

code.sprint^{MT}

TASK BOOKLET

- Final Round -

Secondary Category

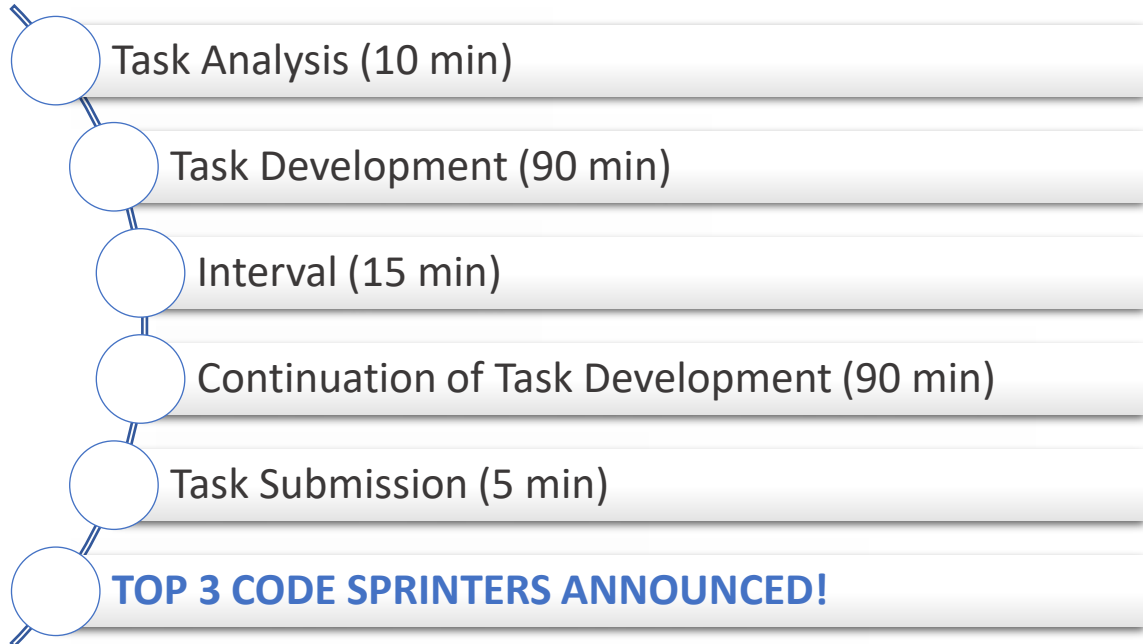
2022



GOVERNMENT OF MALTA
RESEARCH AND INNOVATION
MINISTRY FOR EDUCATION, SPORT, YOUTH
DIRECTORATE FOR LEARNING AND ASSESSMENT PROGRAMMES



Final Round Schedule



Vanishing Creatures (180 minutes)

The crew of the Starship Enterprise was destined to go on a time-travel adventure. But unlike any other time-travel movie dating to the 1980s, this journey is a creative piece of commentary on an environmentalism movement that put endangered species at its heart.

In the fall of 1986, Star Trek IV: The Voyage Home not only became a box-office hit, but it also propelled climate change and concern for endangered species into the mainstream. In short, Star Trek literally tried to save the whales in 1986, and it basically worked.

<https://www.inverse.com/entertainment/star-trek-4-the-voyage-saved-the-whales>



Develop a two-player game in which the players strive to become the hero of the game by saving as many vanishing animals as possible.

Functionality #1: Player Registration

Present a welcome screen with a menu prompting the two players to register their names to start playing or exit the program.

Functionality #2: Assign deck of cards to players

1. The game is populated with the records shown in table 1 below.
2. The game randomly splits the 10 records into two decks of 5 cards, one for every player.
3. The decks should remain hidden from the players until revealed during gameplay.

