PROGRAMMING METHODOLOGY

Review 3

1 Exercises

1. Write functions to calculate the following expressions: DONE

   a. $\sum_{i=1}^{n} \frac{i}{2}$ Phân số => kiểu float

   b. $\sum_{i=1}^{n} (2i + 1)$

   c. $\sum_{i=1}^{n} \frac{i+1}{i+2}$

   d. $\sum_{i=1}^{n} (i! + 1)$

   e. $\prod_{i=1}^{n} i$

   f. $\prod_{i=1}^{n} i!$

   g. $\prod_{i=1}^{n} \frac{2i}{3}$

   h. $\prod_{i=1}^{n} \frac{(i-1)}{(i+1)}$

2. Write a C function to enter any number and check whether the number is palindrome or not. Số khi đảo = số khi nhập

   Input: 123
   Output: 123 không là số Palindrome

   Input: 1221
   Output: 1221 là số Palindrome

3. Write a C function to check whether a number is Prime number or not. Validating the input, in case the input isn't correct, prompt user to enter it again. SNT

4. Write a C function to check whether a number is Armstrong number or not.

5. Write a C function to check whether a number is Perfect number or not. SHT

6. Write a C function to print all Prime numbers between 1 to *n*. Validating the input, in case the input isn't correct, prompt user to enter it again.

7. Write a C function to print all Armstrong numbers between 1 to *n*. Validating the input, in case the input isn't correct, prompt user to enter it again.

8. Write a C function to print all Perfect numbers between 1 to *n*. Validating the input, in case the input isn't correct, prompt user to enter it again.
9. Write a C function to convert Decimal to Binary number system.
10. Write a C program to convert days into years, weeks and days.
11. Write function to find the maximum number of an integer array.
12. Write function to find the minimum number of an integer array.
13. Write function to sum all numbers of an integer array.
14. Write function to sum all non-positive numbers of an integer array.
15. Write function to sum all even numbers of an integer array.
16. Write function to reverse an array without using any temporary array.
17. Write program to delete an element from an array at specified position.
18. Write program to count total number of duplicate elements in an array.
19. Write program to delete all duplicate elements from an array.
20. Write program to count frequency of each element in an array.
21. Write program to merge two array to third array.
22. Write program to put even and odd elements of array into two new separate arrays.
23. Write program to search an element in an array by providing *key* value.
24. (*) Write program to sort array elements in ascending order.
25. Write program to add two matrices.
26. Write program to subtract two matrices.
27. Write program to multiply two matrices.
28. Write program to check whether two matrices are equal or not.
29. Write program to find transpose of a matrix.
30. Write program to find determinant of a matrix.

2 Reference

[1] Brian W. Kernighan & Dennis Ritchie (1988). *C Programming Language, 2nd Edition*. Prentice Hall.

[2] Paul Deitel & Harvey Deitel (2008). *C: How to Program, 7th Edition*. Prentice Hall.

[3] *C Programming Tutorial* (2014). Tutorials Point.

[4] *C Programming* (2013). Wikibooks.