Swinburne University of Technology Sarawak

COS10009 Introduction to Programming

Array (Lab 06)

Pass Task 6.1 One Dimension Array

Task: In this task, you will create an array to store integers, and perform arithmetic operations on the integers in the array by using loop structure.

To Do:

a. Declare an array with the size of 10 to store integers in descending order starting from 5 (use a *for* loop to assign those integers into the array).
b. Write a function to display the array to terminal by using a for loop.
c. Allow user to input a new integer and assign it to the element in the array selected by the user (prompt user to input integer and location to store the integer).
d. Display the entire array by calling the display function in (b)
e. Calculate and display the total of all the positive integers and the highest value in the array.

Pass Task 6.2 Two Dimension Array

Task: In a typical competition / tournament, the number of participating teams might vary each time and could not be known in advance. You will need to write a program in C to store individual score of the all the players and calculate team score for each participating team. You will need a 2D array to assist you in handling the data in this program.

To Do

a. Download 6_2.c from resources folder, and follow the comments given.
b. Prompt user to enter the total number of teams
c. Create an array with the size that is according to the total number of teams
d. Call input() function to acquire individual score for all the players in each team and store them in the 2D array.
e. Call disp_arr() function to display the content of the 2D array.
f. Call teamscore() to calculate the total team score. This function will only calculate team score for one team every time it is called.
g. Display the total team score for each team.

Sample output for Task 6.2

```
Enter number of teams:
2
Enter score for player 1 team 1:
1
Enter score for player 2 team 1:
2
Enter score for player 3 team 1:
3
Enter score for player 4 team 1:
4
Enter score for player 1 team 2:
5
Enter score for player 2 team 2:
6
Enter score for player 3 team 2:
7
Enter score for player 4 team 2:
8
1 2 3 4
5 6 7 8
Total score for team 1 is 10
Total score for team 2 is 26
```

Distinction Task 6.1 Food Hunter

Task: Demonstrate that you can apply programming principles to modify a simple game program. This task allows you to expand your understanding of the C programming language and to see how the principles and ideas from structured programming relate to Object Oriented programming.

To Do:

In this task, you are provided with the C source code for a version of the Food Hunter program. Download the C Food Hunter starter code foodhunter.c code from resources folder for this task.
You are required to extend that program to implement the changes specified below:

1. Food objects that appears on the screen should randomly be selected to change direction. When selected for changing direction the image for the food item should momentary display/flash the 'smoke.png' icon (see the media folder in the Resources folder) long enough for the user to briefly see it before the food item/object changes its movement to a random selected direction.
As the programmer, you will need to experiment to determine what is an appropriate frequency of selection in relation to good game play.

2. Add global constants SCREEN_HEIGHT and SCREEN_WIDTH, change the screen dimensions to 800 x 600. Make sure everything works as it should.