

NUMERICAL COMPUTATIONAL TECHNIQUES
CS 1014
HOMEWORK ASSIGNMENT 2
Due in Class on March 30, 1999

In this assignment you will have the opportunity to exercise your knowledge about DO WHILE ... END DO and DO ... END DO loops to write Fortran program segments.

Problems:

1. Write a Fortran code segment to calculate the following sum:

$$\text{sum} = 1 + 4 + 7 + 10 + \dots + 1108 + 1111$$

2. Write a Fortran code segment to perform the following infinite sum:

$$\text{sum} = 1 + 1/2 + 1/4 + 1/8 + 1/16 + 1/32 + \dots$$

The sum is to be performed until the last term in the series to be added is less than 0.00001.

3. Write a Fortran code segment to calculate the following sum:

$$\text{sum} = -1 + 3 - 5 + 7 - 9 + \dots - 999 + 1001$$

4. Write a Fortran code segment to add numbers as they are entered one at a time from the keyboard. The program segment should continue adding a number until it receives a number less than 1 or a number greater than 100 from the keyboard. Particularly, when it receives a number less than 1 or greater than 100, it should stop adding.

5. Write a Fortran code segment to add all numbers from 1 to 1000 except the numbers that are divisible by 7.

Submission Requirement:

You are not required to write a complete program for each of the problems described above -- only you have to write a small loop with some variables and conditions that would implement the solution of the problem. Turn in a few typewritten or computer-printed pages with your solutions. The due date for the assignment is March 30, 1999. The late penalty is 20% for each day.