SAHETI SCHOOL

INFORMATION TECHNOLOGY: PAPER II

GRADE 10

JULY 2020

Time: 2½ hours **Total: 100 Marks**

Examiner: H Peuckert **Moderator: R Le Roux**

Name: _____ **Grade**: _____

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY:

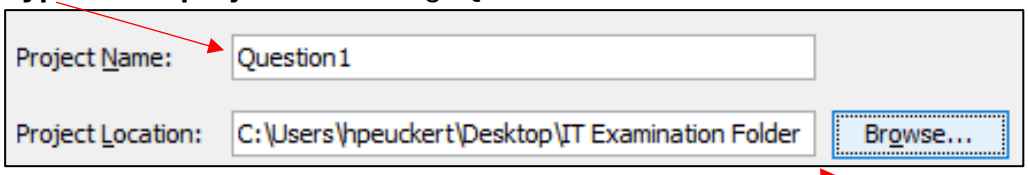
1. This paper consists of **22** pages. Check that your paper has the correct number of pages.
2. This paper is divided into two sections. All candidates must answer both sections.
3. Make sure that you answer the questions in the manner described because marks will be awarded for your solution according to the specifications that are given in the question.
4. Only answer what is asked in each question.
5. If you cannot get a section of code to work, comment it out so that it will not be executed and so that you can continue with the examination. If possible, try to explain the error to aid the marker.
6. Your programs must be coded in such a way that they will work with any data and not just the sample data supplied or any data extracts that appear in the question paper.
7. All data structures must be defined and declared by you, the programmer. You may not use components provided within the interface to store and later retrieve data.
8. You must save all your work regularly on the disk space allocated to you for this examination.

9. If there is a technical interruption that prevents you from writing your examination (e.g. power failure), when you resume writing your examinations, you will only be given the time that was remaining when the interruption began. No extra time will be given to catch up work that was not saved.

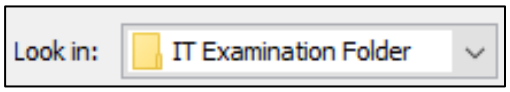
10. Make sure your name appears as a comment in every program that you code. At the top of each program, type in `//` followed by your name and surname.

11. **Before you start this examination, please make sure that you have done the following:**

    - Create an **IT Examination Folder** on the **Desktop** of your computer.
    - Download the Examination Paper and the **Answer Sheet** from the **Assignments tab** of the **Grade 10 Exams Teams**.
    - Go to the **Download folder** of your computer and move the **Answer Sheet** to the **IT Examination Folder**.
    - Open **NetBeans**.
    - Create THREE **NetBeans projects** (called **Question1**, **Question2** and **Question3** respectively) inside the **Examination Folder:**
        - Click on **File – New Project** – **Next**
        - **Type in the project name**, e.g. Question1.



        - Click on the **Browse** button.
        - Click on **Desktop** and select the **IT Examination Folder** (double click on it). Make sure it displaying in **Look in:**



    - Do all your work in the **Examination Folder**.

12. **At the end of the examination do the following (after the 2½ hours have passed):**

    - Correct the indentation of all your programs (**Question1**, **Question2** and **Question3**) – in NetBeans go to each program, click on **Source** and then on **Format**.
    - **Copy all your solutions** to the given **Answer Sheet**. Save the document and close your word processor. Submit the **Answer Sheet** via the **Assignments tab** of the **Grade 10 Exams Teams**.
    - Save all your work in NetBeans and close it. **Zip/compress both your project folders** (**Question1**, **Question 2** and **Question 3**) separately and submit them via **Teams Chats** (to Hans Peuckert).

SCENARIO:

Fortnite Battle Royale is an online video game developed by **Epic Games**. It is a free-to-play game played by 350 million people around the world. At the beginning of every match, up to a 100 players are transported to an island on the **Battle Bus**.

They then skydive to the island below and scavenge for gear to defend themselves from other players. As the match progresses, the playable area within the island gradually constricts, giving the players less and less room to play in. The last player or team alive wins the match.

INSTRUCTION:

If you have not done so already, create a **new NetBeans project** called **Question1** inside your **IT Examination Folder** (on your computer's Desktop).

SCENARIO:

On the 30th of May 2020, **Saheti School** hosted their first **Inter House Fortnite Tournament** with 154 students participating. It was a very successful event and **Devon Murray** was crowned the ultimate **Fortnite** champion of Saheti.

You are tasked to create an application that can be used by the organisers of the event to calculate the scores of the players after each match.

The placement points are as follows:

- 1st place (Victory Royale): 10 points
- 2nd – 5th place: 7 points
- 6th – 15th place: 5 points
- 16th – 25th place: 3 points

The eliminations points are as follows: 1 point is earned for each elimination.

Please note the following:

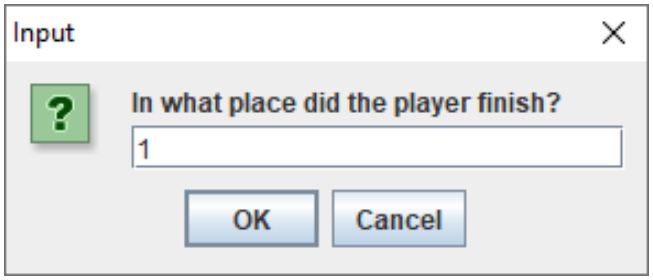
- Your program should be using the **wording and formatting** of all the input and output messages given in the examples below.
- All outputs must be displayed in **dialog boxes**.
- A mark will be awarded for **descriptive variables names**. (1)
- Marks will be awarded for using the **most appropriate data types**.

Write code that will do the following:

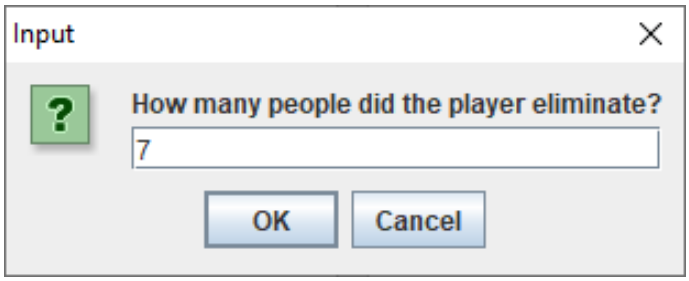
1.1 Create a variable called **points** that will be used to store a whole number and assign 0 to it. (1)

1.2 Prompt the user to enter the name of the player. (2)

1.3 Prompt the user to enter where the player was placed in the match. (2)



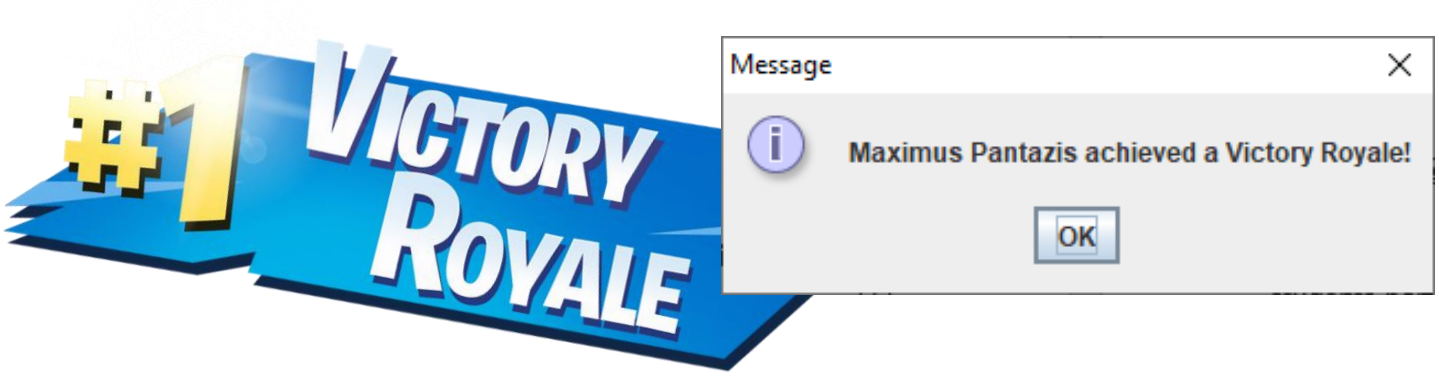
1.4 Prompt the user to enter the number of people the player has eliminated. (1)



