Busting Plagiarism: Tool/s

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Mindmap of Plagiarism[Car10] – Computer Science Department

- **Plagarism**
  - **Definition**
    - Subjective
    - Higher Degree of Code Similarity
      - With respect to occular and/or moss
        - 5%? 10%?
      - No citation, Permission, Attribution
    - Moss Is A Tool Only
      - Teacher Decides
      - But Moss Used as Proof
        - Gives a stronger case
        - Better than "tingin ko nangopya kayo"
        - Suspision enough to start case
    - Teacher Defined
      - Must be in syllabus
  - **Current Strategy**
    - Goal
      - **Student must work independently**
    - Prefilter using Moss
    - Look deeper to code flagged by Moss
    - Generate Similarity Graph
    - Extract Code Features
    - Identify which individuals have w/c features
  - **Strategy**
    - Citation
    - MPs only for completion/not graded
    - Hands on exam
      - Best way to test capability
    - Oral defence
      - Prob, students can prepare for this
    - Include Plagarism definition in Syllabus
    - Moss as deterrent
      - Tell students about moss
      - Give warnings for caught students
  - **Problems**
    - GUI
      - A lot of code, lower similarity
    - Too few possible solutions
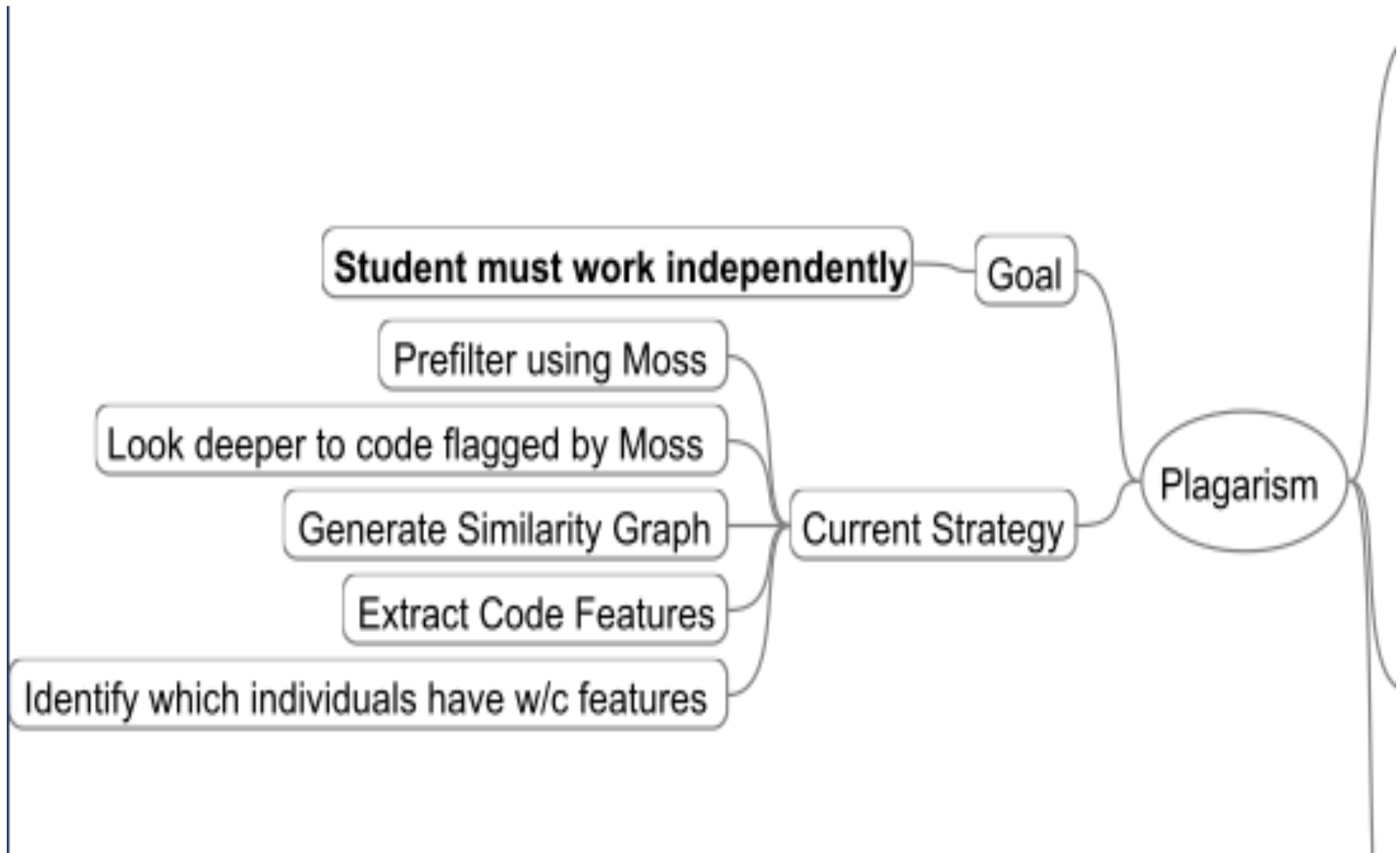   - "Turo ng teacher/book"

