

Hunter Poole
CSCI 155 HW4, Problem 2

Three Step Analysis:

- A. Take the number of drinks, hours drinking, body weight in pounds, and gender. Provide Blood Alcohol Content and status message to 3 decimal places.

a.

INPUT	OUTPUT	EQUATIONS
Drink quantity	[BAC #] 0.000	$((\text{GramsAlcohol}) / ((\text{WeightGrams}) * \text{Gender})) * 100) - (\text{MetabolicRate}) = \text{BAC}$
Hours of drinking	"You are just fine"	If (Gender == "Male") $\text{BAC} = ((\text{GramsAlcohol}) / (\text{WeightGrams} * \text{MALE}) * 100) - (\text{MetabolicRate});$ end if
Gender	"Slurring Speech, loss of balance"	If (Gender == "Female") $\text{BAC} = ((\text{GramsAlcohol}) / (\text{WeightGrams} * \text{FEMALE}) * 100) - (\text{MetabolicRate});$ end if
Weight	"Alcohol poisoning. Loss of Consciousness"	$\text{MetabolicRate} = \text{HoursDrinking} * 0.015;$ $\text{GramsAlcohol} = \text{NumDrinks} * 14;$ $\text{WeightGrams} = \text{WeightPounds} * 454;$
	"Needs assistance in walking; total mental confusion"	If (BAC == 0) write "You are just fine" end if
	"Feeling good"	[As above, etc for each status message] [> 0 && <= 0.5] [> 0.05 && <= 0.2] [ETC]
	"Onset of coma, possible death due to respiratory arrest"	

- B. Limits / Constraints:

- a. Order of inputs: gender, body weight, drinks, hours.
- b. Then output.

Hunter Poole
CSCI 155 HW4, Problem 2

final MALE = 0.68, FEMALE = 0.55

write "Male or Female?"

read Gender

write "What is your body weight in pounds?"

read WeightPounds

write "How many drinks have you had?"

read NumDrinks

write "How many hours have you been drinking?"

read HoursDrinking

MetabolicRate = HoursDrinking * 0.015;

GramsAlcohol = NumDrinks * 14;

WeightGrams = WeightPounds * 454;

if (Gender == "Male")

BAC = ((GramsAlcohol) / (WeightGrams * MALE) * 100) - (MetabolicRate);

end if

if (Gender == "Female")

BAC = ((GramsAlcohol) / (WeightGrams * FEMALE) * 100) - (MetabolicRate);

end if

If (BAC == 0)

write "BAC = " + BAC + "You are just fine"

end if

if (BAC > 0 && BAC <= 0.05)

write "BAC = " + BAC + "Feeling good"

end if

if (BAC > 0.05 && BAC <= 0.2)

write "BAC = " + BAC + "Slurring speech, loss of balance"

end if

if (BAC > 0.2 && BAC <= 0.249)

write "BAC = " + BAC + "Needs assistance in walking; total mental confusion"

end if

if (BAC > 0.249 && BAC <= 0.399)

write "BAC = " + BAC + "Alcohol poisoning. Loss of consciousness"

end if

if (BAC > 0.399)

write "BAC = " + BAC + "Onset of coma, possible death due to respiratory arrest."

end if