DS'18 Projects

Project #1

Title	Task Manager
Responsible TA	Nehal Magdy

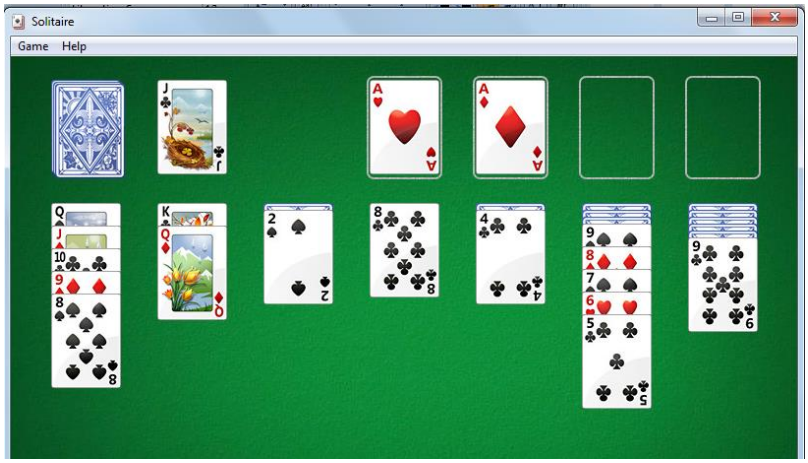
Description	Develop a task manager application using an appropriate data structure.
	
	Data about tasks is:
	- ID
	- Description
	- Name
	- Date
	- Finished
	
	A user can do the following functionalities:
	- Add new task.
	- Update task data (i.e. changing its date for example).
	- Submit a task as finished.
	- Delete a task.
	- Display the tasks according to the date.
	- Search capability
	  - By name.
	  - By certain date.
	  - Finished tasks.
	  - Unfinished tasks.

Minimum requirements	• All previously mentioned functionalities. • You have to maintain fast search capability. • Tasks are stored in files.
Bonus Opportunities	Graphical User Interface.
Development Tool	C++

Project #2

Title	**Events' Scheduler**
Responsible TA	Aya Ahmed
Description	This is an application to schedule the events for the user. • Each event must have: 1. A name 2. A start date 3. An end date 4. A place 5. Reminder time … etc 6. Done (Yes/No) • The user must be able to: 1. Add, 2. Delete or 3. Update an event. • The application should refuse to add an event that intersects with another event. i.e. (same place and collapsing in time with the other event) • The user can display his upcoming events sorted by start date or sorted by reminder time. • When an event is done it should o disappear from the upcoming events. o be added in another data structure holding only the done events. • The user can display the done events • Store your data in files, no need for data base
Minimum requirements	• You must implement the suitable Data Structures to be used in your program. • You must fulfill **all** the above requirements.
Bonus Opportunities	• Any extra modules designed to give more functionality to your application. • Good GUI. • Programming with other language than C++.
Development Tool	• C++ **Note:** You will need to store the league information either using files or database.

Project #3

Title	**Solitaire Game**
Responsible TA	Aya Ahmed
Description	-it's a game that you has in your computer there are 7 piles on the tableau containing 28 cards. The first pile has 1 card, the second 2, the third 3, and so on up to the seventh pile. Initially, the top card of each pile is turned face up; all other cards are face down. The remaining cards that are not part of the tableau are placed in the deck-pile. Above the tableau there are five more piles that are initially empty, one discard-pile and four suit-piles, one for each suit of cards. The suit-piles (sometimes called foundations) are built up from aces to kings in one suit. They are constructed as the cards become available. The object of the game is to build all 52 cards into the suit piles through a number of allowed moves.  The various moves the player can make are the following: 1) take the faced-down top card from the deck and place it face up on top of the discard pile 2) take the top card of the discard pile and place it on top of a tableau pile or suit pile 3) take the faced-up top card or a sequence of faced-up cards (called a build) from a tableau pile and place it (still in sequence) on top of another tableau-pile 4) take a faced-up top card of a tableau-pile and move it to a suit pile 5) turn over a faced-down top card of a tableau pile 6) when the deck-pile is empty, take the complete content of the discard pile, turn it over, and use it as a new deck-pile. A move can't be made when these rules are not satisfied. When the object of the game is reached or when no more moves can be made, the game is over.
Minimum requirements	• You must implement the suitable Data Structures to be used in your application. • You must fulfill **all** the above requirements.