Measure of Software Similarity (MOSS)
[M10]

- detects software plagiarism in many programming languages (C flavors, Java, etc ...)
- an Internet service
- based on the paper by Schleimer, Wilkerson, Aiken[SWA03]
- http://theory.stanford.edu/~aiken/moss/
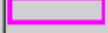
Current Strategy[Car10]

Running MOSS

Moss Results
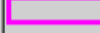
Options -l c -m 100000

[How to Read the Results | Tips | FAQ | Contact | Submission Scripts | Credits]

File 1	File 2	Lines Matched
codes-suspected/ (97%)	codes-suspected/ (97%)	177
codes-suspected/ (95%)	codes-suspected/ (93%)	166
codes-suspected/ (94%)	codes-suspected/ (92%)	159
codes-suspected/ (80%)	codes-suspected/ (78%)	127
codes-suspected/ (79%)	codes-suspected/ (80%)	127
codes-suspected/ (77%)	codes-suspected/ (75%)	115
codes-suspected/ (98%)	codes-suspected/ (98%)	199
codes-suspected/ (51%)	codes-suspected/ (57%)	216

Side-by-side comparison

|			
(43%)	� red	(43%)	▮
244-268	▭ red	422-470	▭ red
322-335	▭ green	517-535	▭ green
338-360	▭ blue	539-585	▭ blue
430-447	▭ cyan	714-730	▭ cyan
306-316	▭ magenta	491-510	▭ magenta
262-278	590-610		

```java
if(!dishBeingCooked.currentAction.equalsIgnoreCase("cook")){
        chefIsCooking = false;
        assistantsVector.add(dishBeingCooked);
        dishBeingCooked = null;
}else{
        if(readyQueueDishes.size()!=0){
                readyQueueDishes.add(dishBeingCooked);
                dishBeingCooked = readyQueueDishes.remove(0);
                chefIsCooking = true;
        }
}
}else{
        chefIsCooking = false;
        isDishDone = true;
        doneDish = dishBeingCooked;
        dishBeingCooked = null;
}
```

```
rue;
Output(TIME);
```

```java
if(!dishBeingCooked.currentAction.equals("cook")){
    isCookBusy=false;
    assistantsVector.add(dishBeingCooked);
    dishBeingCooked=null;

}
else{
    if(readyQueueDishes.size()!=0){

        readyQueueDishes.add(dishBeingCooked);
        dishBeingCooked = readyQueueDishes.remove(0);
        isCookBusy=true;

    }
}

}
else{
    isCookBusy=false;
    isDone=true;
    dish_temp = dishBeingCooked; // See this
    dishBeingCooked=null;

}
}
```

