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S21A

COMPRO1

06/25/2013

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Program name: Odometer

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Section: S21A

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#include<stdio.h>

/\* displays stars \*/

void stars()

{

printf("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

}

/\* asks for user input \*/

void getInputs(float \*fSpeed, float \*fSeconds)

{

printf("Please input the speed in km/h: ");

scanf("%f", fSpeed);

printf("Please input the time in seconds: ");

scanf("%f", fSeconds);

}

/\* converts given speed to meters per second \*/

float toMetersperSec(float fSpeed)

{

float fSpeed2;

fSpeed2 = fSpeed \* 1000 / 3600;

return fSpeed2;

}

/\* calculates the distance travelled \*/

float computeDistance(float fSpeed2, float fSeconds)

{

float fDistance;

fDistance = fSpeed2 \* fSeconds;

return fDistance;

}

int main ()

{

/\* variable declaration \*/

float fSpeed, fSeconds, fSpeed2, fDistance;

/\* diplays stars \*/

stars();

/\* calls the function to get inputs \*/

getInputs(&fSpeed, &fSeconds);

/\* calls functions as variables \*/

fSpeed2 = toMetersperSec(fSpeed);

fDistance = computeDistance(fSpeed2, fSeconds);

/\* displays the results \*/

printf("\nComputing distance... Done!\n\n"

"%.2f km/h is equivalent to: %.2f meters per second\n"

"The racecar has travelled: %.2f meters!\n\n"

"Thank You!\n",

fSpeed, fSpeed2, fDistance);

/\* displays stars \*/

stars();

return 0;

}

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Function | # | Description | Sample Input data | Expected Output | Actual Output | P/F |
| toMetersperSec() | 1 | Input is at base value | 1.00 | 0.28 | 0.28 | P |
|  | 2 | Input is a whole number | 24 | 6.67 | 6.67 | P |
|  | 3 | Input is a real number | 65.57 | 18.21 | 18.21 | P |
| computeDistance() | 1 | Input is at base value | 1.00 | 0.28 | 0.28 | P |
|  | 2 | Input is a whole number | 78 | 520.00 | 520.00 | P |
|  | 3 | Input is a real number | 34.02 | 619.64 | 619.64 | P |