code.sprint MT

TASKS BOOKLET

- Qualifiers Round -

Secondary Category

2019

DIRECTORATE FOR LEARNING &
ASSESSMENT PROGRAMMES

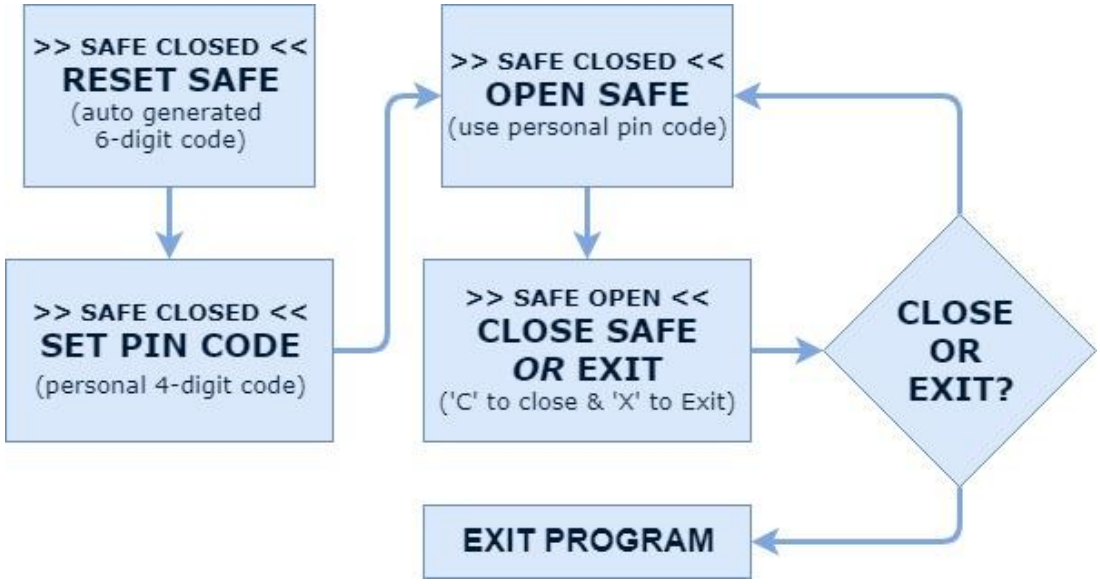
Qualifiers Round Schedule

Time Allotted	Analysis	Task	Submit	Break
09:30 – 09:40	Task 1			
09:40 – 10:20		Task 1		
10:20 – 10:25			Task 1	
20 minutes				Break 1
10:45 – 10:55	Task 2			
10:55 – 11:45		Task 2		
11:45 – 11:50			Task 2	
30 minutes				Break 2
FINALISTS ARE ANNOUNCED				

Task 1 – Hotel Room Safe Box (40 minutes)

Hotel guests should feel safe leaving their belongings in their room. Hotels from all around the world, nowadays offer a safe box in every room. Guests can therefore use the saftey box to secure any valuable personal belongings.

The safety box has a keypad so that the user can use a personal pin number to open and close the safe. Write a program that simulates a safe box which works as follows:



Program Rules:

- The guest must reset the safe box by using a 6-digit random pin code which is auto generated and displayed upon initialization of the program. *A proper message is displayed if a wrong pin, or a non-6-digit pin is entered.*
- After resetting the safe box, the guest should enter a personal 4-digit pin. *A proper message is displayed if a non-4-digit pin is entered.*
- The user can open the safe box by entering the personalised pin code. *A proper message is displayed if a non-4-digit pin is entered.*
- The user can close the safe box by entering '**C**' or exit program by entering '**X**'. *A proper message is displayed if the character 'C' or 'X' is not used to close the safe box or exit program respectively.*
- Proper indications of the status of the safe box should be displayed with every step.

Name the class containing the main method **RunApp1**
Submit your program in a folder called **TASK1_INDEXNUM**
e.g. TASK1_0025 or TASK1_0004

Assessment Rubric (Task 1)

Program Functionality	User-Friendly Interface	Code Efficiency	Proper use of In-line Text (Comments)	Use of Proper Conventions (Camel Case, meaningful variable names etc.)	Name of Folder & Class/es	User Input
Suitable Prompts / Messages displayed	Proper Randomisation (6-digit pin code)	User's input Validation (pin codes, close safe box & exit program)	Other Features (not listed in the task)	**Maximum Score: 20 + 2 for every extra feature**		
0 – Not Satisfactorily | 1- Partly Satisfactorily | 2- Entirely Satisfactorily						

Task 2 – Lotto Ticket (50 minutes)

The lottery is a game in which players pay for a ticket, select a group of numbers and win prizes based on how they match the drawn results.

Write a program that simulates a lottery system according to rules below:

Program Rules:

- The lottery system has a set of numbers available which is from 1 to 45.
- The lottery prize is that of €500,000.
- Five lottery numbers are automatically drawn and are not visible to the user. *Proper validation is required to avoid duplicate numbers.*
- The user is asked to purchase a lottery ticket.
- A lottery ticket is made up of five non-duplicate numbers. *Proper validation is required to avoid non-valid and duplicate numbers.*
- According to the numbers guessed, a prize is won:
  - With three numbers guessed, the user wins 10% of the lottery prize
  - With four numbers guessed, the user wins 25% of the lottery prize
  - With five numbers guessed, the user wins lottery prize in full.
- The result-screen should display the numbers drawn, the amount of numbers guessed, and the prize won (if applicable).

Name the class containing the main method **RunApp2**
Submit your program in a folder called **TASK2_INDEXNUM**
e.g. TASK2_0025 or TASK2_0004

Assessment Rubric (Task 2)

Program Functionality	User Friendly Interface	Code Efficiency	Proper use of In-line Text (Comments)	Use of Proper Conventions (Camel Case, meaningful variable names etc.)
Name of Folder & Class/es	User Input	Suitable Prompts / Messages displayed	Numbers Drawn Automatically (5 numbers)	Validation (non-duplicates & valid numbers)
Arithmetic Calculations (total numbers guessed & prize won)	Proper Use of Data Structure (such as Arrays)	Other Features (not listed in the task)	**Maximum Score: 24 + 2 for every extra feature**	
0 – Not Satisfactorily | 1- Partly Satisfactorily | 2- Entirely Satisfactorily				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