Similarity Graph with TAGS
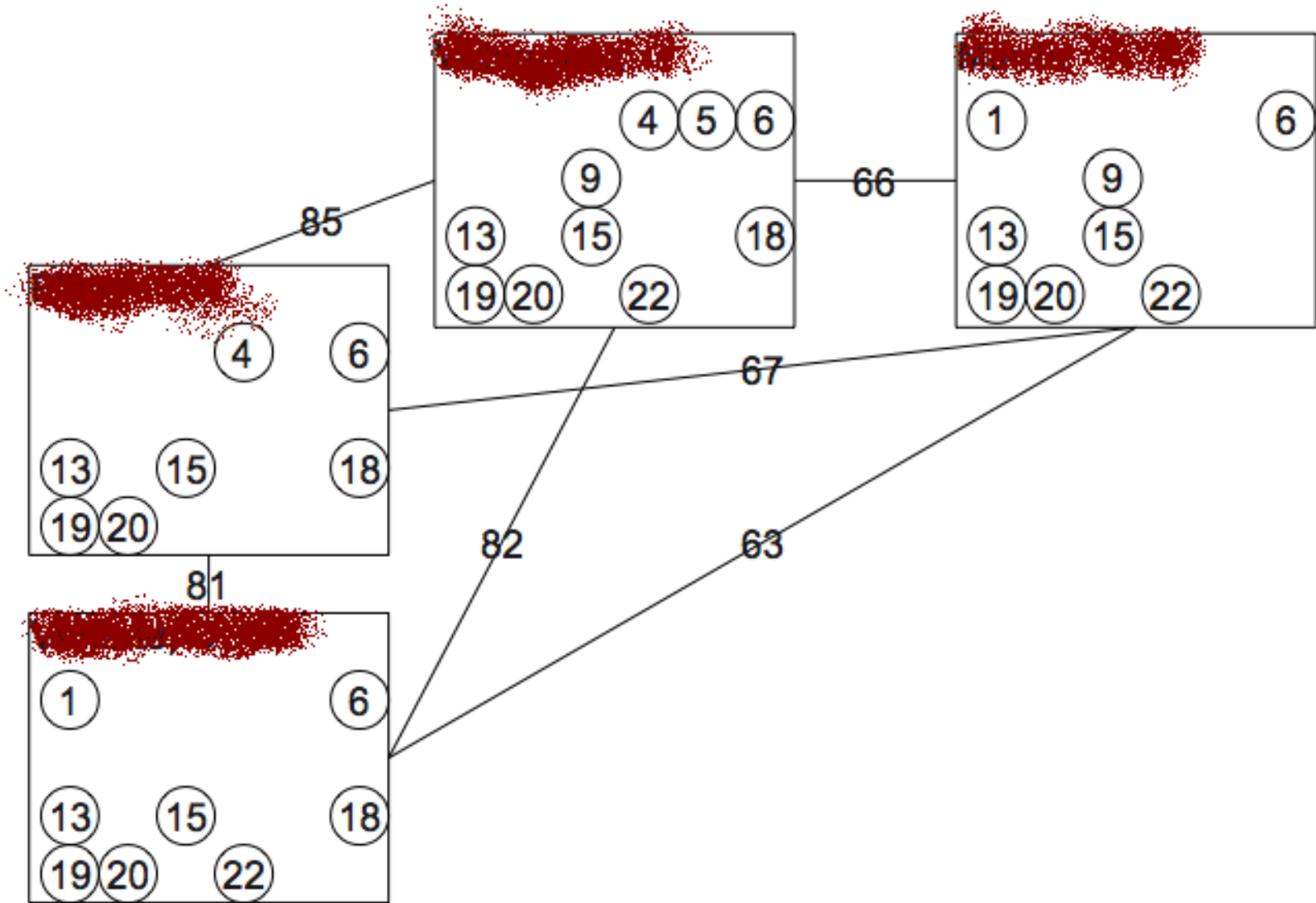
Code Features (TAGS)

Tag Number	Description
1	Program uses an iterative exponent function
2	Program uses a recursive exponent function
3	Program uses built-in exponent function from math.h library
4	Program has an incorrect exponent function
5	Program has comments
6	Program has descriptive variable names
7	Program declares functions (function prototypes) before defi...
8	Program uses constants
9	Program checks file open (fopen) function for failure
10	Program is decomposed into functions (i.e. has functions othe... function)
11	Program uses while loops in main function
12	Program uses do-while loops in main function