1.5 Calculate the score of the player. Marks will be awarded for using effective programming techniques. (7)

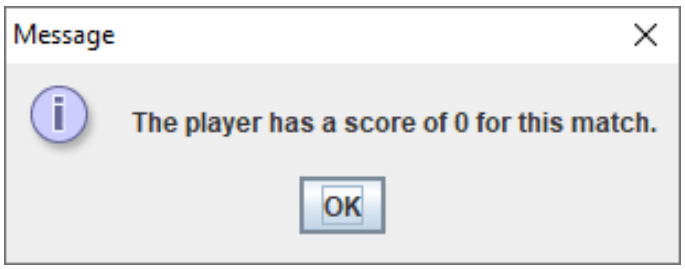
1.6 Display a message in the following format if the player achieved a Victory Royale.

```
<name> achieved a Victory Royale!
```
(2)

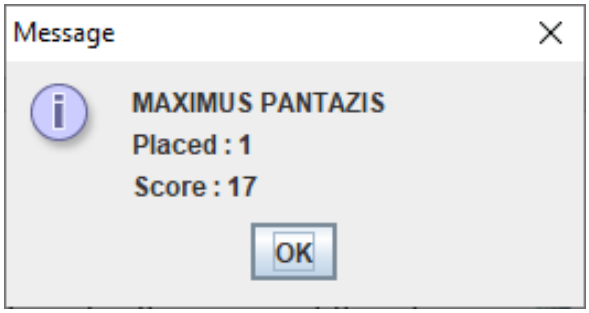


1.7 Display the following message if the player did not receive any placement points: (1)

1.8 Display the following message if the player's overall score is 0: (2)



1.9 Display the final score of the player, using the wording and formatting of the following example. **Please note** that the name of the player must be capitalised. (5)



TOTAL (Question 1): 24

QUESTION 2

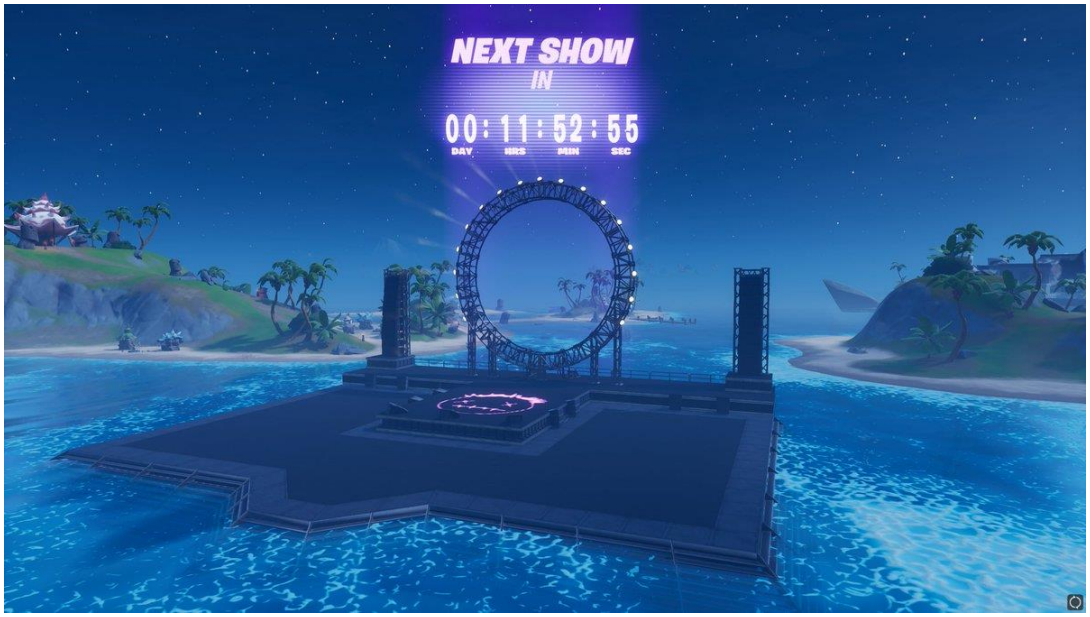
INSTRUCTION:

If you have not done so already, create a **new NetBeans project** called **Question2** inside your **IT Examination Folder** (on your computer's Desktop).

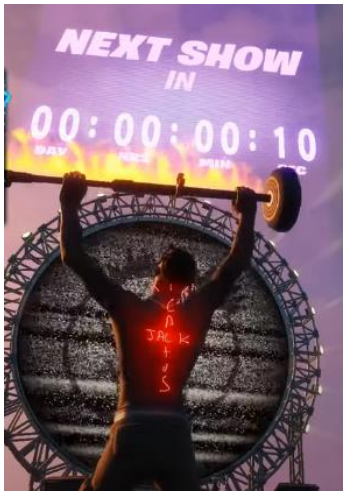
SCENARIO:

Travis Scott's Astroworld Concert in **Fortnite** was one of the big events of the year. According to **Epic**, 12.3 million players participated in the April 23 concert and 27.7 million people experienced it 45.8 million times across the five events.

A countdown timer was placed above the stage on the beachfront in **Sweaty Sands**, indicating to players when the next show will take place.



You are tasked to imitate the countdown timer for the last 10 seconds before the next show starts.

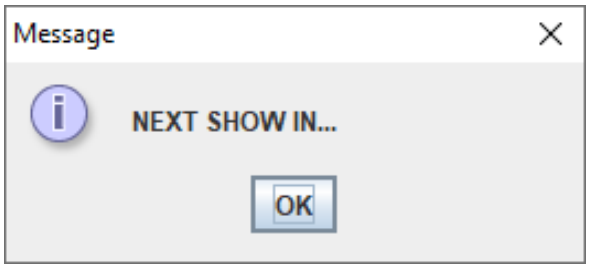


Please note the following:

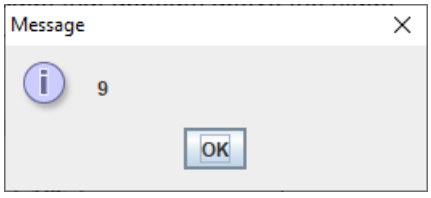
- Your program should be using the **wording and formatting** of the output messages given in the examples below.
- All outputs must be displayed in **dialog boxes**.

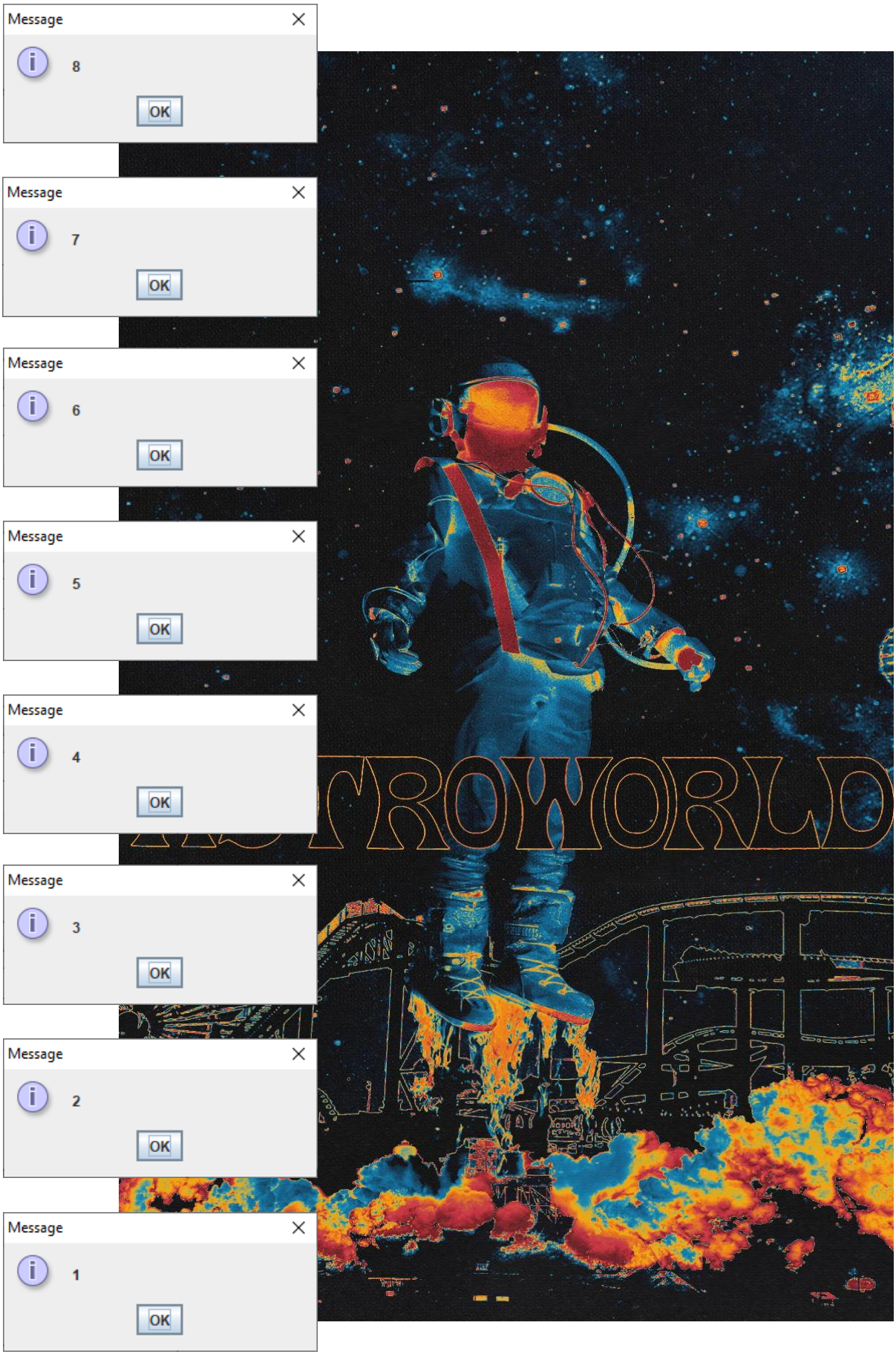
Write code that will do the following:

