Question 3 - Extension of Past Game - Mousehunt [50 marks]

You are given additional features to add to the Mousehunt game from the in-semester coursework of Assignment 1. Your task is to create a module called fe to implement the given functions and then call these functions to produce the correct behaviour. The original gameplay must not be modified with the additional features.

In this exam, you may assume that The Cheese Shop only sells cheddar and players can only catch Brown mouse during The Hunt. Similar to Assignment 1, players will always enter valid inputs when prompted *during the game*. You may choose to use your previous work from Assignment 1 or use the provided solutions which are pre-loaded in your workspace.

If you are to use your previous work from Assignment 1, you **must** ensure that game.py has a main function that will run your entire program, otherwise you will not pass any of the **Auto Pass** test cases and the first two test cases for **Q1**.

**Question 1 - Log Events (15 Marks)**

Your goal in this task is to log the major events that happen in the game and save these events into a file labelled as the player's in-game name e.g. <name>.txt. These are the major events that can happen in the game and must be included in the log when it happens:

* **Start game** - when player starts the game. This is when the game menu launches.
* **Start shop** - when player enters The Cheese Shop
* **Bought X cheddar** - when players purchase X amount of cheddar cheese in the The Cheese Shop. This event can only happen in The Cheese Shop
* **End shop** - when player leaves The Cheese Shop
* **Start hunt** - when players start the Hunt feature
* **Caught a Brown mouse!** - when players caught a Brown mouse during the Hunt
* **Nothing happens.** - when players attempt to Hunt but fails to attract a Brown mouse while their trap is armed with cheddar.
* **Nothing happens. You are out of cheese!** - when players attempt to Hunt but fails to attract a Brown mouse cause their trap is not armed with cheddar.
* **Do nothing** - when players attempt to Hunt but fails to sound the horn correctly.
* **End hunt** - when players leave the Hunt feature
* **End game** - when players exit the game.

Write a function called refresh\_file that accepts one argument representing the absolute path to a file. If the file exists, it discards all the contents in this file and creates an empty file at the given path to prepare for the writing of the events. Else, the function displays the message File path does not exist.. You may assume that only text files will be passed into this function.

Write a function called log\_events that has two str parameters: event and filename. The second parameter has a default value set to /home/saved/temp.txt. If no arguments are provided, the function by default will write the event to the default file. The function returns True if the event, represented by event is successfully written to the file called filename. Else, the function does nothing and returns False. New events will always be added to the bottom of the file followed by a new line. If the filename argument is a valid path but the file does not exist, a new file should be created and the event written at the start of the file.

Modify game.py program from Assignment 1 to log the major events into the file /home/saved/temp.txt when it happens. You must call the log\_events to accomplish this. The input/output of the actual program from Assignment 1 should not change with this addition.

If the player's name is valid (fulfills the conditions in Assignment 1 Question 2) when players opt to Exit game, a text file with the player's name is created and the contents in /home/saved/temp.txt is copied over. This text file will always be saved in the directory /home/saved/. The file is refreshed each time the game is restarted. For example, player Tom plays the game twice, the file contents stored in temp.txt and subsequently Tom.txt will only be the events that happen in the latest game since the first attempt is overridden.

Program Execution

The auto-marker will only start game.py and fe.py to check the files produced by your program. These are examples text input/output and file outputs for four different players - Tom, Jerry, Bob and COMP9001.

* Player Tom skips training and purchases 5 cheddar for their hunt. They continue hunting until he is out of cheese before ending his hunt and stopping the game.
* $ python3 game.py
* Mousehunt
* ​
* \_\_\_\_()()
* /     @@
* `~~~~~\\_;m\_\_m.\_>o
* ​
* Inspired by Mousehunt© Hitgrab
* Programmer - An INFO1110/COMP9001 Student
* Mice art - Joan Stark
* ​
* What's ye name, Hunter?
* #Tom
* Welcome to the Kingdom, Hunter Tom!
* Before we begin, let's train you up!
* Press "Enter" to start training or "skip" to Start Game: #skip
* ​
* What do ye want to do now, Hunter Tom?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #3
* Welcome to The Cheese Shop!
* Cheddar - 10 gold
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #1
* You have 125 gold to spend.
* State [cheese quantity]: #cheddar 5
* Successfully purchase 5 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #3
* ​
* What do ye want to do now, Hunter Tom?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #2
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 200, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 325, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 325, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 325, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 325, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens. You are out of cheese!
* My gold: 325, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens. You are out of cheese!
* My gold: 325, My points: 230
* ​
* Do you want to continue to hunt? yes
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #stop hunt
* ​
* What do ye want to do now, Hunter Tom?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop

#1

These are the contents stored in Tom.txt at the end of the game.

