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**American University of Sharjah**

**College of Engineering**

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**CMP 333: Artificial Intelligence**

**Spring 2022**

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**Submitted to**

**Dr. Michel Bernard Pasquier**

**Department of Computer Science and Engineering**

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**Project 2**

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**Date of Submission: 17th April 2022**

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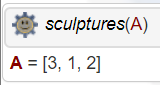
**Name & ID:**

|  |  |
| --- | --- |
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Q1) Structures Puzzle

Program in file “./Program Files/sculpturespuzzle.pl”

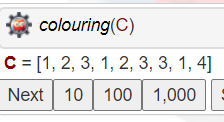
All Results:



Q2) Map Coloring

Program in file “./Program Files/mapcoloring.pl”

All Results:



Q3) Cryptarithmetic puzzle with carries

Program in file “./Program Files/Cryptarithmetic with Carry.pl”

All Results:

**As** = [9, 5, 6, 7],  
**Bs** = [1, 0, 8, 5],  
**Cs** = [1, 0, 6, 5, 2]

The above solution is unique for the given problem.

Q4) Magic triangle

Program in file “./Program Files/magicTriangle.pl”

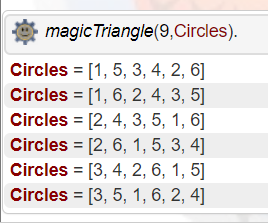
Given the format: [A,B,C,D,E,F], where:

Timeline

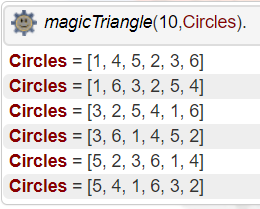
Description automatically generated

All Results:

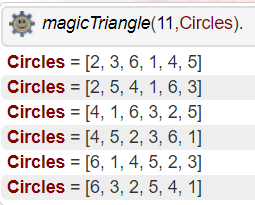
?- magicTriangle(9,Circles).



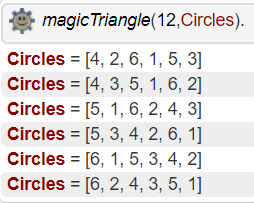
?- magicTriangle(10,Circles).



?- magicTriangle(11,Circles),



?- magicTriangle(12,Circles).



Q5) Interview scheduling

Program in file “./Program Files/Interview Scheduling.pl”

All Results:

People=[A,B,C,D,E]

**People** = [2, 4, 3, 1, 5]

**People** = [2, 4, 5, 1, 3]

**People** = [3, 2, 5, 1, 4]

**People** = [3, 4, 1, 2, 5]

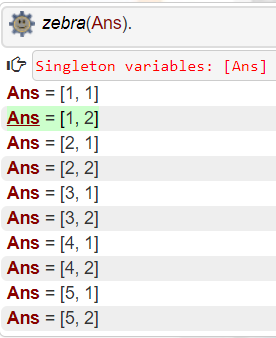
Results with additional Constraint Don must follow right after Cam:

**People** = [3, 4, 1, 2, 5]

Q6) Zebra story

Program in file “./Program Files/Zebra.pl”

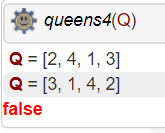
**zebra(Ans).**



Q7) 4-queens problem

Program in file “./Program Files/4Queens.pl”

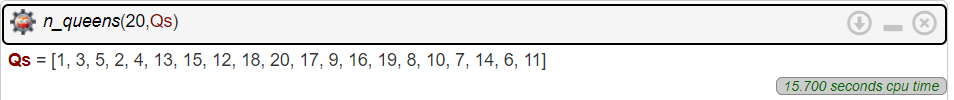
All Results:



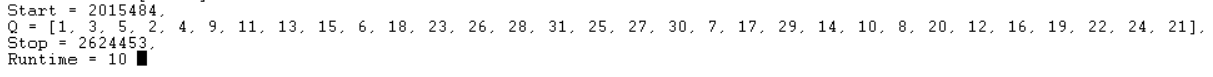
Q8) N-queens problem

Program in file “./Program Files/NQueens.pl”

Result for n=20:



Largest Result in under 10 mins:



The largest result obtained in 10 mins, is for n=31.