Similarity Graph with TAGS
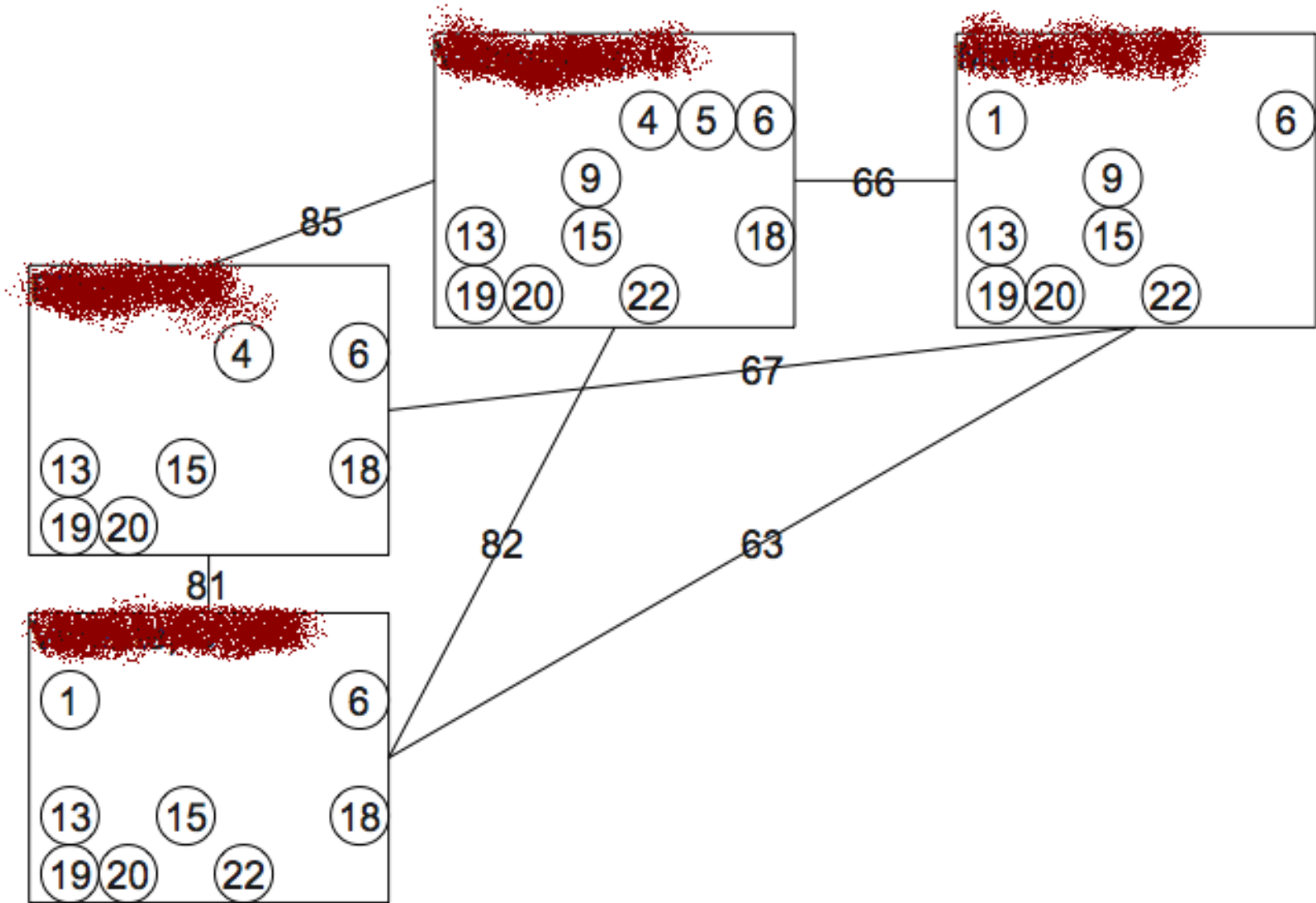
Program Flow and Nesting

```
if fp == NULL                       if fp1 == NULL
if fp != NULL                       if fp1 != NULL
  if "aaa" and "zzz"                  if "aaa"
if "aaa"
 do while "zzz"                        do while "zzz"
  do while "x"                          do while "x"
    if "zzz"                              if "zzz"
    else if "U"                           if "U"
    else if "P"                           if "P"
   if "zzz"                             if "zzz"
   for counter1>=0                     for y>=0
    if "neg"                             if "neg"
     for counter2<=eCounter               for z<=a
   if "abs"                             if "abs"
     if atoi<0                            if atoi>=0
     if atoi>=0                           if atoi<0
     for counter2<=eCounter               for z<=a
   for counter1>=0                      for y>=0
     if "^"                               if "^"
     for counter2<=eCounter-1             for z<a-1
   if "%"                               if "%"
     for counter2<=eCounter-1             for z<a-1
   # no useless loop                   for y<=a      # useless loop
   for counter1<eCounter               for y<a
```