2.1 Display the message that appears above the stage: (1)

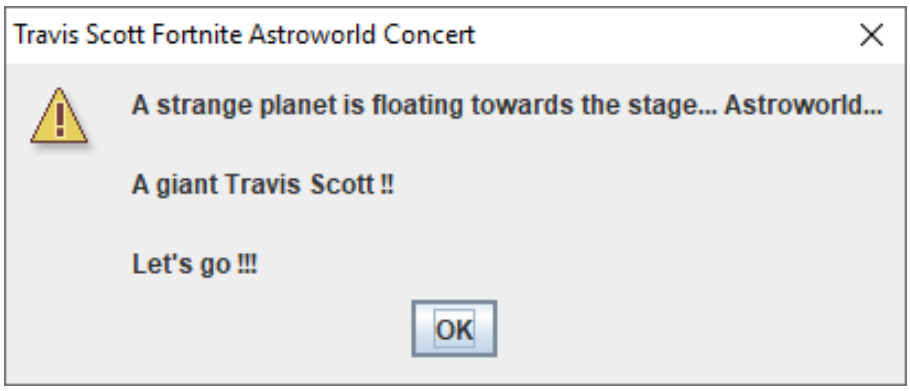


2.2 Using a **`while`** loop, display messages counting down from 10 to 1. (4)




Message
8
OK
Message
7
OK
Message
6
OK
Message
5
OK
Message
4
OK
Message
3
OK
Message
2
OK
Message
1
OK

2.3 After the countdown has finished, display the following message:



Please note the following:

- You have to change the **title** and **icon** as indicated in the output above.
- The messages should be displayed on separate lines as indicated above (with blank lines between them). (3)

TOTAL (Question 2): 8

QUESTION 3

INSTRUCTION:
If you have not done so already, create a **new NetBeans project** called **Question3** inside your **IT Examination Folder** (on your computer's Desktop).

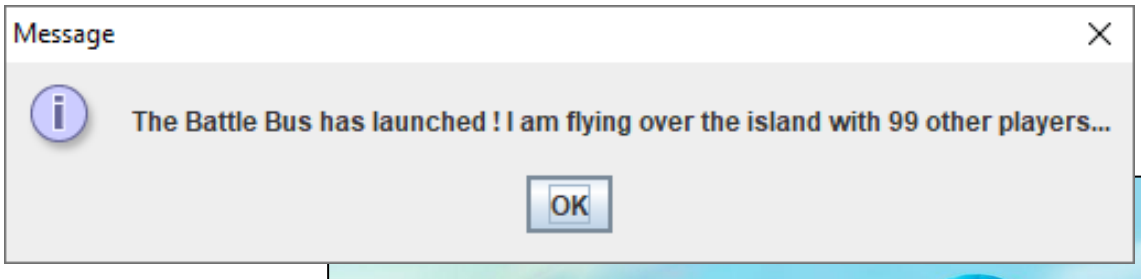
SCENARIO:
Fortnite players have experienced some funny and frustrating moments from time to time while playing **Battle Royale** and you are tasked to recreate some of these experiences.

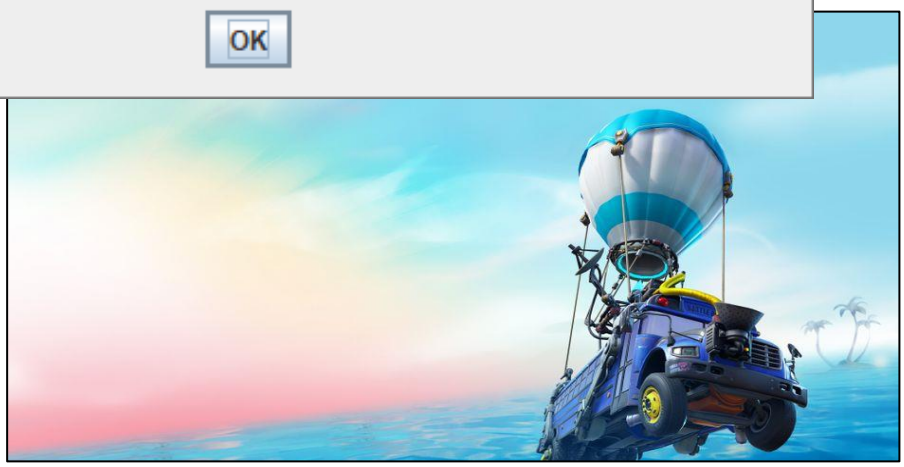
Please note the following:

- Your program should be using the **wording and formatting** of all the input and output messages given in the examples below.
- Your **dialog boxes** must look exactly the same as the ones given in this paper.
- Marks will be awarded for using the **most appropriate data types**.

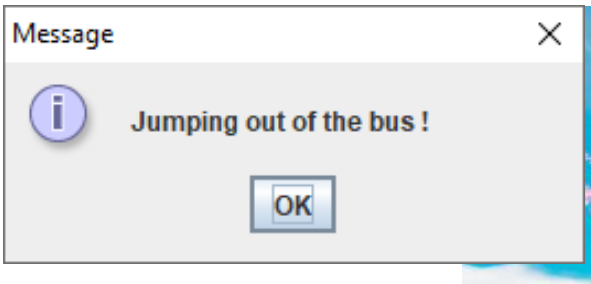
The application starts at the beginning of a **Battle Royale Season 3** match where the **Battle Bus** is departing for the island with a 100 excited players on board. In **Season 3** the island was hit by a huge tsunami leaving many parts of the island submerged in water.

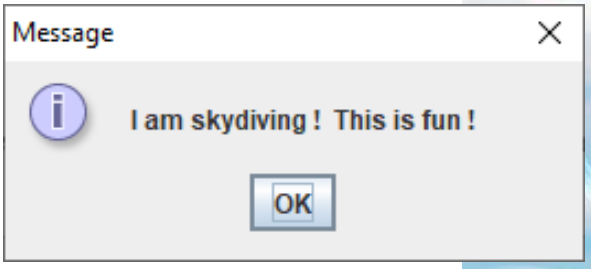
3.1 Display the following message: (1)



