

Process finished with exit code 0
```

## 12. Losing Condition:

If the player's hit points reach 0, it will result in Game Over!

```
Run game_controller x

** 
| H X |
**

Room Features:
Inventory Item(Potion):
Healing Potion

Environmental Element:
Pit

You found a Healing Potion!

You fell into a pit and took 36 damage!

-- Player Status ---
Player Name: TEAM AWESOME
Hero Name: Warrior
Hit Points: -4
Healing Potions: 4
Vision Potions: 1
Pillars Found: Inheritance, Encapsulation
--- End of Player Status ---

--- Warrior Information ---
Hero Name: Warrior
HP: -4
Attack Damage: 35-60
--- End of Warrior Information ---

Game Over! You have no more hit points.

Process finished with exit code 0
```

```
Run game_controller x

-- Player Status ---
Player Name: TEAM AWESOME
Hero Name: Warrior
Hit Points: -4
Healing Potions: 4
Vision Potions: 1
Pillars Found: Inheritance, Encapsulation
--- End of Player Status ---

--- Warrior Information ---
Hero Name: Warrior
HP: -4
Attack Damage: 35-60
--- End of Warrior Information ---

Game Over! You have no more hit points.

Process finished with exit code 0
```

# COURSE PROJECT: TEAM AWESOME - DUNGEON ADVENTURE 2.0

## Preliminary Unit Tests

Preliminary unit tests were conducted to ensure that the functions performed as intended.

unit\_tests\_for\_Room\_ItemFactory\_MonsterFactory.py

```
4 import unittest
5 from room import Room
6 from pillar import Pillar
7 from potion import Potion
8 from other_potion import OtherPotion
9 from environmental_element import EnvironmentalElement
10 from monster_factory import MonsterFactory, Ogre, Gremlin, Skeleton
11
12 class TestRoom(unittest.TestCase):
13     def setUp(self):
14         # Set up a new room instance for each test without random contents.
15         self.room = Room(initialize_contents=False)
16
17     def test_room_initialization(self):
18         # Test the initialization of the room.
19         self.assertFalse(self.room.has_healing_potion)
20         self.assertFalse(self.room.has_vision_potion)
21         self.assertIsNone(self.room.has_other_potion)
22         self.assertFalse(self.room.has_pit)
23         self.assertFalse(self.room.is_entrance)
24         self.assertFalse(self.room.is_exit)
25         self.assertIsNone(self.room.pillar)
26         self.assertIsNone(self.room.monster)
27
```

Run Python tests in unit\_tests\_for\_Room\_ItemFactory\_Mons... x

Test Results 0 ms Tests passed: 12 of 12 tests – 0 ms

Testing started at 7:43 PM ...

Launching unittests with arguments python -m unittest /Users/...

Ran 12 tests in 0.001s

OK

unit\_tests\_dungeon.py

```
9 class TestDungeon(unittest.TestCase):
10     def setUp(self):
11         # Set up a new instance of the dungeon for testing.
12         self.dungeon = Dungeon(width=5, height=5)
```

Run Python tests in unit\_tests\_dungeon.py x

Test Results 0 ms Tests passed: 6 of 6 tests – 0 ms

Testing started at 7:50 PM ...

Launching unittests with arguments python -m unittest /Users/...

YOU ARE HERE!

Room(0, 0)	Room(0, 1)	Room(0, 2)
***	**	**
i X *	* p M *	* V p M
***	***	**

Room(1, 0)	Room(1, 1)	Room(1, 2)
**	***	**
* i p M *	* H V p M	* E M *
***	**	**

Room(2, 0)	Room(2, 1)	Room(2, 2)
**	***	**
* H V X	* V X *	H X
***	**	**

Room(3, 0)	Room(3, 1)	Room(3, 2)
**	**	***
* p M *	* V p M *	* H p M
***	***	***

unit\_tests\_for\_DungeonCharacter\_Heroes\_and\_Monsters.py

```
10 from warrior import Warrior
11 from priestess import Priestess
12 from thief import Thief
13
14 class TestWarrior(unittest.TestCase):
15     def setUp(self):
16         # Set up a new Warrior instance for each test.
17         self.warrior = Warrior('Test Warrior...TEAM AWESOME')
```

Run Python tests in unit\_tests\_for\_DungeonCharacter\_Hero... x

Test Results 0 ms Tests passed: 15 of 15 tests – 0 ms

Launching unittests with arguments python -m unittest /Users/...

Ran 15 tests in 0.003s

OK

Test Boss Monster...Boss Monster unleashes a powerful attack

Test Gremlin...A wild Gremlin slashes TEAM AWESOME the Priest

Test Ogre...A wild Ogre smashes TEAM AWESOME the Warrior for

Test Priestess...TEAM AWESOME the Priestess heals for 50 hit

Test Skeleton...A wild Skeleton slices TEAM AWESOME the Thief

Test Thief...TEAM AWESOME the Thief attacks normally.

Test Warrior...TEAM AWESOME the Warrior attacks Ogre for 53 d

Process finished with exit code 0

Thank You!

James Godwin

*the Brilliant thinker*

Maddy Whitney

*the Awesome thinker*

Jannine G. D. MacGormain

*the Fierce thinker*

# COURSE PROJECT: DUNGEON ADVENTURE 2.0

A path exists from the entrance to the exit.

YOU ARE HERE!

Room(0, 0)

\*\*-

| i E V M |

\*\*\*

Room(0, 1)

\*\*-

\* E H M \*

\*\*\*

Room(0, 2)

\*\*-

\* P H M \*

\*\*\*

Room(0, 3)

\*\*-

| I M |

\*\*\*

Room(0, 4)

\*\*-

| i P V M \*

\*\*-

Room(1, 0)

\*\*-

\* A H M |

\*\*-

Room(1, 1)

\*\*-

\* P H M \*

\*\*-

Room(1, 2)

\*\*\*

\* P V M |

\*\*-

Room(1, 3)

\*\*\*

| i I M |

\*\*\*

Room(1, 4)

\*\*-

\* I V M |

\*\*-

Room(2, 0)

\*\*\*

\* i E V M |

\*\*-

Room(2, 1)

\*\*\*

\* E V M \*

\*\*-

Room(2, 2)

\*\*-

\* E H M |

\*\*\*

Room(2, 3)

\*\*-

\* I M \*

\*\*\*

Room(2, 4)

\*\*-

\* i I M \*

\*\*\*

Room(3, 0)

\*\*\*

\* E V M |

\*\*\*

Room(3, 1)

\*\*\*

\* E V M \*

\*\*-

Room(3, 2)

\*\*\*

\* I H V M |

\*\*-

Room(3, 3)

\*\*\*

\* I V M \*

\*\*-

Room(3, 4)

\*\*-

\* P M \*

\*\*\*

Room(4, 0)

\*\*-

\* I M |

\*\*-

Room(4, 1)

\*\*-

\* P H M |

\*\*-

Room(4, 2)

\*\*-

\* E M \*

\*\*\*

Room(4, 3)

\*\*-

\* P V M |

\*\*\*

Room(4, 4)

\*\*-

\* O A M |

\*\*-