Assignment 9 – Group: Francisco, Victor, Bruno, Yasser

**Exercise 39**

**Analysis:**

INPUT: grades – array of integers

OUTPUT: average - double

INTERNAL DATA: i – integer, sum - integer

PROCEDURE:

Create an array with 1000 positions. Get the user input for 1000 grades, verify if the number is between 0 and 100, if no, display a message of error and ask to try again, if the number is correct, for each number read, store the number in the array created. Sum all elements of the array and divide the result by 1000. Display the result.

**PSEUDOCODE:**

VARIABLES:

grade – array[1,1000] of double (input)

i – int (temporary)

sum – double (temporary)

average – double (output)

START

FOR i=1 TO 1000 JUMP 1

WRITE “Enter the grade”, i

READ grade[i]

IF grade[i]<0 or grade[i]>100 THEN

WRITE “The grade should be between 0 and 100, try again”

END IF

END FOR

sum = 0

FOR i=1 TO 1000 JUMP 1

sum += grade[i]

END FOR

average = sum/1000

WRITE average

**TRACE TABLE**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Sum** |  |  |
|  | ***+=grade[i]*** | **Grade[i]** | **i** |
|  | 0 |  |  |
|  | grade[0] | grade[0] | 0 |
|  | grade[0]+grade[1] | grade[1] | 1 |
|  | grade[0]+grade[1]+grade[2] | grade[2] | 2 |
|  | .  .  . | .  .  . | .  .  . |
|  | grade[0]+grade[1]+grade[2]+…+grade[999] | grade[999] | 999 |