11.3 LAB TASKS

1. Write a function that computes the alternating sum of all elements in an array. For example, if *alternating_sum* is called with an array containing:

   1 4 9 16 9 7 4 9 11

   Then it computes

   $$1 - 4 + 9 - 16 + 9 - 7 + 4 - 9 + 11 = -2$$

   [20 marks]

2. Write a function called *reversit()* that reverses an array of characters. Use a for loop that swaps the first and last characters, then the second and second-last characters, and so on. The array should be passed to *reversit()* as an argument. Write a program which gets a list of characters from the user, calls *reversit(),* and prints out the result.

   [20 marks]

3. Write a function

   bool ***equals****(int a[], int a_size, int b[], int b_size)*

   that checks whether two arrays are identical (i.e. whether they have the same elements in the same order).

   [20 marks]

4. Write a program which takes two 3 x 4 matrices (2D arrays) of the same order from the user and then adds them. Store the answer in another matrix and display it.

   [20 marks]

5. A matrix which is formed by turning all the rows of a given matrix into columns and vice-versa is knows as transpose of the given matrix. Write a program which initializes a matrix by asking the user, and then displays its transpose along with the original matrix. Make sure to use the following two functions:

   void ***transpose****(int mat[][3], int r1, int trans[][3], int r2)*

   void ***display_matrix****(int mat[][3], int r)*

   Take the input matrix from the user in main and then call these function to achieve the requirements of task.

   Note: Order of the matrix should be 3 by 3.

   [20 marks]