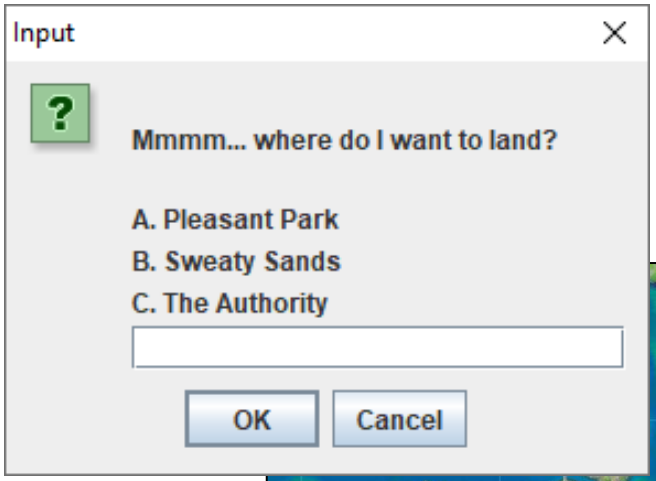


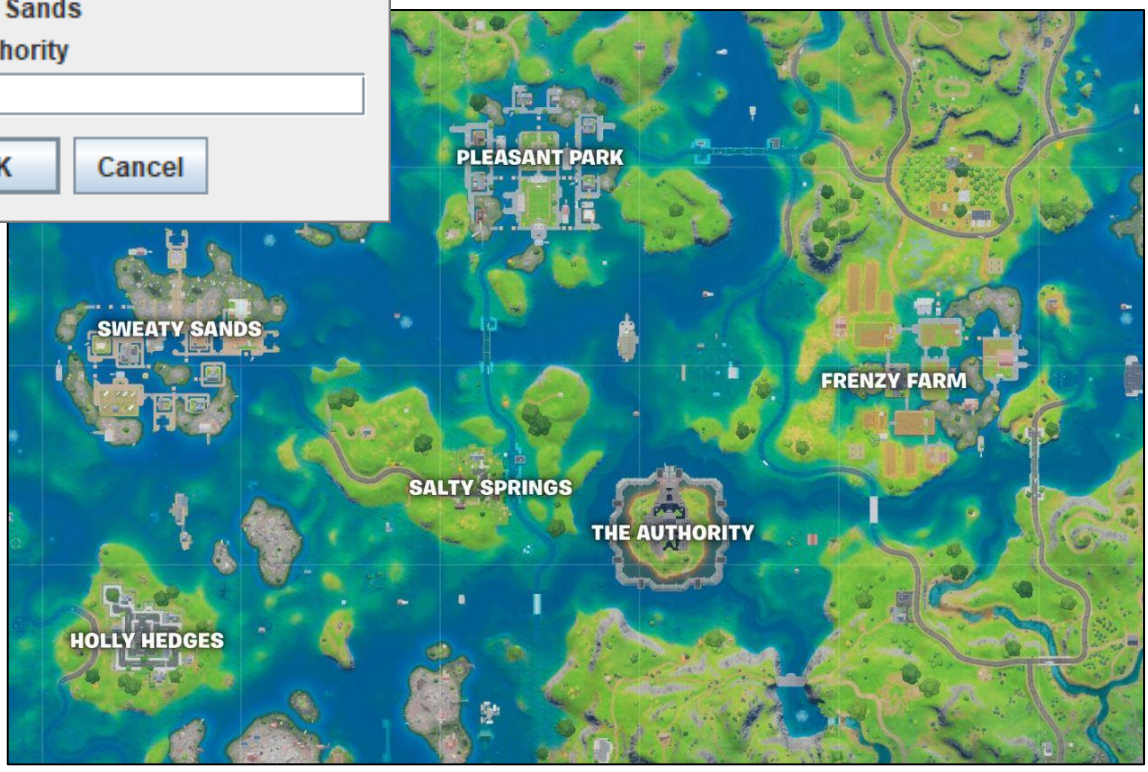
3.2 Next, display the following two messages: (1)



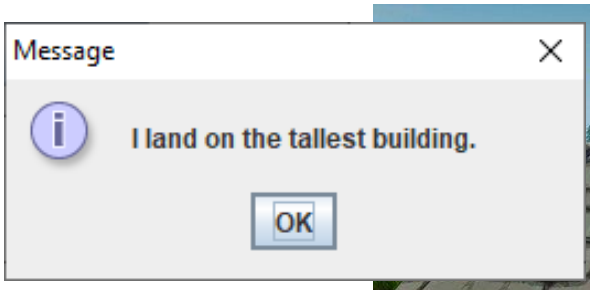


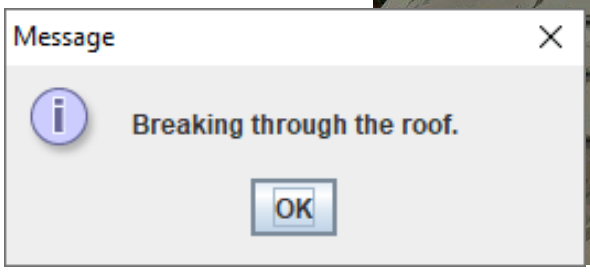
3.3 Prompt the player to select where he/she is planning to land. Change the user's input to uppercase before assigning it to the variable. Use a **`switch`** statement (and not **`if`** statements) to go to the different areas. (5)

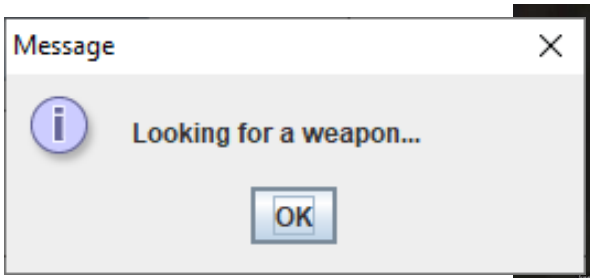


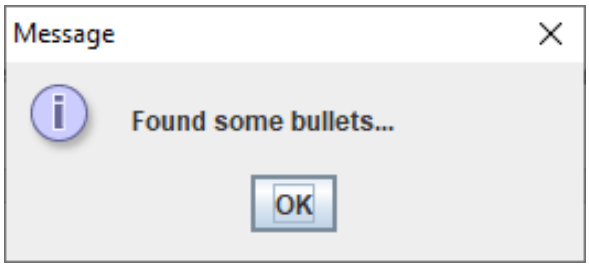


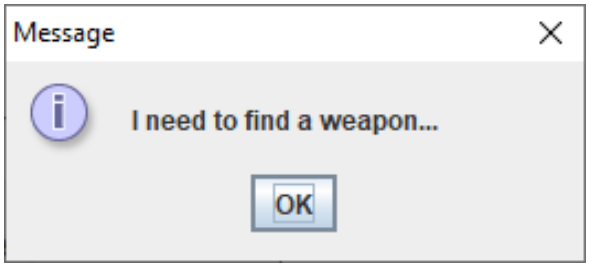
3.3.1 Display the following messages if the player has chosen option A (Pleasant Park): (6)

