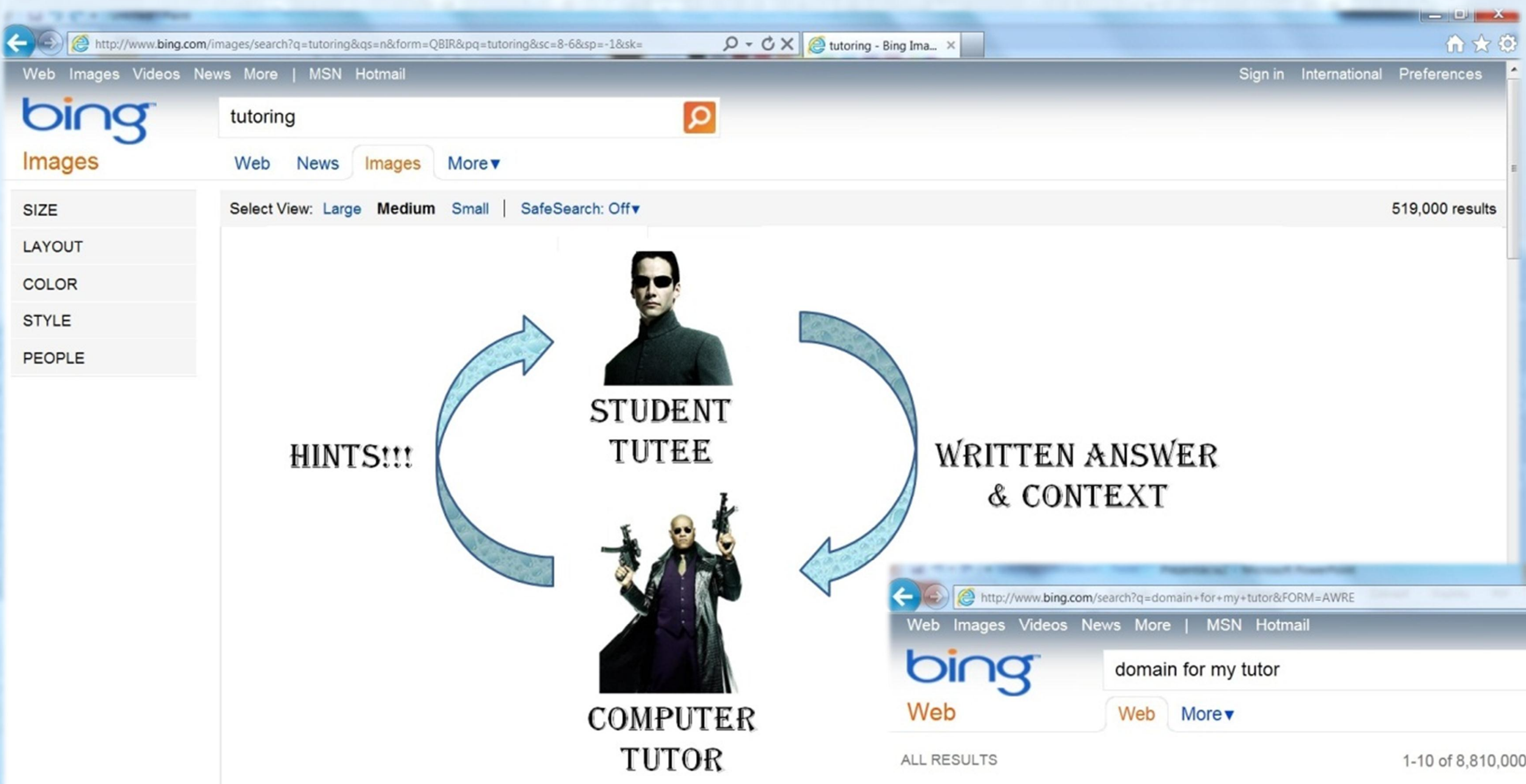
MODELING A TUTOR FOR E-LEARNING SUPPORT

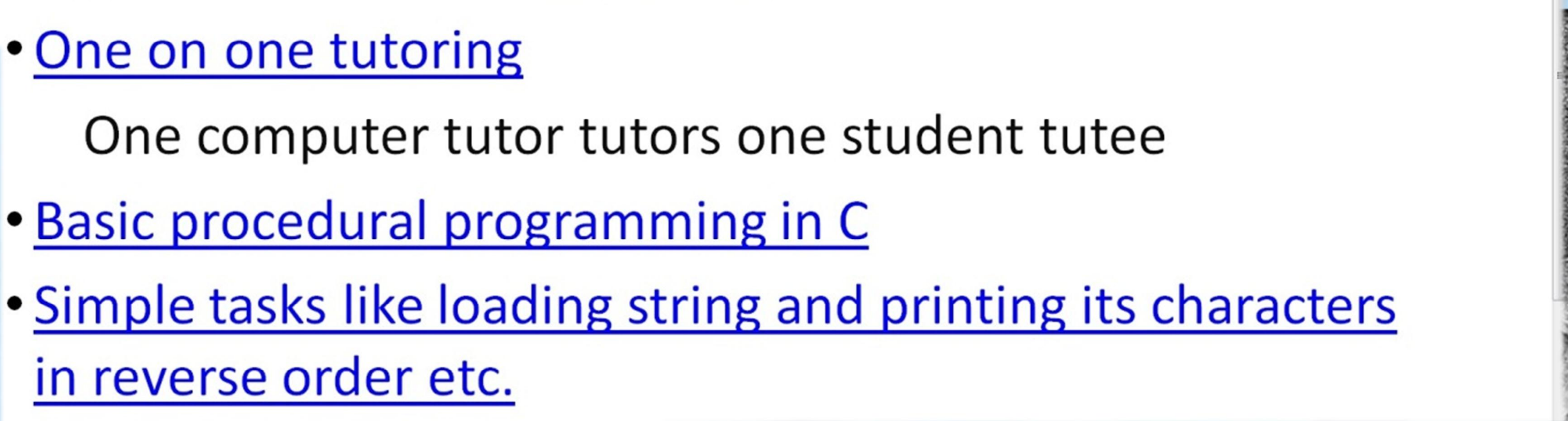


HINTS!!!