Start game

Start shop

Bought 5 cheddar

End shop

Start hunt

Caught a Brown mouse!

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Nothing happens.

Nothing happens. You are out of cheese!

Nothing happens. You are out of cheese!

End hunt

End game

* Player Jerry half-heartedly does the training, purchases 3 cheddar and hunts. Upon finishing all their cheese during the hunt, they stop hunt and immediately purchases another 5 cheddar to continue their hunt. They call it a day after finishing all the cheese.
* $ python3 game.py
* Mousehunt
* ​
* \_\_\_\_()()
* /     @@
* `~~~~~\\_;m\_\_m.\_>o
* ​
* Inspired by Mousehunt© Hitgrab
* Programmer - An INFO1110/COMP9001 Student
* Mice art - Joan Stark
* ​
* What's ye name, Hunter?
* #Jerry
* Welcome to the Kingdom, Hunter Jerry!
* Before we begin, let's train you up!
* Press "Enter" to start training or "skip" to Start Game: #
* ​
* Larry: I'm Larry. I'll be your hunting instructor.
* Larry: Let's go to the Meadow to begin your training!
* Press Enter to travel to the Meadow...#
* Travelling to the Meadow...
* Larry: This is your camp. Here you'll set up your mouse trap.
* Larry: Let's get your first trap...
* Press Enter to view traps that Larry is holding...#
* Larry is holding...
* Left: High Strain Steel Trap
* Right: Hot Tub Trap
* Select a trap by typing "left" or "right": #left
* Larry: Excellent choice.
* Your "High Strain Steel Trap" is now set!
* Larry: You need cheese to attract a mouse.
* Larry places one cheddar on the trap!
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #
* Nothing happens.
* To catch a mouse, you need both trap and cheese!
* ​
* Press Enter to continue training and "no" to stop training: #no
* ​
* What do ye want to do now, Hunter Jerry?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #3
* Welcome to The Cheese Shop!
* Cheddar - 10 gold
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #1
* You have 125 gold to spend.
* State [cheese quantity]: #cheddar 3
* Successfully purchase 3 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #3
* ​
* What do ye want to do now, Hunter Jerry?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #2
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 95, My points: 0
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 220, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 220, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #stop hunt
* ​
* What do ye want to do now, Hunter Jerry?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #3
* Welcome to The Cheese Shop!
* Cheddar - 10 gold
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #1
* You have 220 gold to spend.
* State [cheese quantity]: #cheddar 5
* Successfully purchase 5 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #3
* ​
* What do ye want to do now, Hunter Jerry?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #2
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 170, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 295, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 295, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 420, My points: 345
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 545, My points: 460
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens. You are out of cheese!
* My gold: 545, My points: 460
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #stop hunt
* ​
* What do ye want to do now, Hunter Jerry?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop

#1

These are the contents stored in Jerry.txt at the end of the game.

Start game

Start shop

Bought 3 cheddar

End shop

Start hunt

Nothing happens.

Caught a Brown mouse!

Nothing happens.

End hunt

Start shop

Bought 5 cheddar

End shop

Start hunt

Nothing happens.

Caught a Brown mouse!

Nothing happens.

Caught a Brown mouse!

Caught a Brown mouse!

Nothing happens. You are out of cheese!

