

Assignment #3
Due: Monday 14th of December, 2020

Note:

1. Late submissions receive zero credit.
 2. If you show me only the output without code, you get very low credit.
 3. Submit in hard form.
 4. Do not knock at the door. Just slide beneath the door.
 5. Total marks are 40
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Q:-1 Write a program that will have two inputs. The first input will be a relation R in the form of tuples and the second input will be the set A based on which the relation is defined. You can use any logic for accepting the input relation but it must be an input from the user.

The program should check the relation for presence of the properties of reflexive, symmetric and antisymmetric. In case any property does not hold, then it should tell me that the property does not hold and will also give me at least one tuple due to which the property does not hold. The program should have separate modules / functions for

- a. To check if the input relation R is correct based on the set A. if not then show some message
- b. To check for reflexive property
- c. To check for symmetric property
- d. To check for antisymmetric property

Check your program on the following inputs and show me the results / screen shots of the output

1. $A = [], R = \{(a,a)\}$
2. $A = [], R = \{\}$
3. $A = [1,2,3,4,5,6], R = \{(1,1), (2,2), (3,2), (3,3), (4,4), (5,5), (6,6)\}$
4. $A = [1,2,3,4,5,6], R = \{(1,1), (2,2), (3,2), (2,3), (3,3), (4,4), (5,5), (6,6)\}$
5. $A = [1,2,3,4,5,6], R = \{(1,1), (2,2)\}$