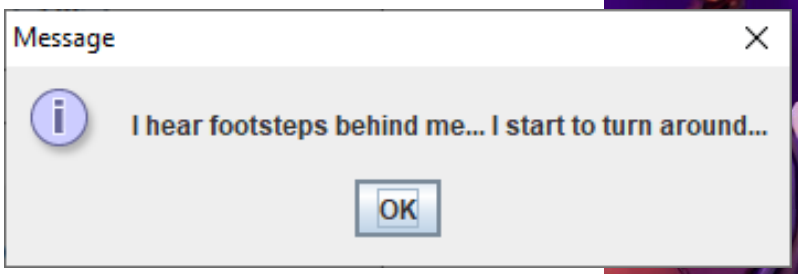


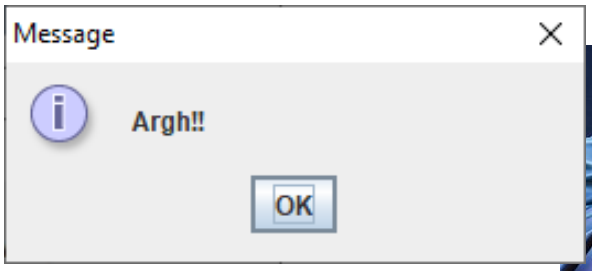


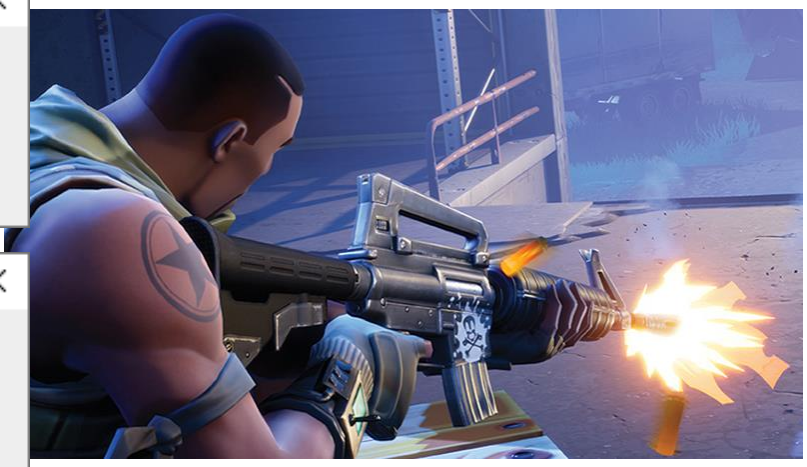


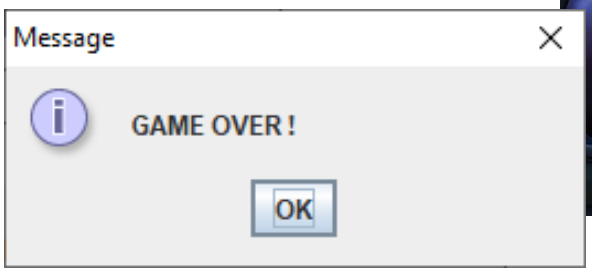

Message
Found some bullets...
OK


Message
I need to find a weapon...
OK


Message
I hear footsteps behind me... I start to turn around...
OK

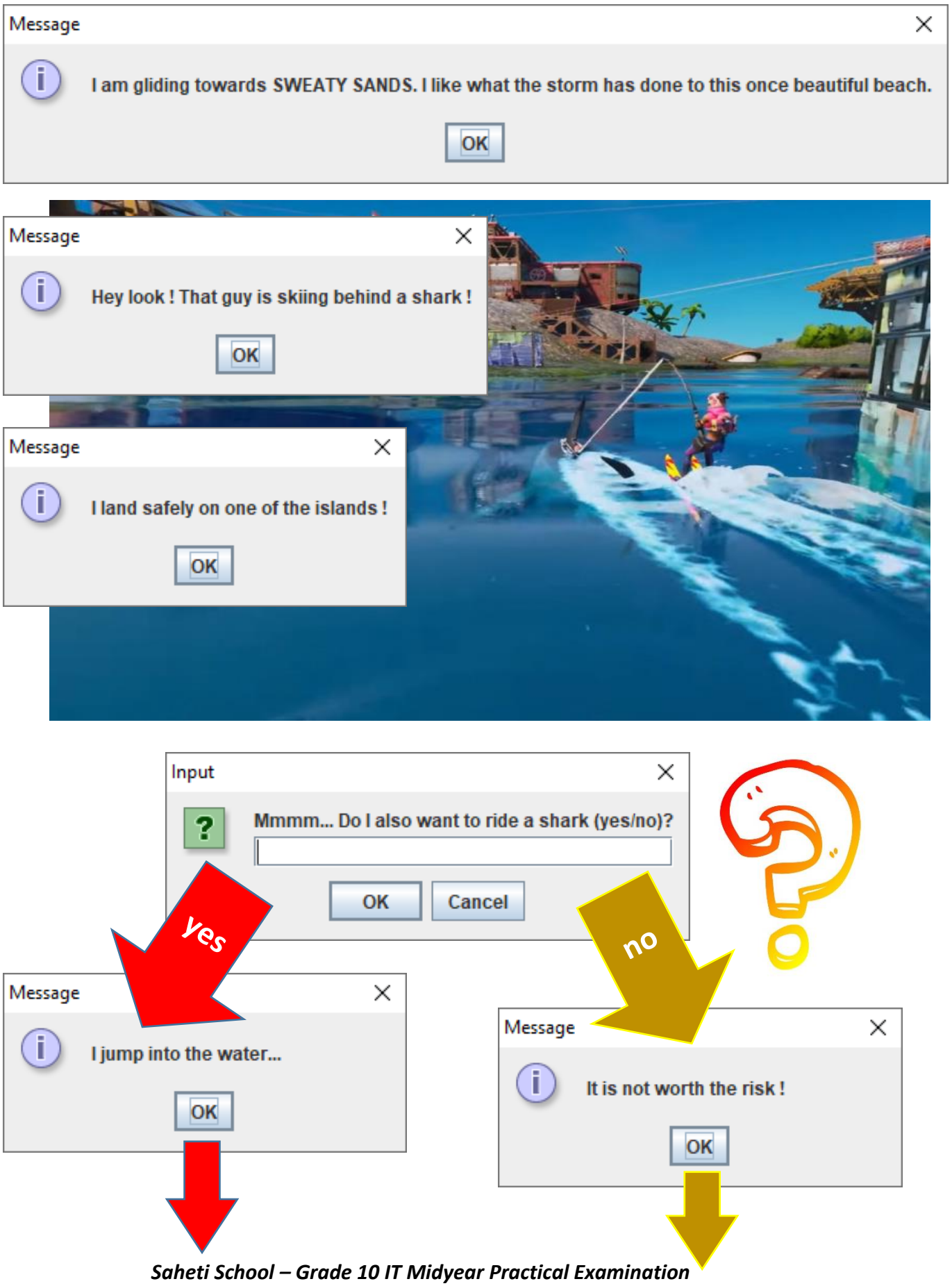

Message
Argh!!
OK




Message
GAME OVER !
OK

GAME OVER

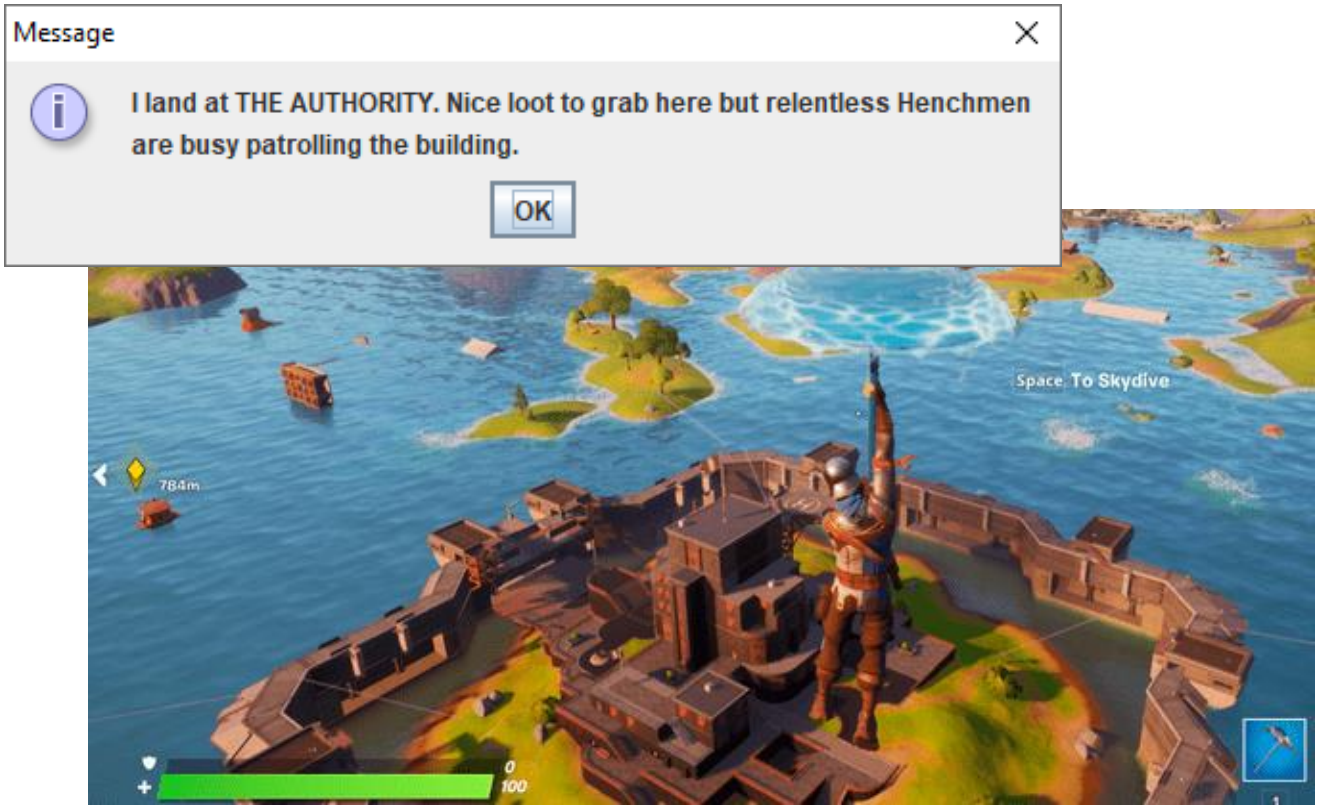
3.3.2 Write code to perform the following inputs and outputs if the player has chosen option B (Sweaty Sands): (10)



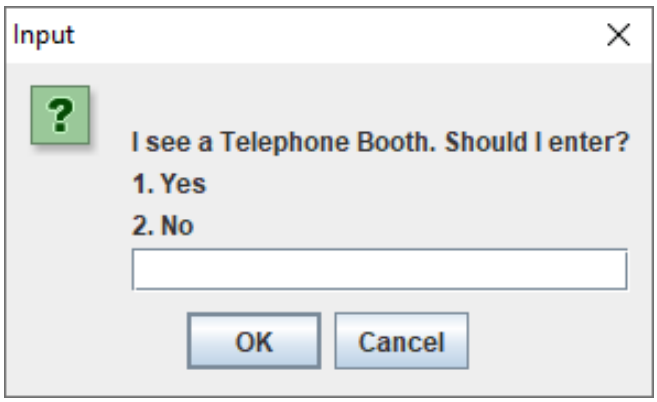
Please note that different messages must be displayed depending on the input of the user (on page 15). The user may only enter **yes** or **no**. The program must accept uppercase and/or lowercase letters as input. A mark is allocated for effective programming techniques.