End hunt

End game

* Player Bob skips training, purchases 10 cheddar and hunts. But, they couldn't get the horn to work correctly twice before continuing to hunt until their cheddar runs out.
* $ python3 game.py
* Mousehunt
* ​
* \_\_\_\_()()
* /     @@
* `~~~~~\\_;m\_\_m.\_>o
* ​
* Inspired by Mousehunt© Hitgrab
* Programmer - An INFO1110/COMP9001 Student
* Mice art - Joan Stark
* ​
* What's ye name, Hunter?
* #Bob
* Welcome to the Kingdom, Hunter Bob!
* Before we begin, let's train you up!
* Press "Enter" to start training or "skip" to Start Game: #skip
* ​
* What do ye want to do now, Hunter Bob?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #3
* Welcome to The Cheese Shop!
* Cheddar - 10 gold
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #1
* You have 125 gold to spend.
* State [cheese quantity]: #cheddar 10
* Successfully purchase 10 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* #3
* ​
* What do ye want to do now, Hunter Bob?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* #2
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 25, My points: 0
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #no
* Do nothing.
* My gold: 25, My points: 0
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #no
* Do nothing.
* My gold: 25, My points: 0
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 150, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 150, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 150, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 150, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 150, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 150, My points: 115
* ​
* Do you want to continue to hunt? #yes
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Caught a Brown mouse!
* My gold: 275, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 275, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens.
* My gold: 275, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens. You are out of cheese!
* My gold: 275, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #yes
* Nothing happens. You are out of cheese!
* My gold: 275, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": #stop hunt
* ​
* What do ye want to do now, Hunter Bob?
* ​
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop

#1

These are the contents stored in Bob.txt at the end of the game.

Start game

Start shop

Bought 10 cheddar

End shop

Start hunt

Nothing happens.

Do nothing.

Do nothing.

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Nothing happens.

Nothing happens.

Nothing happens.

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Nothing happens. You are out of cheese!

Nothing happens. You are out of cheese!

End hunt

End game

* Player COMP9001 purchases cheese in the sequence of 1 , 2, 3 on their first shop visit until they are unable to buy cheese.
* $ python3 game.py
* Mousehunt
* ​
* \_\_\_\_()()
* /     @@
* `~~~~~\\_;m\_\_m.\_>o
* ​
* Inspired by Mousehunt© Hitgrab
* Programmer - An INFO1110/COMP9001 Student
* Mice art - Joan Stark
* ​
* What's ye name, Hunter?
* COMP9001
* Welcome to the Kingdom, Hunter COMP9001!
* Before we begin, let's train you up!
* Press "Enter" to start training or "skip" to Start Game: skip
* ​
* What do ye want to do now, Hunter COMP9001?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* 3
* Welcome to The Cheese Shop!
* Cheddar - 10 gold
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 125 gold to spend.
* State [cheese quantity]: cheddar 1
* Successfully purchase 1 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 115 gold to spend.
* State [cheese quantity]: cheddar 2
* Successfully purchase 2 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 95 gold to spend.
* State [cheese quantity]: cheddar 3
* Successfully purchase 3 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 65 gold to spend.
* State [cheese quantity]: cheddar 4
* Successfully purchase 4 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 25 gold to spend.
* State [cheese quantity]: cheddar 5
* Insufficient gold.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 3
* ​
* What do ye want to do now, Hunter COMP9001?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* 2
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 150, My points: 115
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 275, My points: 230
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 400, My points: 345
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 525, My points: 460
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 525, My points: 460
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 650, My points: 575
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 650, My points: 575
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 775, My points: 690
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 900, My points: 805
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 900, My points: 805
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens. You are out of cheese!
* My gold: 900, My points: 805
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens. You are out of cheese!
* My gold: 900, My points: 805
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": stop hunt
* ​
* What do ye want to do now, Hunter COMP9001?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* 3
* Welcome to The Cheese Shop!
* Cheddar - 10 gold
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 900 gold to spend.
* State [cheese quantity]: cheddar 9
* Successfully purchase 9 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 810 gold to spend.
* State [cheese quantity]: cheddar 10
* Successfully purchase 10 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 710 gold to spend.
* State [cheese quantity]: cheddar 11
* Successfully purchase 11 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 600 gold to spend.
* State [cheese quantity]: cheddar 12
* Successfully purchase 12 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 1
* You have 480 gold to spend.
* State [cheese quantity]: cheddar 13
* Successfully purchase 13 cheddar.
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 3
* ​
* What do ye want to do now, Hunter COMP9001?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* 2
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 475, My points: 920
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 475, My points: 920
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 475, My points: 920
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 600, My points: 1035
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 725, My points: 1150
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 725, My points: 1150
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 850, My points: 1265
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 975, My points: 1380
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 975, My points: 1380
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 975, My points: 1380
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 975, My points: 1380
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1100, My points: 1495
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1100, My points: 1495
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1100, My points: 1495
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1100, My points: 1495
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1100, My points: 1495
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1225, My points: 1610
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1225, My points: 1610
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1225, My points: 1610
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": ye
* Do nothing.
* My gold: 1225, My points: 1610
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1225, My points: 1610
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1225, My points: 1610
* ​
* Do you want to continue to hunt? yes
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1350, My points: 1725
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1475, My points: 1840
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1600, My points: 1955
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1725, My points: 2070
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1850, My points: 2185
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1850, My points: 2185
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Nothing happens.
* My gold: 1850, My points: 2185
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 1975, My points: 2300
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": yes
* Caught a Brown mouse!
* My gold: 2100, My points: 2415
* ​
* Sound the horn to call for the mouse...
* Sound the horn by typing "yes": stop hunt
* ​
* What do ye want to do now, Hunter COMP9001?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* 3
* Welcome to The Cheese Shop!
* Cheddar - 10 gold
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 2
* Gold - 2100
* Cheddar - 25
* Trap - Cardboard and Hook Trap
* ​
* How can I help ye?
* 1. Buy cheese
* 2. View inventory
* 3. Leave shop
* 3
* ​
* What do ye want to do now, Hunter COMP9001?
* 1. Exit game
* 2. Join the Hunt
* 3. The Cheese Shop
* 1