Animal	Weight (kg)	Height (cm)	Life Expectancy	Population	Conservation Status*
African Elephant	4535	304	70	415000	1
Black Rhino	1397	158	40	5500	1
Orangutan	90	180	35	112200	1
African Wild Dog	31	76	10	1409	2
Chimpanzee	60	170	33	299700	2
Tiger	299	110	11	3900	2
Bonobo	55	88	25	50000	2
Hippopotamus	3628	160	36	130000	3
Giant Panda	150	121	20	1864	3
Polar Bear	589	240	30	3100	3

*Conservation Status: 1 = Critically Endangered, 2 = Endangered, 3 = Vulnerable

Table 1: List of Endangered Animals

Functionality #3: Gameplay

1. The game picks a record from the list of endangered animals (as per Table 1) and presents it in the form of a card without showing the Conservation Status field, as in the sample screenshot below.

```

+++++
Animal: African Elephant
Weight: 4535 Kg
Height: 304 cm
Life Expectancy: 70 years
Population: 415000
+++++

```

2. The game randomly prompts either Player 1 or Player 2 to guess the Conservation Status of the chosen record by entering: 1 for Critically Endangered, 2 for Endangered, or 3 for Vulnerable.
3. If the chosen player guesses the Conservation Status, he/she wins the 'Conservation Status Challenge'. If not, the other player automatically wins this challenge.
4. The player who wins the Conservation Status Challenge is prompted to reveal the first card from his/her deck. The revealed card should not contain the Conservation Status field.

Assuming Kevin is the player who won the Conservation Status challenge, the prompting screen may look like the following sample screenshot.

```
----- Round 1 -----  
Kevin, press Enter key to reveal your card  
  
+++++  
Animal: Bonobo  
Weight: 55 Kg  
Height: 88 cm  
Life Expectancy: 25 years  
Population: 50000  
+++++
```

5. When the player's card is shown, the player then chooses which attribute to challenge the opponent with. For example, if in round 1 the player chooses "Population", the game will compare the population value of the first card of the player (50000) with that of the first card of the other player. The player whose card has the bigger attribute value wins the round and gains a Hero Point.
6. The game pauses until the player presses Enter to continue. Check sample screenshot below.

```
To challenge your opponent, choose an attribute:  
Weight (w), Height (h), Life Expectancy (e), Population (p)  
p  
  
You have chosen Population.  
You win this round.  
  
Press the Enter key to continue
```

7. The winner of the round will be prompted to reveal the next card from his/her deck. The gameplay continues for five rounds.
8. After the 5th round, the Hero Points of each player are shown and the player with the higher Hero Points is declared as the winner and the hero of the game.
9. The game prompts the players to play again or exit the program.

Functionality #4: Validation

To enhance the user experience, warning messages should be used, and runtime errors avoided when invalid inputs or non-existing options are entered. These include:

- players' name cannot contain less than 3 characters.
- conversation status can only be 1, 2 or 3.
- attributes chosen can only be 'w', 'h', 'e', 'p' (*not case sensitive*).

Name the class containing the main method **RunApp**.

Submit your program in a folder named **Vanishing_Creatures**

Hint:

- To ignore case sensitivity, the player's input can be changed into its lowercase equivalent. For example, if the user enters character 'B', it can be changed to character 'b'. This can be done using the code:

```
userInput = Character.toLowerCase(userInput);
```

- To check number of characters in a string, the **.length()** is used. For example, the code below displays the number of characters in variable name:

```
String name = "Ramona";  
System.out.println(name.length());
```

Assessment Rubric

Program Functionality	User-Friendly Interface	Proper use of Comments	Proper Conventions (Camel case, meaningful var names etc.)	Name of Folder & Class/es	User`s Input
Suitable Prompts / Messages displayed	Randomly assigns two decks of 5 cards	Randomly choose Player to start	Gameplay starts with the winner of the Conservation Status Challenge	Player winning the previous round, leads the next round.	Proper use of data structures.
Validation (Players' name)	Validation (Conservation Status)	Validation (Choosing attribute)	Validation (Avoid Runtime Error)	Other Features (Not listed in the task)	

Maximum Score: 32 + 2 for every extra feature.

0 – Not Satisfactorily | 1- Partly Satisfactorily | 2- Entirely Satisfactorily

