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CSCS-1 #0105

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Assignment 1: IOAA Document

Input Variables Table

|  |  |  |
| --- | --- | --- |
| Variable Name | C++ Data Type | Remarks/Comments |
| Weight | double | Person’s weight in pounds |
| Height | double | Person’s height in feet |
| Age | int | Person’s age in years on their last birthday |
| ActivityFactor | double | Refer to the table |

\* ActivityFactor table

|  |  |
| --- | --- |
| Activity Description | Multiplication Factor |
| Sedentary, little or no exercise, desk job | 1.2 |
| Lightly active (light exercise 1 to 3 times a week) | 1.375 |
| Moderately active (Exercise 3 to 5 times a week) | 1.55 |
| Very active (Exercise 6 to 7 times a week) | 1.725 |
| Extra active (Exercises two times a day.  Includes running marathon etc.) | 1.9 |

Output Variables Table

|  |  |  |
| --- | --- | --- |
| Output Variable name | C++ Data Type | Remarks/Comments |
| BMR | double | Person’s basic metabolic rate |
| CaloriesBurnt | double | BMR\*ActivityFactor |

Analysis

|  |  |  |
| --- | --- | --- |
| Output variable | Math Form | C++ Form |
| BMR | 66 + 6.2 x Weight + 152.4 x Height – 6.8 x Age | 66 + 6.2\*Weight + 152.4\*Height – 6.8\*Age |
| CaloriesBurnt | BMR x ActivityFactor | BMR\*ActivityFactor |

Algorithm

1. Declare Weight as double

2. Declare Height as double

3. Declare Age as int

4. Declare ActivityFactor as double

5. Declare BMR as double

6. Declare CaloriesBurnt as double

7. print, “To advance your health we will calculate as to how much calories did you burn today.”, EOL

8. print “We will need data on your weight, height, and age and what kind of activity you do.”, EOL

9. print, “All your information will be kept confidential and no salesman will call.”, EOL

10. print, “Please enter your weight in pounds[xx.xx] and then press enter key: ”

11. Prompt user to input weight

12. Get and store in Weight

13. print, “Please enter your height in feet[xx.xx] and then press enter key: ”

14. Prompt user to input height

15. Get and store in Height

16. print, “Please enter your age in years [xx] and press enter key:”

17. Prompt user to input age

18. Get and store in Age

19. print, “These are the activity numbers for your life style. Please enter just one of them.”, EOL

20. print, “If you have a desk job and do no exercises then enter 1.2”, EOL

21. print, “If you do light exercise 1 to 3 days a week then enter 1.375”, EOL

22. print, “If you do moderate exercises 3 to 5 times a week enter 1.55”, EOL

23. print, “If you do hard exercises 6 to 7 days a week, enter 1.725”, EOL

24. print, “If you train hard in sports twice a day enter 1.9 : ”, EOL

25. Prompt user to input ActivityFactor

26. Get and store in ActivityFactor

27. BMR = 66 + 6.2\*Weight + 152.4\*Height – 6.8\*Age

28. ColoriesBurnt = BMR \* ActivityFactor

29. print, “\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*”, EOL

30. print, “Here are the results from our computation.”, EOL

31. print, “\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*”, EOL

32. print, “You burn “, CaloriesBunt, “ calories every day.”, EOL

33. print, “If your calorie intake per day is more than this number then”, EOL

34. print, “you may wish to include more exercises in your daily life.”, EOL

35. print, “Alternatively you may wish to cut down on your calorie intake as well.”, EOL

36. print, “\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*”, EOL

37. print, “Here are the calories in some of the popular foods:”, EOL

38. print, “One Doughnut has about 250 to 300 calories.”, EOL

39. print, “One butter croissant has about 272 calories.”, EOL

40. print, “One piece of cheesecake has about 260 calories.”, EOL

41. print, “One Danish pastry has about 353 calories.”, EOL

42. print, “One bagel has about 156 calories.”, EOL

43. print, “\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*”, EOL

44. print, “Thanks for using El Camino college calorie calculation program.”, EOL

45. End