Programming II

2022-I

Jose'e Fiestas

08/04/22

University of Engineering and Technology
jfiestas@utec.edu.pe

Task 03:
Functions

Modality: group (3 members)

Score: 3 pts.

Exercise 1: (1 pt)

Newton's method for calculating PI is based on the following equations:

$$\text{arcsen}\,(1/2) = \ddot{y} / 6$$

$$1\ \text{arcsen}(x) = x + 2 \left(\frac{3\,x}{3} + \frac{1 \cdot 3}{2 \cdot 4} \cdot \frac{5\,x}{5} + \frac{1 \cdot 3 \cdot 5}{2 \cdot 4 \cdot 6} \cdot \frac{7\,x}{7} + \ldots \right)$$

Develop a function that calculates PI.

Exercise 2: (1pt)

Recursively find the sum of the squares of the numbers from 1 to n, where n is entered by the user.

Exercise 3: (1pt)

Find the final amount of an initial amount (principal) after installments, at

an annual interest of i%, according to the following formula:

final amount=initial amount*(1+i/100)

where i is the annual interest

Implement two functions, one for the recursive method and one for the non-recursive method.

recursive, for calculation