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NJJ

Apologies

01- It removes compiler’s secure warnings while using some commands for example scanf()

02- It includes the library standard input and output so we can use the commands stored in this library

04- defines NUM\_STUDENTS as 2 – which means wherever we use NUM\_STUDENTS it will be considered as 2

05- defines NUM\_DIGITS as 2 – which means wherever we use NUM\_DIGITS it will be considered as 2

07- creating a struct with the name StudentInfo

09- giving options (features) to our struct ---- a variable type of int named studentId

10- giving options (features) to our struct ---- a variable type of double named mark

13- our main function begins

15- creating an array struct with the features we added to ‘StudentInfo’ with the name ‘students’ and it has ‘NUM\_STUDENTS’ which represents 2, columns.

17- setting information for the first student which will be stored in students[0] (first column of array struct student),

studentId = 74

mark 68.8

18- setting information for the second student which will be stored in students[1] (second column of array struct student),

studentId = 28

mark 77.8

20- defining variables as the type of int which named ‘i', ‘j’, ‘k’, ‘flag’, ‘div’, ‘digit’ and all of them containing the value ‘NULL’ in them

22- program goes into the ‘for’ loop, sets the variable ‘i' to (0) and the loop will repeat as long as i is less than ‘NUM\_STUDENTS’ which is 2, and everytime loop repeats i will be incremented by 1

24- the variable flag will be set to (1)

25- setting the variable n by student[i].studentId, which in this case i is 0 so the first students ID will be set in to the variable n and it is 74

26- another ‘for’ loop begins and it sets the variable j to (‘NUM\_DIGITS -1) which is 1 because ‘NUM\_DIGITS’ is 2 therefore 2-1 is 1 and in will repeat as long as j is greater than or equal to 0 and everytime the loop repeats j will be decreased by 1

28- the variable div will be set as (1)

29- another ‘for’ loop begins and it sets the variable k to (0), it will repeat as long as k is less than j and it will increment k by 1 everytime it repeats

31- the formula div\*= 10. Multiplies the value stored in the variable div by 10, therefore its value is 10 now

29- k is increased to 1, k is not less than j anymore, therefore it will come out of the loop

33- by the formula digit = n/div. the value 7 will be stored in the variable digit, because ‘n’ is 77 and ‘div’ is 10 , therefore 77 divided by 10 is 7.7 but because we are using and integer variable only 7 will be stored in the variable digit

34. by the formula n = n%d, the value 7 will be stored in the variable ‘n’ because ‘n’ is 77 and ‘div’ is 10, therefore when you divide 77 by 10 the remainder will be 7. And this is what the sign % does, it will determine the remainder

35. program goes into a condition which says (0 != digit%2) which means if the remainder of the value stored in ‘digit’ (7) devided by 2 is not equal to 0, (basically means if we have any remainder)

Which in this case is true because the remainder is 1. The variable ‘flag’ will be set to 0

26. the variable j will be decreased by 1 and it is now 0, it will continue the loop because the condition is saying j greater than or equal to 0 in this case 0 = 0

28- the variable ‘div’ will be set to 1

29-it goes into the loop, sets the variable k to 0, sets the condition if k is less than j which is not true, therefore it will come out of the loop

33- the variable digit will be set to 7 because ‘n’ is 7 and ‘div’ is 1 and 7 divided by 1 is 7

34- the variable n will be set to 0 because we do not have any remainder when dividing 7 by 1

35- condition if the remainder of digit divided by 2 is not 0 which is true because 77 divided by 2 has the remainder 1

The variable ‘flag’ will be set to 0

26- j is decreased by 1 and is -1 now, the condition of the loop is not true anymore so it wont continue

37- condition if (flag) in this case 0 means false and 1 means true

Because flag is 0 thus our condition is false and it will not go into the condition

22- i will be incremented by 1 and is 1 now, the condition i<NUM-STUDENTS is still true (1<2)

24- flag is 1

25- n will be set as the id of the second student because i is 1 now and students[1].studentId is 28,though n is 28

26- program goes into a ‘for’ loop, sets the variable j as (NUM\_DIGITS which is defined 2 -1) therefore j is 1, sets condition if j is greater than or equal to 0 which is true (1>=0), and j will be decreased by 1 everytime it repeats

28- div is 1;

29- program goes into a ‘for’ loop, the variable k is 0, condition if k is less than j which is true 0<1, k will be incremented by 1 everytime it repeats

31- div is 10 now. 1\*10 = 10

33- digit is 2, because 28 divided by 10 is 2.8 but because the variable type is integer it cannot contain decimal

34- n is the remainder of n devided by 10 which is 8 in this case

35- condition if the remainder of digit divided by 2 is not 0 which is false, because 2 divided by 2 is 1 and the remainder is zero, so the condition will be skipped

26- j is decreased by 1 and is 0 now, the condition is still true because 0 equals to 0

28- div is 1

29- program goes into a function, sets k to 0, sets condition k is less than j, the condition is not true so it will skip the loop

33- digit is 2 because ‘n’ is 2 and ‘div’ is 1, and 2 divided by 1 is 2

34- n is 0 because if 2 divided by 1 do not have any remainder

35- condition if digit divided by 2 has any remainder which is false because 2 divided by 2 is 1 and does not have any remainder

37- condition if(flag), flag is 1 now and condition is true now because 0 in conditions represents false and anyu other number represents true

Condition is to print ("%d %.2lf\n", students[i].studentId, students[i].mark)

Which in this case i is 1 so the information of the second students will be printed as the text in the quotation below

“28 77.8”

22- i will be incremented by 1 now is 2, the condition is false because no longer i is less than NUM\_STUDENTS which is 2, therefore it will not repeat the loop anymore

42- program gives back the control to the computer and ends the program