STUDENT TUTEE

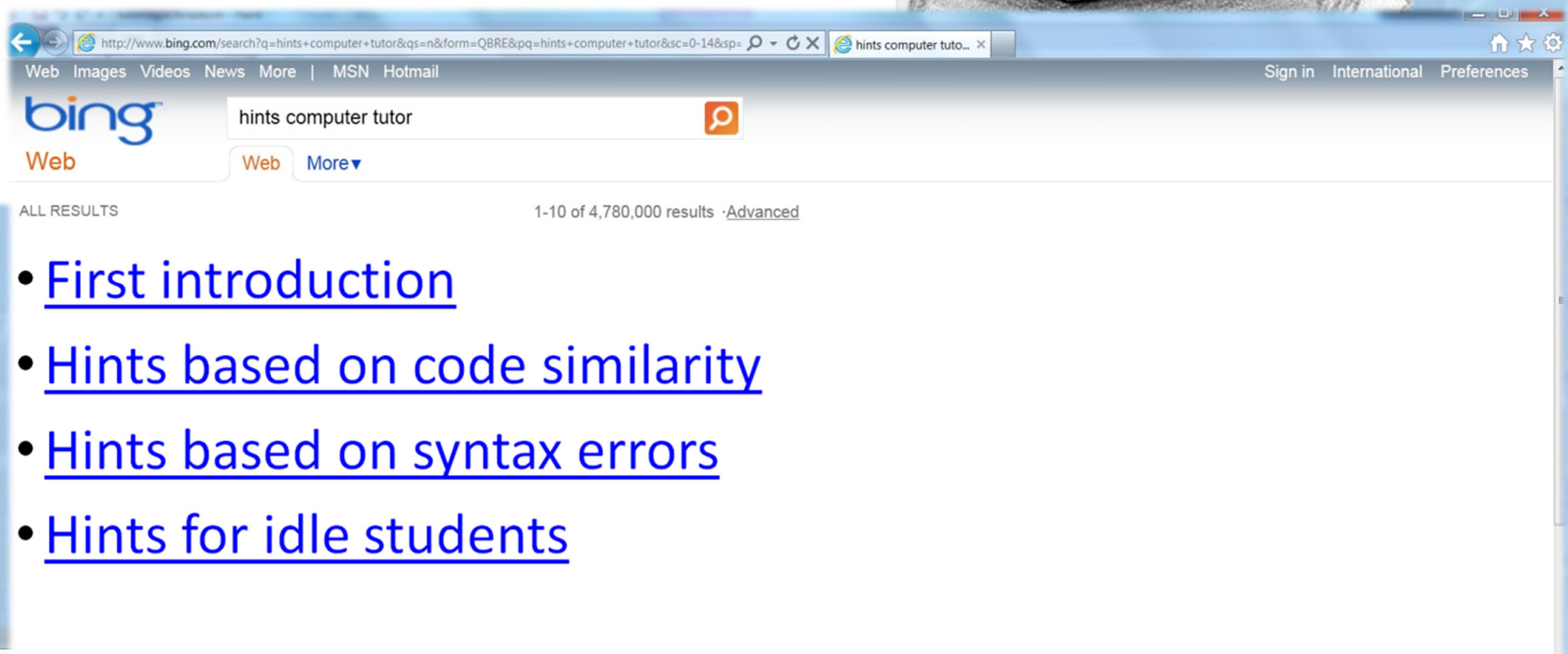
WRITTEN ANSWER & CONTEXT

COMPUTER TUTOR

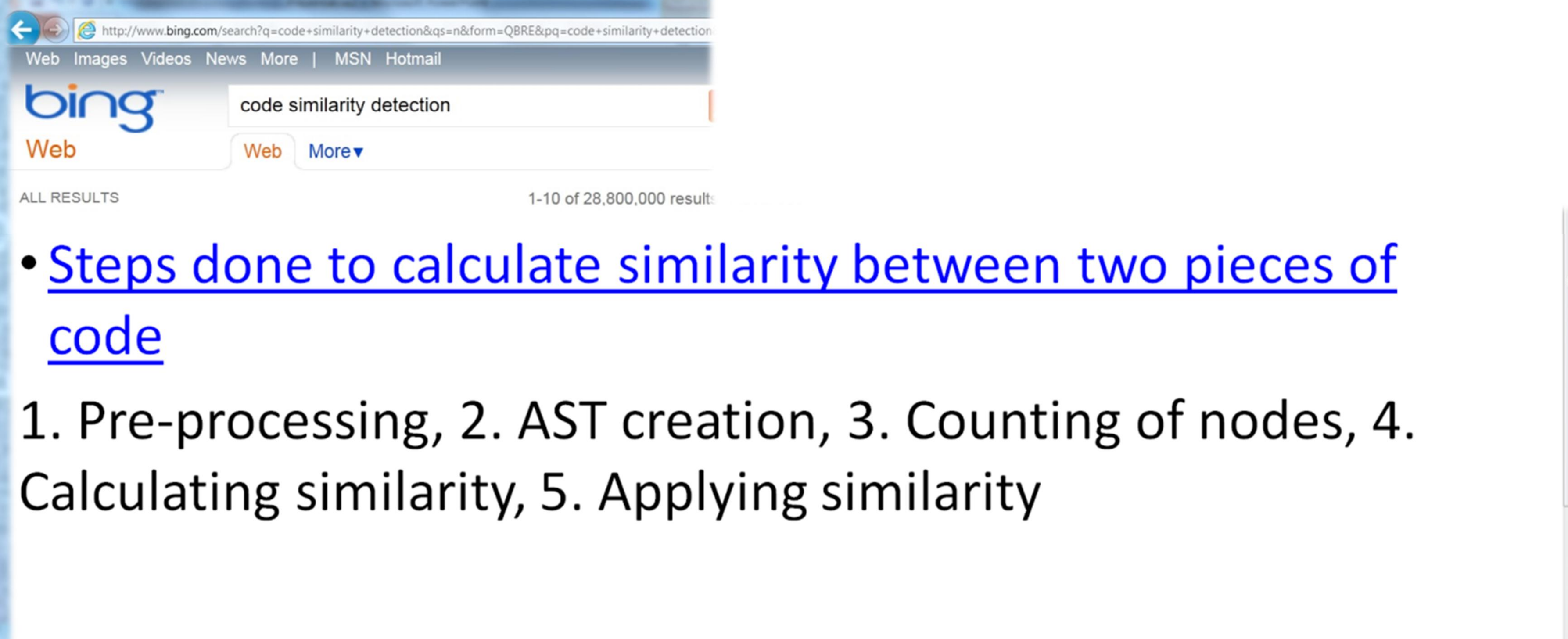


- One on one tutoring

  One computer tutor tutors one student tutee
- Basic procedural programming in C
- Simple tasks like loading string and printing its characters in reverse order etc.