​

These are the contents stored in COMP9001.txt at the end of the game.

Start game

Start shop

Bought 1 cheddar

Bought 2 cheddar

Bought 3 cheddar

Bought 4 cheddar

Bought 0 cheddar

End shop

Start hunt

Caught a Brown mouse!

Caught a Brown mouse!

Caught a Brown mouse!

Caught a Brown mouse!

Nothing happens.

Caught a Brown mouse!

Nothing happens.

Caught a Brown mouse!

Caught a Brown mouse!

Nothing happens.

Nothing happens. You are out of cheese!

Nothing happens. You are out of cheese!

End hunt

Start shop

Bought 9 cheddar

Bought 10 cheddar

Bought 11 cheddar

Bought 12 cheddar

Bought 13 cheddar

End shop

Start hunt

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Caught a Brown mouse!

Caught a Brown mouse!

Nothing happens.

Caught a Brown mouse!

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Nothing happens.

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Nothing happens.

Nothing happens.

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Do nothing

Nothing happens.

Nothing happens.

Caught a Brown mouse!

Caught a Brown mouse!

Caught a Brown mouse!

Caught a Brown mouse!

Caught a Brown mouse!

Nothing happens.

Nothing happens.

Caught a Brown mouse!

Caught a Brown mouse!

End hunt

Start shop

End shop

End game

**Question 2 - Game Analysis (35 Marks)**

Write your answer for this question into fe.py.

Players can check if their account exists by passing the chosen in-game name as command line arguments. If insufficient arguments are received, the game displays the format of the program execution: Format: python3 fe.py <name> to inform players of the expected way to run their program. If the argument passed into the function is not a file object, the function does nothing and returns an empty string. If many command line arguments are received, only the first argument is used for checking. If a file with the in-game name is found, the program lists an analysis of the events that happened the last time the user played the game. Else, the program does nothing again and returns an empty string.

Valid game events in the file must be enclosed within the lines Start game and End game. Events that occur outside these lines are invalid events.

<Invalid event>

Start game

<Valid event 1>

<Valid event 2>

.

.

End game

<Invalid event>

The events that occur during the Hunt and within the shop must be within the lines Start <place> and End <place> where place must be hunt or shop respectively for it to be included in the count during the analysis. Events that occurs outside these fences are ignored. In the given example below, the line Bought 10 cheddar is the only valid event that occurs within the file.

Bought 5 cheddar

Start game

Start shop

Bought 10 cheddar

End shop

Bought 100 cheddar

End game

In the sample file missing\_end.txt, the program should not find any valid events because the End game fence is missing. Hence, there are no valid events found in the file.

Start shop

End shop

Start game

Start shop

Bought 2 cheddar

End shop

Start hunt

Caught a Brown mouse!

Nothing happens.

Nothing happens. You are out of cheese!

Nothing happens. You are out of cheese!