3.3.3 Do the following if the player has chosen option C (The Authority):

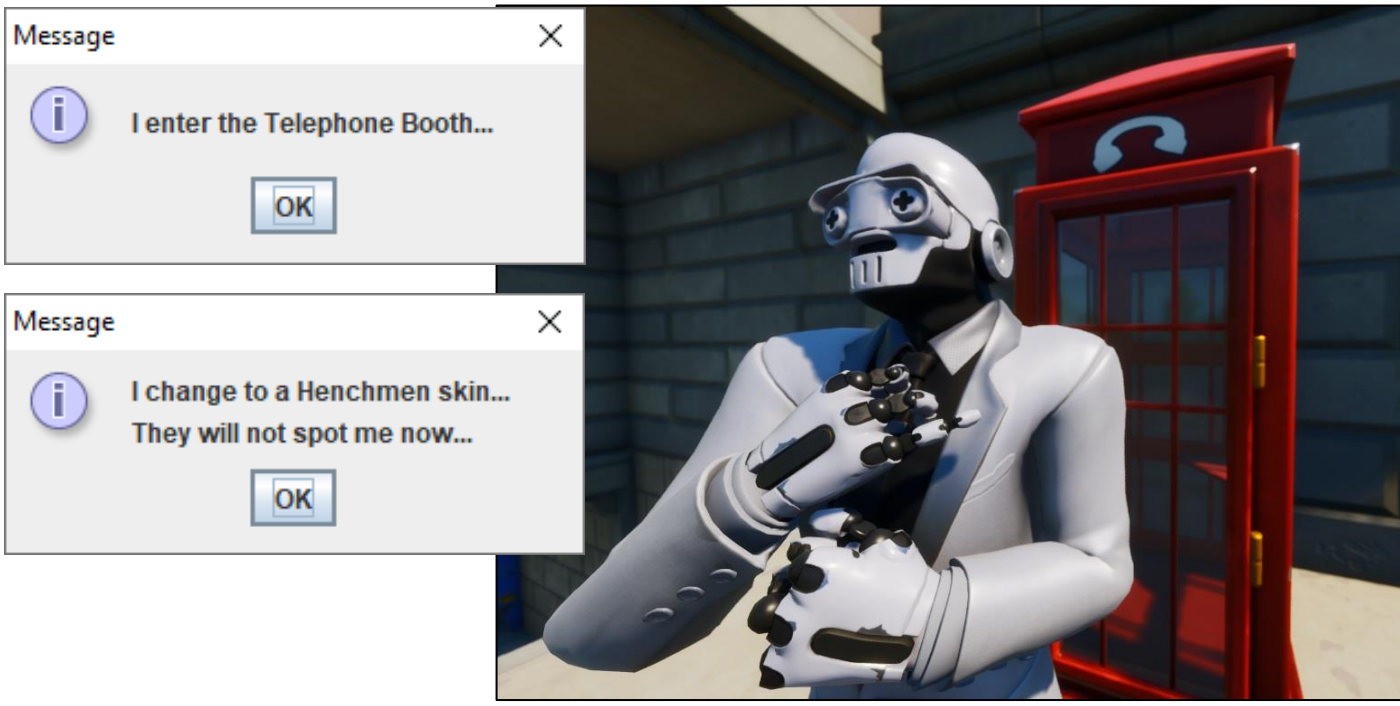
(i) Display the following message: (2)



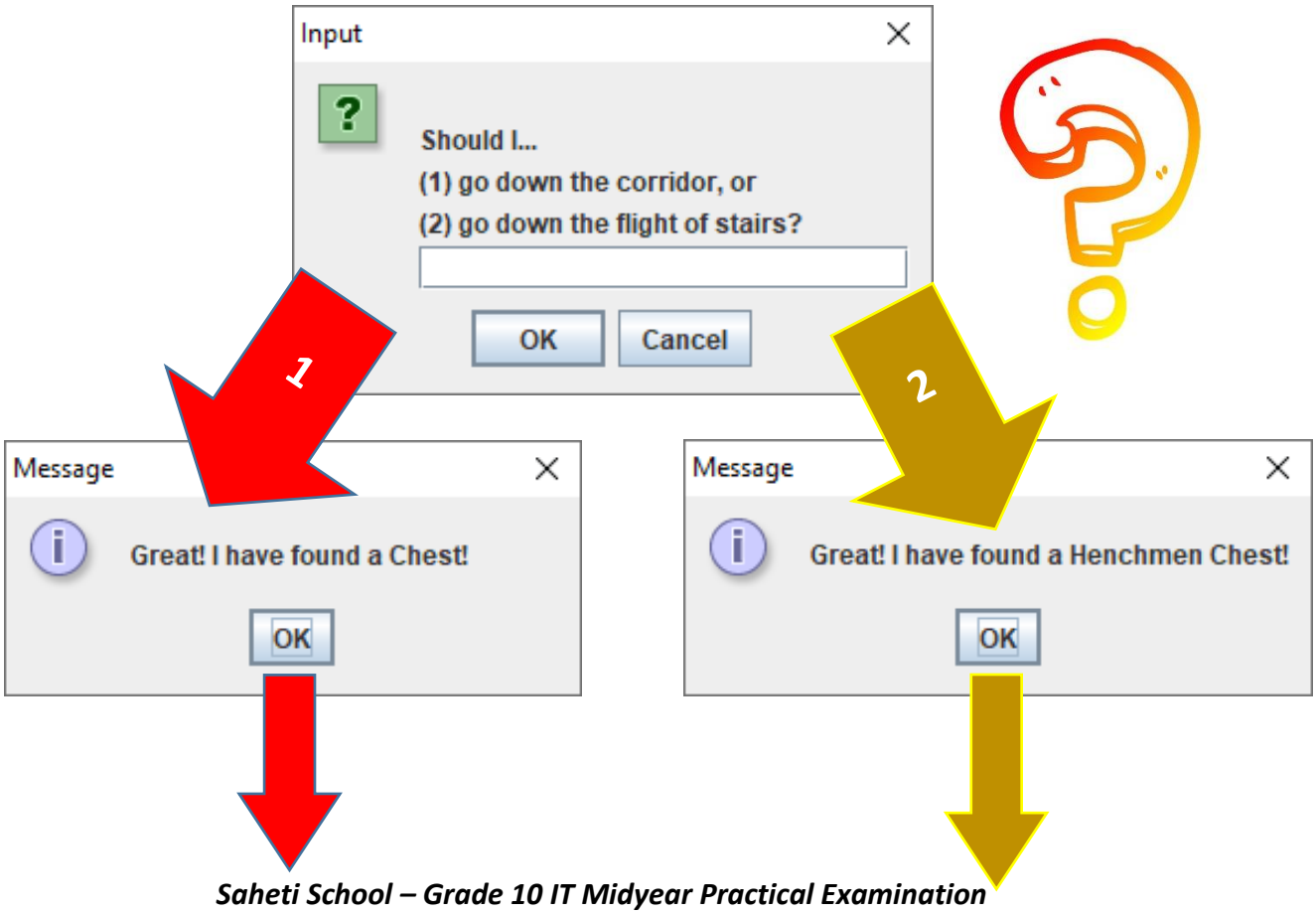
(ii) The player has landed and entered the building. It is a dangerous place crawling with Henchmen that shoots on sight. The player finds a Telephone Booth. If he enters the booth, he/she will change into a Henchmen skin meaning he/she will look exactly like a Henchmen and will not be attacked by them. Also, Henchmen Chests can only be opened if you look like a Henchmen. Prompt the player whether he/she wishes to enter the Telephone Booth. The player should only enter a number. (3)