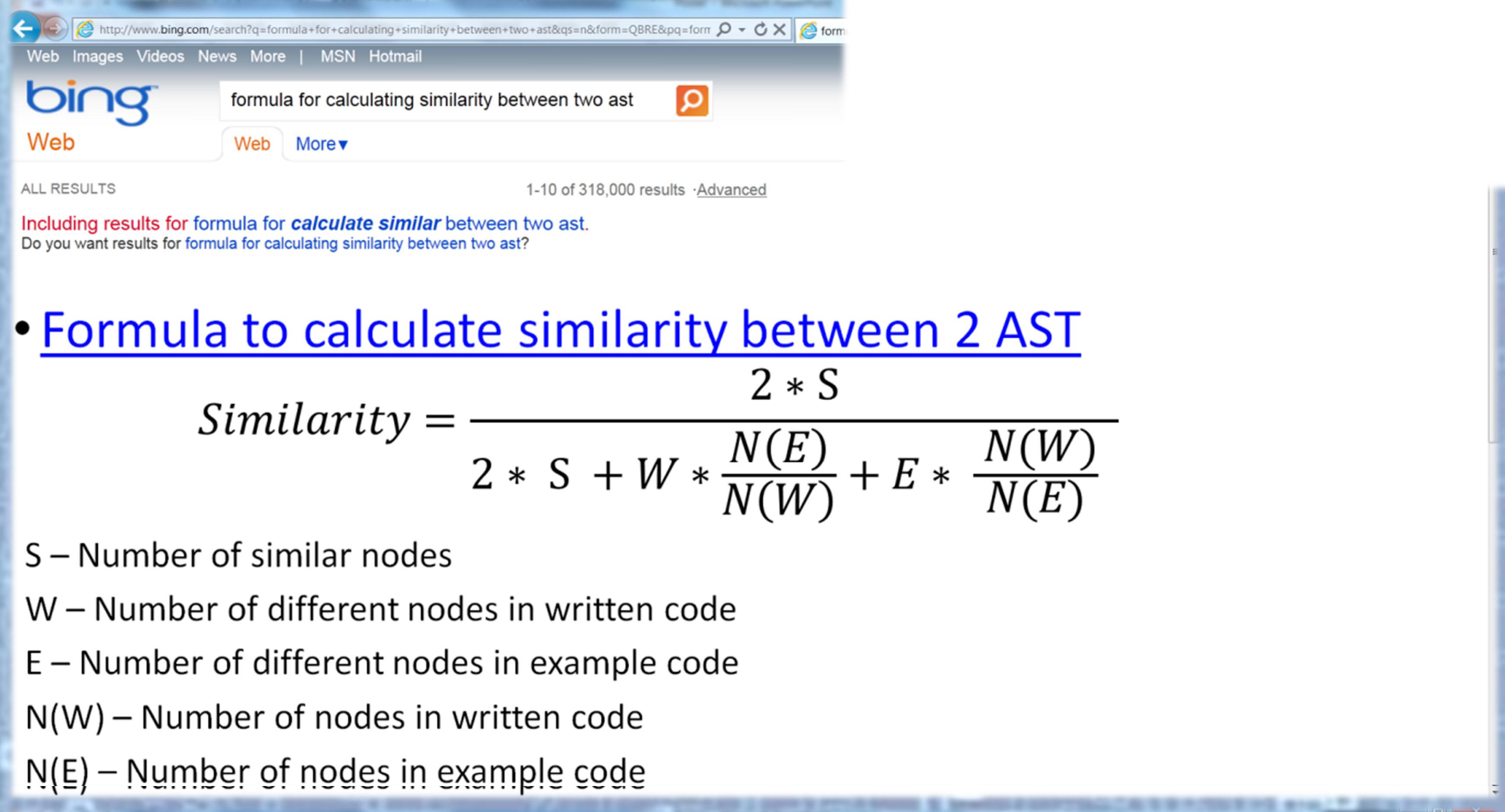


- First introduction
- Hints based on code similarity
- Hints based on syntax errors
- Hints for idle students



- Steps done to calculate similarity between two pieces of code

1. Pre-processing, 2. AST creation, 3. Counting of nodes, 4. Calculating similarity, 5. Applying similarity



formula for calculating similarity between two ast
1-10 of 318,000 results
Including results for formula for calculate similar between two ast.
Do you want results for formula for calculating similarity between two ast?