"Researching" in the Internet

123helpme.com© [123]

Searching Obama Speeches (result [123])

Obama's Inaugural Speech - March 23, 2009 I think opinion comforting to a rehabilitating nation in dire need starts on a "down note", but on the other hand; He was

Barack Obama is A President In The Making - A Pre Senator from Illinois and a candidate for the Democrati mother, he spent most of his childhood in Honolulu, Ha

Barack Obama as an Agent of Change - I believe the in a war that has been severely mismanaged. I believe currently the most viable agent of change. It seems as

Searching Obama Speeches (result [123])

Obama's Inaugural Speech - March 23, 2009 I think t

opinion co
starts on

624 words (1.8 pages)	**Better Essays**	[preview]

Barack O
Senator f
mother, h

| 798 words (2.3 pages) | **Strong Essays** | [preview] |

Barack O
in a war th

| 1740 words (5 pages) | **Better Essays** | [preview] |

severely mismanaged. I believe
currently the most viable agent of change. It seems as

Selecting (result[123])

First 1100 characters of *Obama's Inaugural Speech*:

No Works Cited

Length: 798 words (2.3 double-spaced pages)

Rating: Purple

- -

March 23, 2009

I think that Barack Obama's Inaugural speech was extremely inspiring, motivating, and most of all in my opinion comforting to a rehabilitating nation in dire need. In the introductions and openings of the majority of Barack Obama's speech in my opinion he starts on a "down note", but on the other hand; He was generally had an optimistic and friendly tone throughout his inaugural address you can say personally from a American citizen's perspective it is safe to say that it was even "touching". I think that consistently through Barack Obama's inaugural speech he concentrated on the current economic crisis, the war, and the problems at hand concerning the peoples of America and also the world in general,

Selecting (result[123])

It is going to cost you (result[123])

First 1100 characters of *Obama's Inaugural Speech*:

No Wor

Length:

Rating:

- - - - - -

March 2

I think that Barack Obama's Inaugural speech was extremely inspiring, motivating, and most of all in my opinion comforting to a rehabilitating nation in dire need. In the introductions and openings of the majority of Barack Obama's speech in my opinion he starts on a "down note", but on the other hand; He was generally had an optimistic and friendly tone throughout his inaugural address you can say personally from a American citizen's perspective it is safe to say that it was even "touching". I think that consistently through Barack Obama's inaugural speech he concentrated on the current economic crisis, the war, and the problems at hand concerning the peoples of America and also the world in general,

Issues : Reselling of work [MBM]

News » Education • College Blog • Best Value Colleges • Student Engagement

Case of the purloined term paper; when work is resold

Updated 11/22/2009 2:17 PM | Comments ☒ 54 | Recommend ⬆ 8   E-mail | Save | Print | Reprints & F

By **Mary Beth Marklein, USA TODAY**

Melinda Rieboldt's kids were Googling her name for fun when they found it: A college paper she had helped write as part of a group project while pursuing an MBA. It was available on at least five websites that sell research papers to students.

Rieboldt, who graduated last year from the University of Phoenix in Pleasanton, Calif., doesn't know how the websites got the paper, on the topic of global communications. Nor, she says, do her five co-authors.