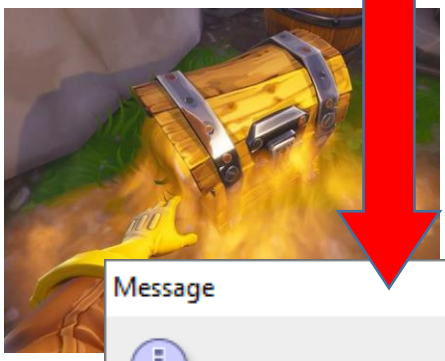


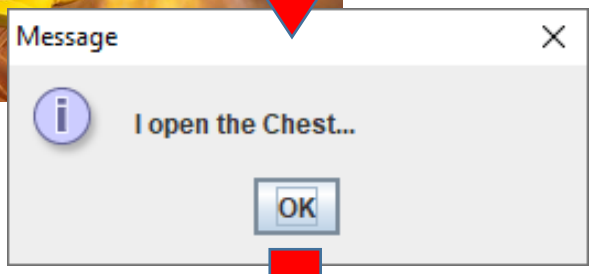
(iii) Display the following two messages if the player has chosen to enter the Telephone Booth. You should use an **`if`** statement here and not a **`switch`** statement. (2)



(iv) Prompt the user whether he wants to go down a corridor or down stairs. Depending on his choice, display the messages indicated below. You should use a **`switch`** statement here and not an **`if`** statement. (14)



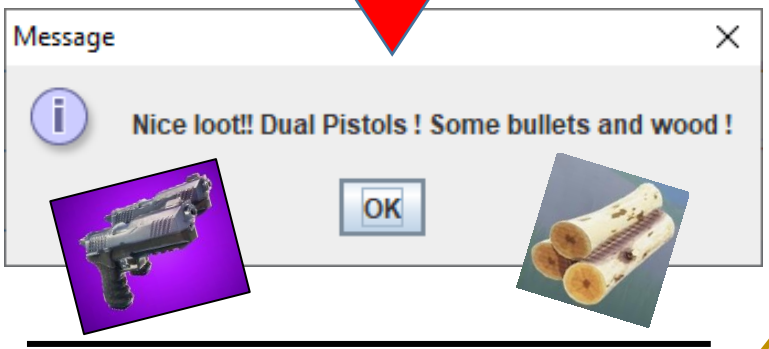


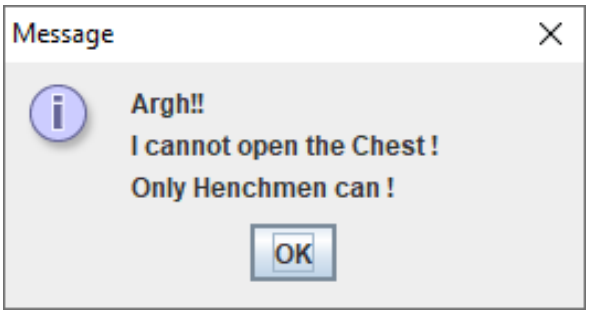


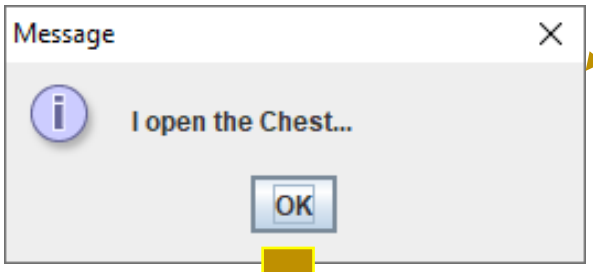
Does the player look like a Henchmen?

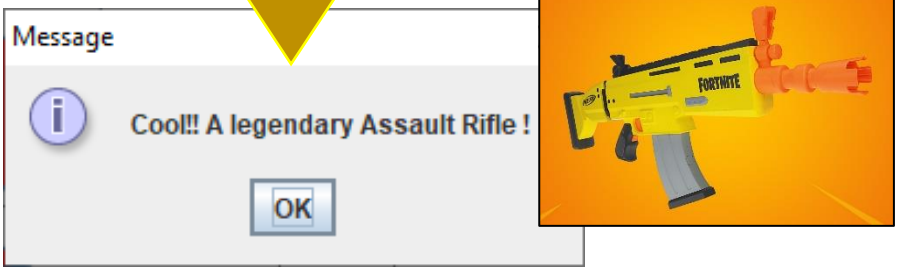
YES

NO



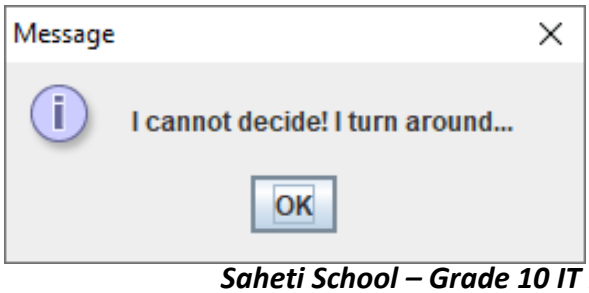




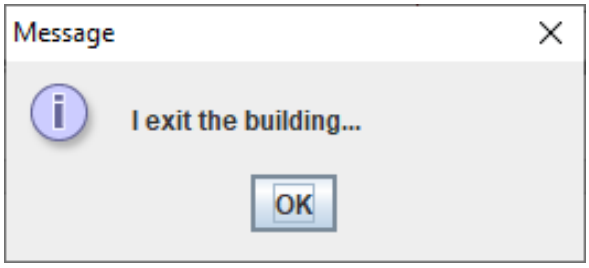


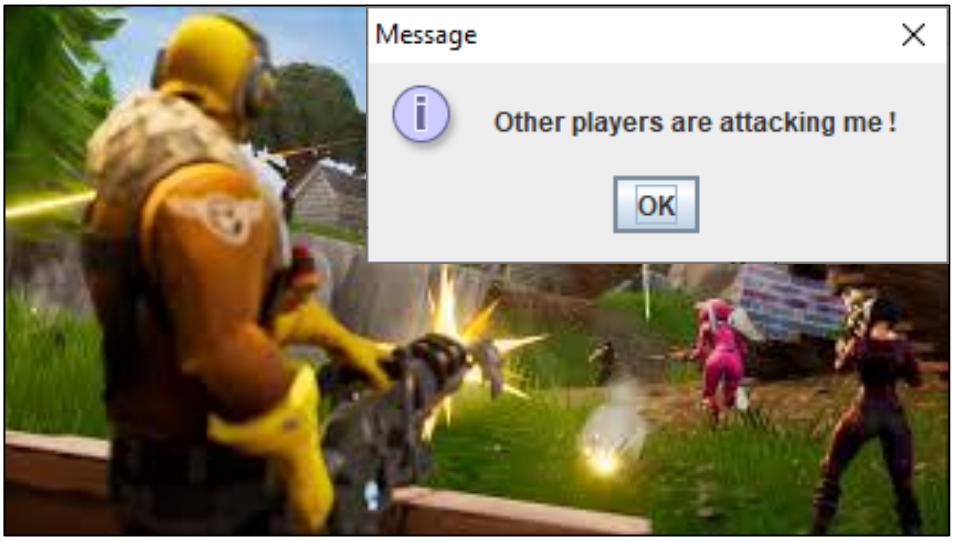
Please note that the above diamond shape represents a conditional statement (an **`if`** statement) and not an input statement.