Bonus Opportunities	• Any extra modules designed to give more functionality to your application. E.g. : undo last move • Good GUI. • Programming with other language than C++. • Saving the played game to continue later.
-Development Tool	C++ using sfml

Project #4

Title	**HangMan Game**
Responsible TA	Aya Ahmed

Description	A Word Guessing that gives the user the chance to guess the letters of a certain word in 9 chances. Your game should do **at least** the following:
	• Store a suitable number of words (at least 100) divided in different categories (ex. countries, movies…etc).
	• Either Select a word randomly and show its category / or Let the user choose the category from a list.
	• Give 3 different levels: Easy, Medium, Hard (depending on the word difficulty).
	• Let the user guess letters in maximum 9 trials:
	  o He wins if he knows the word before the 9 trials are used.
	  o He loses if he guessed the 9 trials and the word is still incomplete.

Minimum requirements	• You must implement the suitable Data Structures to be used in your application. • You must fulfill **all** the above requirements.
Bonus Opportunities	• Any extra modules designed to give more functionality to your application. • Good GUI, drawing the process of hanging the man. • Programming with other language than C++.
Development Tool	C++
Reference Material	https://en.wikipedia.org/wiki/Hangman_(game)

Project #5

Title:	**Online shopping store**
Responsible T.A.:	Tasneem Gameel
Description:	The Project is required to show the available products for the users to buy with a valid Credit card, the Shopper can add his items in a shopping cart
Main Functionalities: (Minimum Requirements)	1- Login 2- Registration 3- Management of data for both shoppers and owners 4- Add new product 5- Remove Product 6- Search for A specific product 7- View Products information 8- Add items in a shopping cart 9- Allow user to check cart any time allowing him to remove or add any item 10- Creating Receipt 11- You can add Any Additional Functionalities which serve your Project
Bonus:	• Graphical User Interface • Any related additional functions
Development Tool:	C++ or C#

Project #6

Title:	**Music CD's and instruments rental System**
Responsible T.A.:	Tasneem Gameel
Description:	Assume a company that rent CD's and instruments such that a client applies for a CD or an instrument and once they are available he/she can rent it. In case more than one client applies for the same the CD or instrument **the first client has the right to take it.**
Main Functionalities: (Minimum Requirements)	• CD / Music Instrument Data: 1. Name 2. Code. 3. Type. • Admin Data: 1. Name. 2. Password. • Admin Functionalities: 1. Add new CD. 2. Add new instrument. 3. Remove CD. 4. Remove Instrument. 5. View a report of all the rent transactions. 6. Add new client. • Client Data: 1. Name. 2. ID. 3. Password. • Client Functionalities: 1. Apply for renting a CD/instrument. 2. Receive renting acceptance. 3. View his/her history
Bonus:	• Graphical User Interface • Any related additional functions
Development Tool:	C++ or C#

Project #7

Title	**Taxi management system.**
Responsible T.A.	Nouran Ayman
Description	Assume a taxi company that manages client reservation online such that reservation to assigned to the first available driver. ☒ Car Data 1) Plate Number. 2) Color. 3) Year. 4) Model. 5) Driver ID. ☒ Driver Data: 1) Name. 2) ID. 3) Salary. 4) Status. ☒ Driver Functionalities: 1) Log in. 2) Receive client request. 3) Change his status. 4) View all his previous trips. ☒ Client Data: 1) Name. 2) ID. 3) Password. ☒ Client Functionalities: 1) Register 2) Log in. 3) Reserve taxi. 4) View his/her history. ☒ Admin Data: 1) Name 2) Password ☒ Admin Functionalities: 5) Log in. 6) Add new driver. 7) Add new car. 8) View Report of all trips.
Delivery Requirements	C++ Application using Files for storing data.
Bonus	C# windows Application.

Project #8

Title	Student Attendance management system
Responsible T.A.	Nouran Ayman
Description	Assume an attendance management system for student affairs unit that monitors students' absence limits. Absence Rules: Student who did not show up for 3 weeks is not allowed to attend course final exam. ☒ Employee Data: 1) Name. 2) Password. ☒ Employee Functionalities: 1) Log in 2) Record Attendance for each student. 3) View a report of all students that exceed that absence limit. ☒ Course Data: 1) Code. 2) Name. 3) Academic Year. ☒ Student Data: 1) Name. 2) ID. 3) Academic Year. ☒ Student Functionalities: 1) Log in 2) View attendance Sheet for each course.
Delivery Requirements	C++ Application using Files for storing data.
Bonus	C# Windows Application.