TERM-PAPER MILLS: Courts and compensation

"None of us did it," she says. But they're not pleased. The course was a lot of work, she says. Now, someone else is "making a profit."

Rieboldt isn't the first person to wonder if there isn't something illegal about that. But with few exceptions, and for a variety of practical and legal reasons, term-paper mills have mostly managed to stay out of legal trouble, says Stetson University School of Law Dean Darby Dickerson. She notes in a _Villanova_ Law Review article that cheating and plagiarism "are as common on college campuses as dirty laundry and beer."

⊕ Enlarge   Illustration by Alejandro Gonzalez,
                     USA TODAY

Essay Mills[TB]

THE CHRONICLE
of Higher Education

Tuesday, September 21, 2010

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Students

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Search The Chronicle

March 20, 2009

Cheating Goes Global as Essay Mills Multiply

Pius Utomi Ekpei for The Chronicle

Paul Arhewe lives in Nigeria and has been writing for essay mills since 2005. He says the companies give customers "another way of learning."

By Thomas Bartlett

The orders keep piling up. A philosophy student needs a paper on Martin Heidegger. A nursing student needs a paper on dying with dignity. An engineering student needs a paper on electric cars.

Screen after screen, assignment after assignment—hundreds at a time, thousands each semester.

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the future of

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Most Popular

Most Viewed

1. A Measure of Le
2. Education Pays
3. Pick Your Battle
4. In Push for Dive Socioeconomic Cla
5. Academic Libra

Past Coverage

Reselling of work

- R2C2 Inc., 9 sites which are paper mills [TB]
- ProfEssays.com (as reported in [MBM])
  - charges $13.28 to $31.57 per page/due date
  - has professional staff writers
  - check against existing tools

Probable? (from text of submission)

"I think that Barack Obama's Inaugural speech was extremely inspiring, motivating, and most of all in my opinion comforting to a rehabilitating nation in dire need. In the introductions and openings of the majority of Barack Obama's speech in my opinion he starts on a "down note", but on the other hand; He was generally had an ... "

Reverse Search (result from google)

Barack Obama Inagural Address Summary W/ Inserts Blcok Quotes ...
11 Apr 2009 ... **I think that Barack Obama's Inaugural speech was extremely inspiring, motivating, and most of all in my opinion comforting to a rehabilitating nation in dire need. In the introductions and openings of the majority of Barack Obama's ... in my opinion he starts on a "down note", but on the other hand; ...**
www.oppapers.com/essays/**Barack-Obama**...W/200660 - Cached - Similar

Barack Obama Inagural Address Summary W/ Inserts Blcok Quotes
all in my opinion comforting to a rehabilitating nation in dire need. In the introductions and openings of the majority of Barack Obama's speech in my opinion he starts on a "down note", but on the other hand; He was ... I think that consistently through Barack Obama's inaugural speech he concentrated on the ...
www.scribd.com/.../**Barack-Obama**-Inagural-Address-Summary-W-Inserts-Blcok-Quotes - Cached - Similar

Free speech Essays | page 8
Obama's **Inaugural Speech** - March 23, 2009 **I think that Barack Obama's Inaugural speech was extremely inspiring, motivating, and most of all in my opinion comforting to a rehabilitating nation in dire need. ... of the majority of Barack Obama's speech in my opinion he starts on a "down note", but on the other hand; ...**
www.123helpme.com/search.asp?text=**speech**&page=8 - Cached - Similar

Matching Results

Google

I think that Barack Obama's Inaugural speech was extremely inspiring, motiva   **Search**

4 results (1.09 seconds)   Advanced search

"He" (and any subsequent words) was ignored because we limit queries to 32 words.