Please note:
Add code to the **`switch`** statement so that the following message will be displayed if the player did not enter the value of 1 or 2 (at the input on page 18):



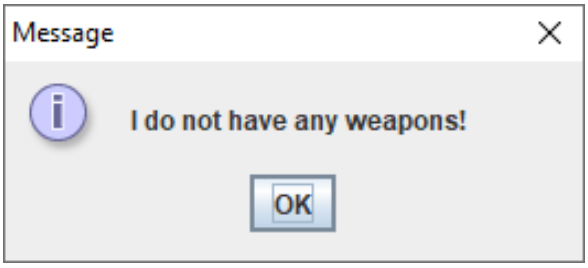
(v) Next, display the following two messages: (1)

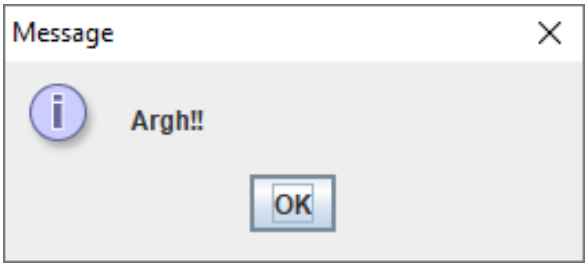




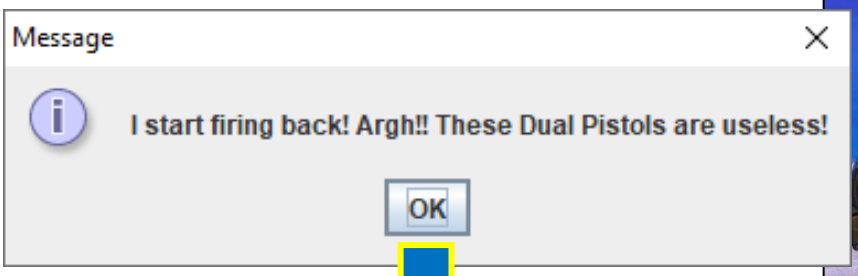
(vi) Depending on what type of weapon the player currently has equipped, display the following messages indicating the outcome of the battle: (19)

- **IF the player does not possess any weapons:**

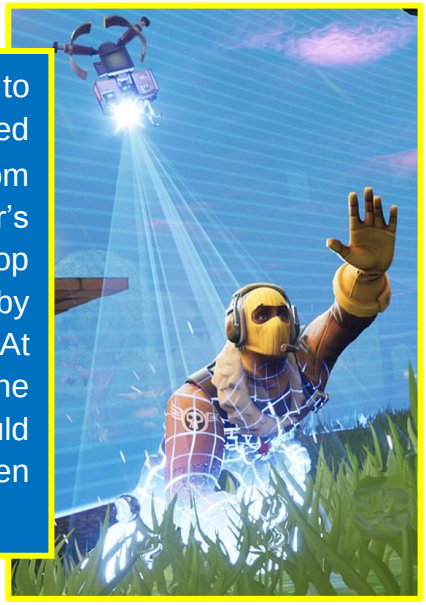




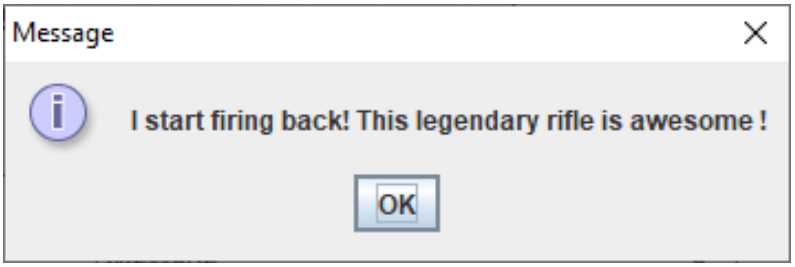
- **IF the player has the Dual Pistols equipped:**

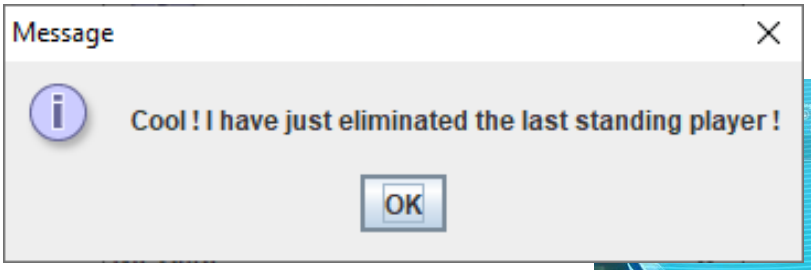


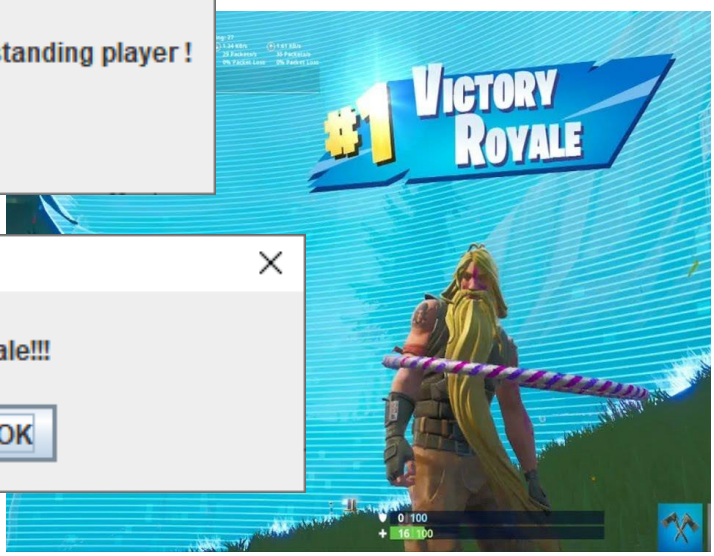
Create a variable called **health** and assign a **100** to it. Using a **`while`** loop, decrease the value stored in the **health** variable continuously by a random number (in the range of 10 - 40) until the player's health has reached 0. For each iteration of the loop display the message **"Argh!! Health:"** followed by the remaining health, e.g. **"Argh!! Heath: 63"**. At no point should a negative number be stored in the **health** variable. The lowest possible number should be **0**. Display the message **"GAME OVER!"** when the player's health has finally been depleted**.**

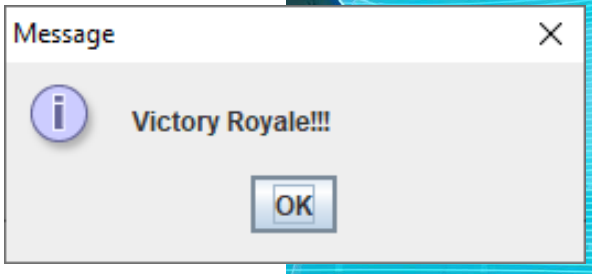


- **IF the player has the Legendary Assault Rifle equipped:**

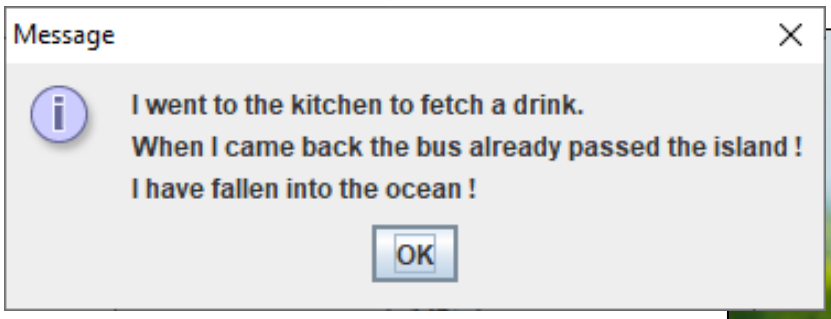


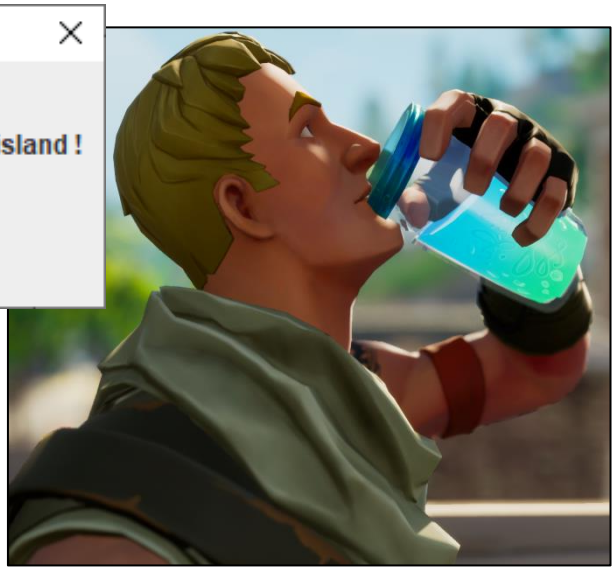


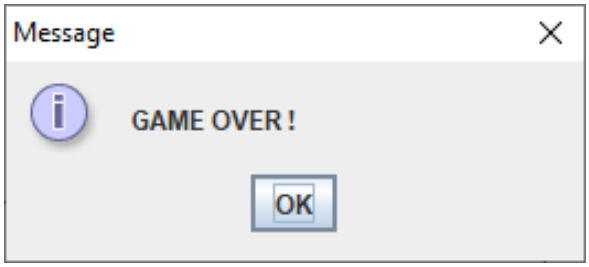




(vii) Add code so that the following messages will be displayed if the player entered anything other than **A**, **B** or **C** for the input of **Question 3.3** (on page 12): (4)







TOTAL (Question 3): 68

GRAND TOTAL: 100