Programming CS

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. 1st Task - American Flag

For this exercise I created two possible outcomes:

* Another is drawn on the screen with the help of a JavaFx.
* One flag is printed on the terminal.

GUI Version

Text

Description automatically generatedProgram Code

1. start() and stop(): these methods come from the Application class and need to be overridden to make the application work.

Text

Description automatically generated

1. The wrapper method that coordinates the drawing of the flag.

Text

Description automatically generated

Text

Description automatically generated

1. get\_rectangle():

This method draws a rectangle with the given parameters: Width, height, starting x and y, and also a color.

Text

Description automatically generated

1. Method get\_starts() is responsible for coordinating the drawing of the stars.

Text

Description automatically generated

Text

Description automatically generated

1. Method get\_star() -> draws each star given the parameters.

Starting x and y, also width and height.

Text

Description automatically generated

Output:

Background pattern

Description automatically generated

Terminal Version

Program Code

Text

Description automatically generated

Output:

Table

Description automatically generated

. 2nd Task - BMI Calculator

I created this app with the help of the JavaFx software platform.

Program Code

This is the main class it holds the entire app.

Text

Description automatically generated

1) Main method :

Text

Description automatically generated

2) start() and stop() methods from the Application class.

Text

Description automatically generated

1. getUI() method:Text

   Description automatically generatedText

   Description automatically generatedText

   Description automatically generated
2. calc\_btn() method to create a button:

Text

Description automatically generated

1. Method to calculate the BMI:

Text

Description automatically generated

1. This function returns the verdict as a string after analysing the user’s BMI. This is later displayed to the user.

Text

Description automatically generated

Output:

The user can insert the weight in kilograms and the height in meters.

To calculate the BMI, the user must press the button “Calculate”, which will compute the value and display the final assessment of the BMI.

Graphical user interface, text, application

Description automatically generated

. 3rd Task - Online Store

Program Code

1. Main method

Declare and initialize a few variables.

The program functionality is inside the while loop.

* It prints the menu (calling menu()) in the beginning of the loop and lets the user choose an option.
* Later a switch is used to control the flow of the program depending on the choice of the user.

If it chooses:

-> Products, then the catalogue is showed, and waits for the user input.

-> Checkout, the total amount is calculated and it automatically exists the program showing the final amount.

-> Exit, it exists the program and shows a message.

Text

Description automatically generated

Text

Description automatically generatedText

Description automatically generated

1. print() and menu() methods:

These are just two methods written to help.

Text

Description automatically generated

1. printCatalogue() method:

This method is called when the user chooses the option to see the products from the main menu.

Text

Description automatically generated

1. inCart(), addItemToCart(), addQtyToCart():

These methods are called after the user chooses a product.Text

Description automatically generatedText

Description automatically generatedText

Description automatically generated

1. The checkout() method:

This method is only called when the user chooses the checkout option.

Text

Description automatically generated

. 4th Task - Election

The election system when started it prints massage telling the program started. Also explains to the user to enter a candidate name to vote for him/her and how to exit the program.

Program Code

1. Main method

Text

Description automatically generated

Text

Description automatically generated

1. getWinner() and printoutVotes():

Text

Description automatically generated

Output:

Program Flow

1. When the program is initiated:

Graphical user interface, text

Description automatically generated

1. When a name is entered:

Text

Description automatically generated

1. When exiting the program

Text

Description automatically generated

. 5th Task - Bank Account

Program Code