- Formula to calculate similarity between 2 AST

$$Similarity = \frac{2 * S}{2 * S + W * \frac{N(E)}{N(W)} + E * \frac{N(W)}{N(E)}}$$

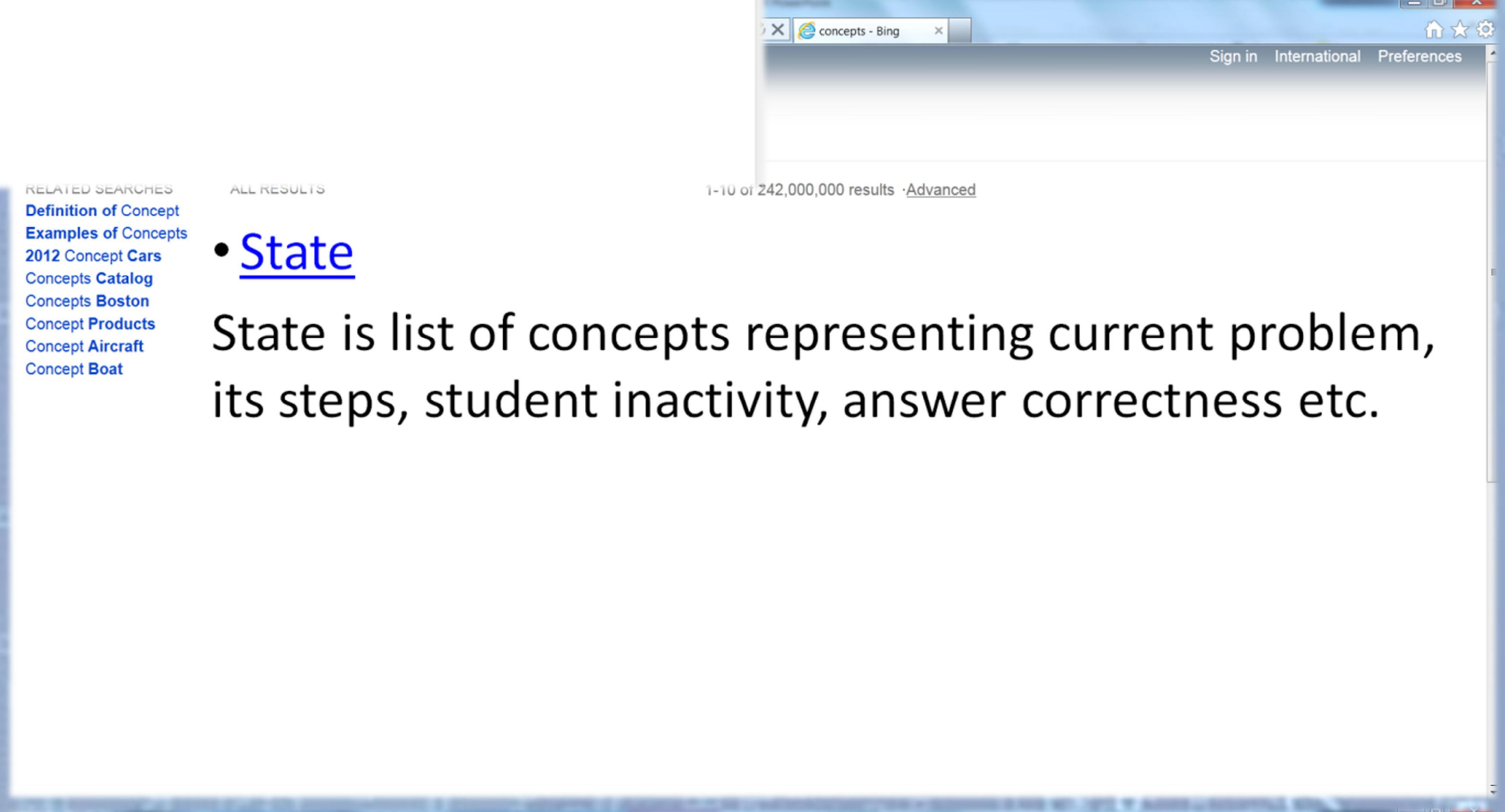
S – Number of similar nodes

W – Number of different nodes in written code

E – Number of different nodes in example code

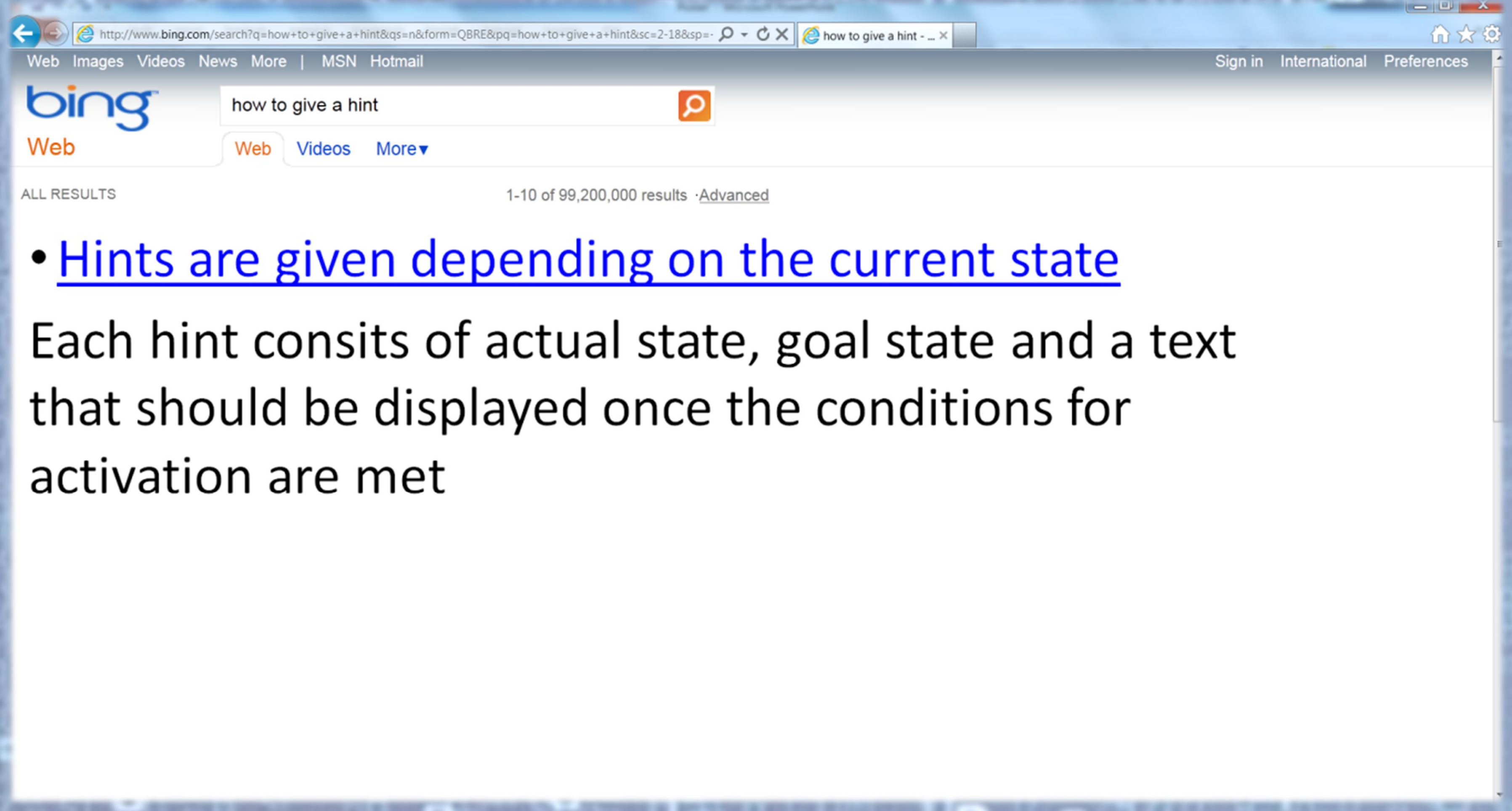
N(W) – Number of nodes in written code

N(E) – Number of nodes in example code



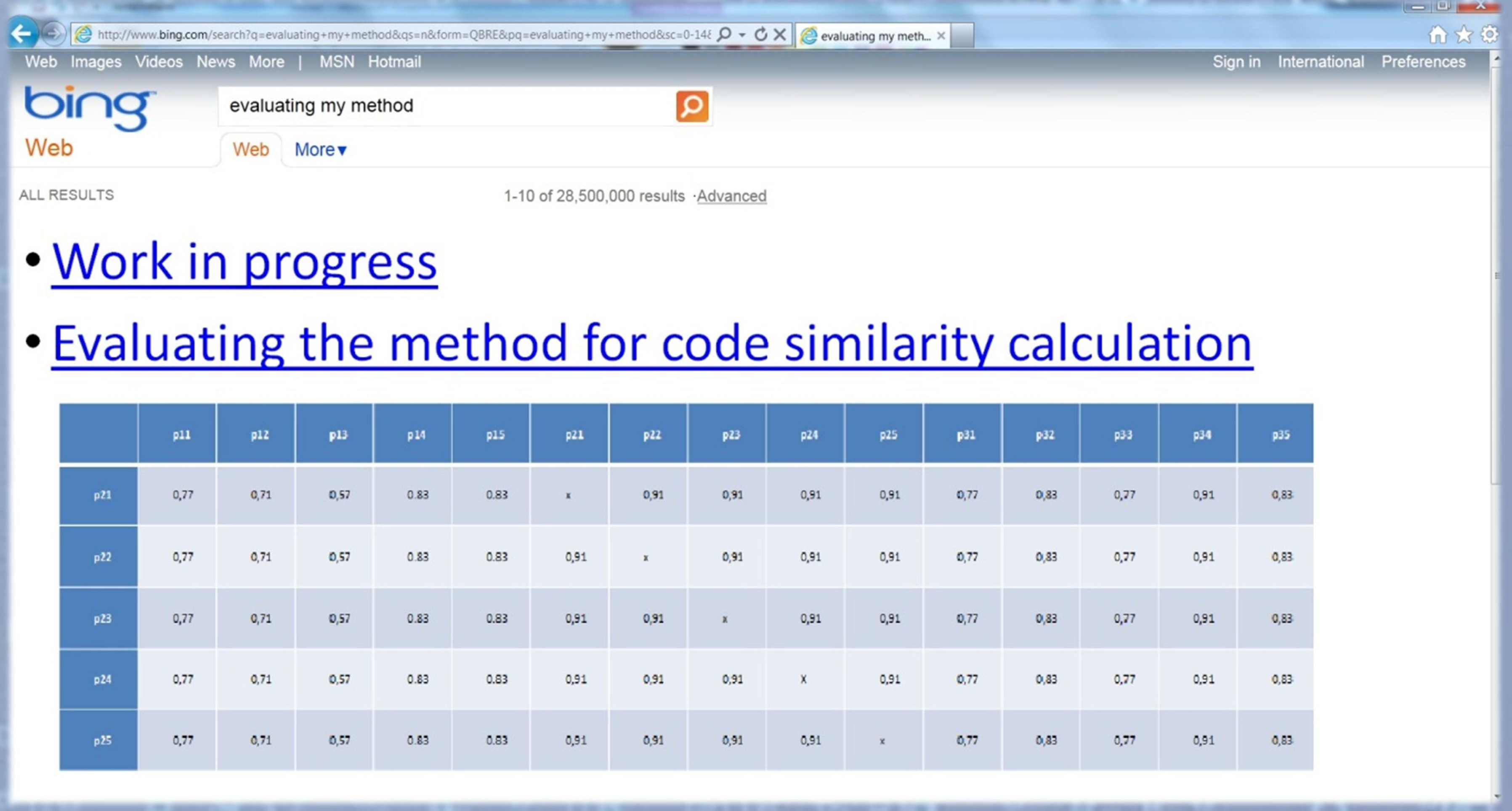
- State

State is list of concepts representing current problem, its steps, student inactivity, answer correctness etc.



- Hints are given depending on the current state

Each hint consits of actual state, goal state and a text that should be displayed once the conditions for activation are met



- Work in progress
- Evaluating the method for code similarity calculation

	p11	p12	p13	p14	p15	p21	p22	p23	p24	p25	p31	p32	p33	p34	p35
p21	0,77	0,71	0,57	0.83	0.83	x	0,91	0,91	0,91	0,91	0,77	0,83	0,27	0,91	0,83
p22	0,77	0,71	0,57	0.83	0.83	0,91	x	0,91	0,91	0,91	0,77	0,83	0,27	0,91	0,83
p23	0,77	0,71	0,57	0.83	0.83	0,91	0,91	x	0,91	0,91	0,77	0,83	0,27	0,91	0,83
p24	0,77	0,71	0,57	0.83	0.83	0,91	0,91	0,91	X	0,91	0,77	0,83	0,27	0,91	0,83
p25	0,77	0,71	0,57	0.83	0.83	0,91	0,91	0,91	0,91	x	0,77	0,83	0,77	0,91	0,83

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