End hunt

In the sample file outside.txt, the events on Line 5, 22 and 24 are invalid events because they occur outside the game and respective place fences.

During the analysis, the program must extract the following information from the valid events found in the text file and save them into the given variable names:

* Total cheese bought in The Cheese Shop stored in total\_cheddar
* Total gold spent in the The Cheese Shop stored in total\_spent
* Total times the hunter have sounded the horn stored in total\_sound
* Total Brown mouse caught stored in total\_brown
* Total number of times the trap is empty during a hunt stored in total\_misses
* Total number of times they hunted without cheese stored in total\_forgot
* Total revenue the hunter gained from The Hunt stored in total\_revenue

A formatted string summarizing the player's events during the last game play is then displayed to terminal *exactly* as follows:

​You have spent {total\_spent} gold in The Cheese Shop.

Total cheddar bought: {total\_cheddar}

You have sounded the horn {total\_sound} times during The Hunt.

Total Brown mouse caught: {total\_brown}

Total empty catches: {total\_misses}

Total hunt without cheese: {total\_forgot}

You have earned {total\_revenue} gold from The Hunt.

Note: The first line is You have spent {total\_spent} gold in The Cheese Shop. The last line is You have earned {total\_revenue} gold from The Hunt. The statements that starts with Total have a single whitespace at the start of the sentence.

Write function analyze\_game which has a single parameter representing the file object in read mode and returns a formatted string of the result of analysis. If an invalid argument is received by the function, the function returns an empty string. If a valid argument is received, the function analyzes the file object to extract the valid events that happens and produces a summary of the events. The result of analysis must be stored in the appropriate variable names as given above. The function should not display anything to terminal during the analysis. The function assumes the following while doing its analysis:

* A cheddar costs 10 gold.
* A Brown mouse will always drop 125 gold when caught.
* total\_misses is the summation of the total times that the valid events of Nothing happens. occur.
* total\_forgot is the summation of the total times that the valid events of Nothing happens. You are out of cheese! occur.
* total\_sound is a summation of total\_brown, total\_misses and total\_forgot.

This is example of the output produced when the file object for outside.txt is passed into the function:

​You have spent 100 gold in The Cheese Shop.

Total cheddar bought: 10

You have sounded the horn 12 times during The Hunt.

Total Brown mouse caught: 2

Total empty catches: 8

Total hunt without cheese: 2

You have earned 250 gold from The Hunt.

Write function main which accepts a list of argument values received from the command line, args , and returns a str object representing the result of game analysis. The function assumes that the data for past saved games will always be stored as a text file (txt extension) in the directory /home/saved/ and labelled as the player's name. The function will attempt to read the file from this directory. If this read is unsuccessful, the function does nothing and returns an empty string. If it is successful, it then calls function analyze\_game to analyze the contents of the file, displays the results of analysis and returns the result of analysis. If insufficient arguments are received by the program, the program displays the following message: Format: python3 fe.py <name> to the terminal. The main function should execute automatically when the script fe.py is run.

Program Execution

The auto-marker will only start the program fe.py. These are examples of the output produced for different command line arguments:

* Past game analysis for Tom

$ python3 fe.py Tom

You have spent 50 gold in The Cheese Shop.

Total cheddar bought: 5

You have sounded the horn 8 times during The Hunt.

Total Brown mouse caught: 3

Total empty catches: 2

Total hunt without cheese: 3

You have earned 375 gold from The Hunt.

* Past game analysis for COMP9001

$ python3 fe.py COMP9001

You have spent 650 gold in The Cheese Shop.

Total cheddar bought: 65

You have sounded the horn 42 times during The Hunt.

Total Brown mouse caught: 21

Total empty catches: 19

Total hunt without cheese: 2

You have earned 2625 gold from The Hunt.

* Invalid cases where bilby and tom does not exist

$ python3 fe.py bilby

$ python3 fe.py tom and jerry

* No command line arguments is given

$ python3 fe.py

Format: python3 fe.py <name>

* Many command line arguments, similar to checking for Tom.

$ python3 fe.py Tom and Jerry

You have spent 50 gold in The Cheese Shop.

Total cheddar bought: 5

You have sounded the horn 8 times during The Hunt.

Total Brown mouse caught: 3

Total empty catches: 2

Total hunt without cheese: 3

You have earned 375 gold from The Hunt.