

Programming languages (TC-2006)

Midterm Exam - Prolog

Date: 08 June, 2021

This exam contains four problems. You are requested to solve all of them. Please note that this time, there is no template for the solution. This is on purpose since you should have the flexibility to solve these problems to fit your needs best. Please note that you must submit only the working code. If your code does not run, your final grade will be zero. Then, comment out any piece of code that does not work. However, feel free to include comments to explain your rationale, particularly when the code is commented out because it does not work as requested.

1 tea (20%)

Assuming that:

$$\begin{aligned}P + E + A &= 22 \text{ MXN} \\P + E + A + T &= 42 \text{ MXN}\end{aligned}$$

How much is $T + E + A$?

2 candy (25%)

Sanjev and Susan eat the rest of Jack's sweets, after he had enjoyed $\frac{3}{8}$ of them. Susan eats 200% **more** than Sanjev, who only had 15 sweets. How many sweets did Jack eat?
Hint: Use div to indicate integer division.

3 ages (25%)

Once upon a time, there were three children, Bob, Ben, and Tom. If you add together the age of Bob and Ben, you get Tom's age. If you add together the age of Bob and Ben, after having raised both to the power of the children involved in this puzzle, then you still get Tom's age squared. If you add together the age of Bob and Ben, after having squared Bob's age and raising Ben's age to the power of the children involved in this puzzle, you still get Tom's age squared. How old are the three children?

4 houses (30%)

Four avengers have moved to a small neighborhood, to four houses in a row (each of a different color: red, yellow, blue, and green; not necessarily in that order). The information we have at the moment is that Bruce lives in the third house, Tony lives in the green house, Peter is Bruce's neighbor, and Steve does not live in the blue house. Besides, we know that Steve's house is located before Peter's. The red house is either the first or the last. What color is Steve's house?

Deliverables



Prepare a PL file that contains the functions requested and submit it to Canvas.
Please, do not submit other formats but PL.



I promise to apply my knowledge, strive for its development, and not use unauthorized or illegal means to complete this activity, following the Tecnológico de Monterrey Student Code of Honor.