Swinburne University of Technology Sarawak

COS10009 Introduction to Programming

File Input / Output, Custom Data Type (Lab 08)

Pass Task 8.1 Text Based Music Player with Menu

Task: To design code that integrates various modules

To Do:
This task allows you to extend your text-interface music application from previous task to provide a menu for users (Please retrieve your completed task from the previous lab). Your extended text based music application must add the following functionality:
(Display a menu that offers the user the following options)

1. Read in Albums
2. Display Albums
3. Update an Existing Album
4. Exit the application

(Please refer to classes and functions written in previous tasks to help you get started)

Menu option 1 (Read in Albums) should prompt the user to enter a filename of a file that contains the following information (refer albums.txt in resources folder for this task):

• The number of albums
• The first album name
• The first artist name
• The file location of album's photo (you need to edit the Album class from previous task)
• The genre of the album
• The number of tracks
• The name and file location (path) of each track.
• The album information for the remaining albums.

Menu option 2 (Display Albums) should allow the user to display either all albums or all albums for a particular genre. The albums should be listed with a unique album number, which can be used in Option 4 to select an album to update. The album number should serve the role of a 'primary key' for locating an album. But, it should be allocated internally by your program, not by the user.

Menu option 3 (Update an Existing albums) should allow the user to enter a unique album number and enter a new customized title for the album. The updated album should then be displayed to the user and the user prompted to press enter to return to the main menu (you do not need to update the file at this at this moment).

Menu option 4: Exit needs additional functionality. If the user has changed any of the album information since the application started, then on exit you need to display the message "Updating album file information" and you need to rewrite all the album and track information into the original file name such that the file can be loaded (with the new information) next time the application is run.
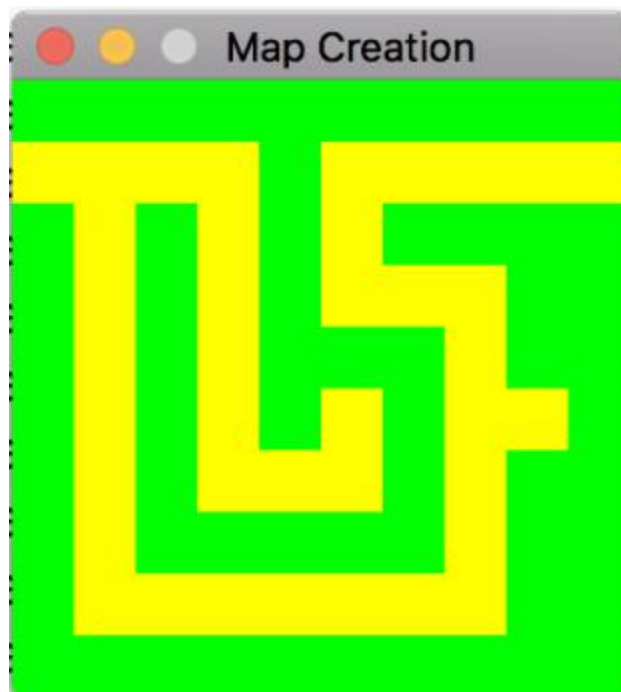
HD Task 8.1 Maze Search

Task: The program must allow the user to create a maze on the screen by modifying code in the appropriate sections. Then, this program will allow you to implement a search using recursion.
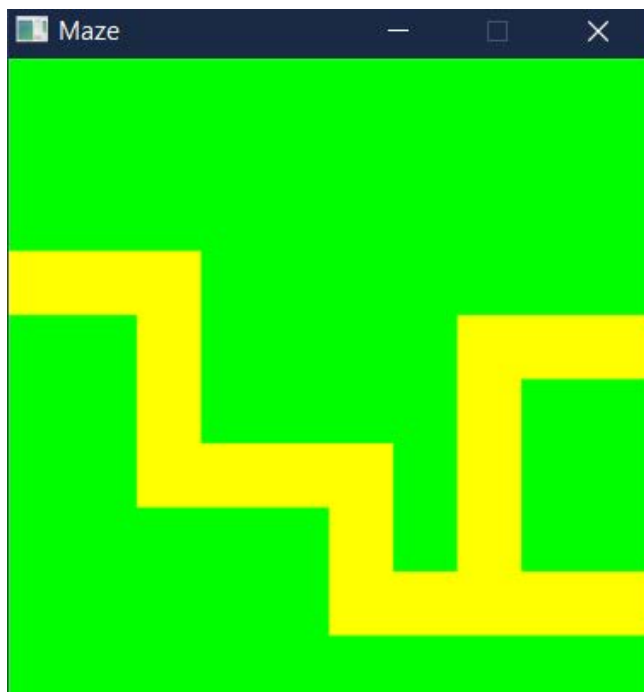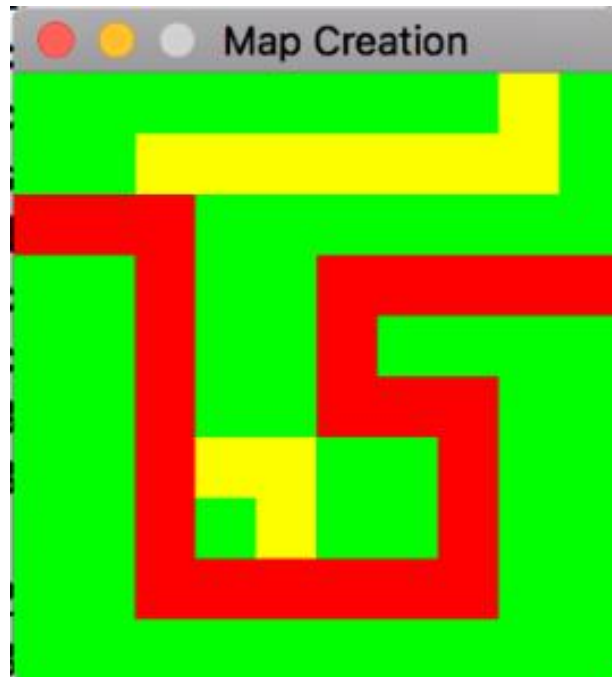
To Do
Use the code provided (from this task's resources) to get started.
You must complete the code so that it works as follows:

1. The code in the initialize() procedure of the SDL window should be completed to set up cells that are connected to each other with variables joining each cell to its neighbours (using references).
2. The user should be able to left click on cells on the screen to create mazes (and later in the Maze Search task we will use recursion to find a path through the maze).
3. Each cell clicked on should turn yellow. A created maze may look something like:

4. Once the user has used the Left Mouse Key to create at least one path from one side of the screen to the other, the user should then be able to Right Click the mouse on a yellow cell on the left most side of the screen.
5. The program should then search using the recursive search() function to find a path to the right side of the screen following one of the user's created paths.
6. Each cell on the path should then be displayed in red.

A found path through the maze may look something like:

after right click,
red path is drawn