Everything

▼ More

The web

Pages from Philippines

▼ More search tools

Barack Obama Inagural Address Summary W/ Inserts Blcok Quotes ...
11 Apr 2009 ... I think that Barack Obama's Inaugural speech was extremely inspiring,
motivating, and most of all in my opinion comforting to a rehabilitating nation in dire
need. In the introductions and openings of the majority of Barack Obama's ... In my
opinion he starts on a "down note", but on the other hand; ...
www.oppapers.com/essays/Barack-Obama...W/2 0660 - Cached - Similar

Barack Obama Inagural Address Summary W/ Inserts Blcok Quotes
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and openings of the majority of Barack Obama's speech in my opinion he starts on a
"down note", but on the other hand; He was ... I think that consistently through Barack
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my opinion he starts on a "down note", but on the other hand; ...
www.123helpme.com/search.asp?text=speech&page=8 - Cached - Similar

link to the original paper

Tools

- students, teachers, researchers
- web comparisons
- encyclopedias, electronic papers, journals, article databases
- images
- software
- videos

- Plagiarism tools see http://www.shambles.net/pages/staff/ptools/

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- choose research topics and can even specify the type (narrative, argumentative, etc ...)

- choose your writer

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ID	Degree	Specialization	# of orders completed over last year
0326	MSc (Master of Science)	Social sciences	106
0891	BA (Bachelor of Arts)	History, international relations	153
0913	MBA (Master of Business Administration)	Management, marketing	286
0980	MBA (Master of Business Administration)	International relations, politics, history and social sciences.	215
1066	MBA (Master of Business Administration)	Economy, finances, politics and history	206
1124	BA (Bachelor of Arts)	General knowledge	261
1215	Doctor of Philosophy	Philosophical and religious topics	196
1365	MA (Master of Arts)	Literature, book reports and movie reviews	318
1576	MA (Master of Arts)	Philology and problems of modern linguistics, historical, religious topics	235
1692	MBA (Master of Business Administration)	Different topics: from economy and finances to humanities	280
1866	BA (Bachelor of Arts)	Different topics of general knowledge	312
2182	BA (Bachelor of Arts)	Philology and humanities	191
2561	MSc (Master of Science)	Social sciences, psychology, sociology	237
2613	MBA (Master of Business Administration)	Economy and finances	323
2711	MBA (Master of Business Administration)	Management, marketing and business administration	310

Paper Rater©, [PR10]

WriteCheck^{TM}, [WC10], ©

WriteCheck[TM,WC10]

- not a free service
- detects similarities
- for students only as writing support
- powered by TURNITIN[TII]
  - publishers & researchers
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  - educational resources

Viper©,[V10]

Viper©,[V10]

So, what's great about Viper?

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Universities have ever tightening rules on plagiarism, and Viper is all about giving you a free service that guarantees your peace of mind.

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VIPER Vs TURNITIN
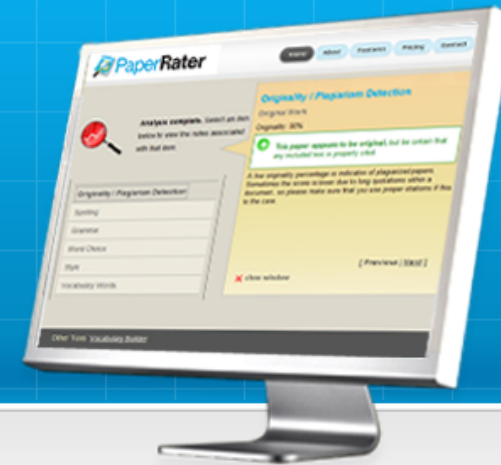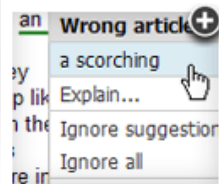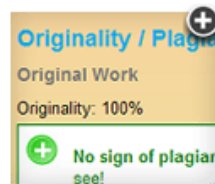
	Viper – The Anti-plagiarism Scanner	WriteCheck powered by Turnitin
Q: Over 10bn resources scanned?	✓	✓
Q: Unlimited document length?	✓	✗
Q: Unlimited resubmitting?	✓	✗
Q: Side by side comparison?	✓	✗
Q: Links to plagiarised work?	✓	✗
Q: Free?	✓	✗

New Strategy[Car10]

Plagarism

Strategy
- Citation
- MPs only for completion/not graded
- Hands on exam
  - Best way to test capability
- Oral defence
  - Prob, students can prepare for this
- Include Plagarism definition in Syllabus
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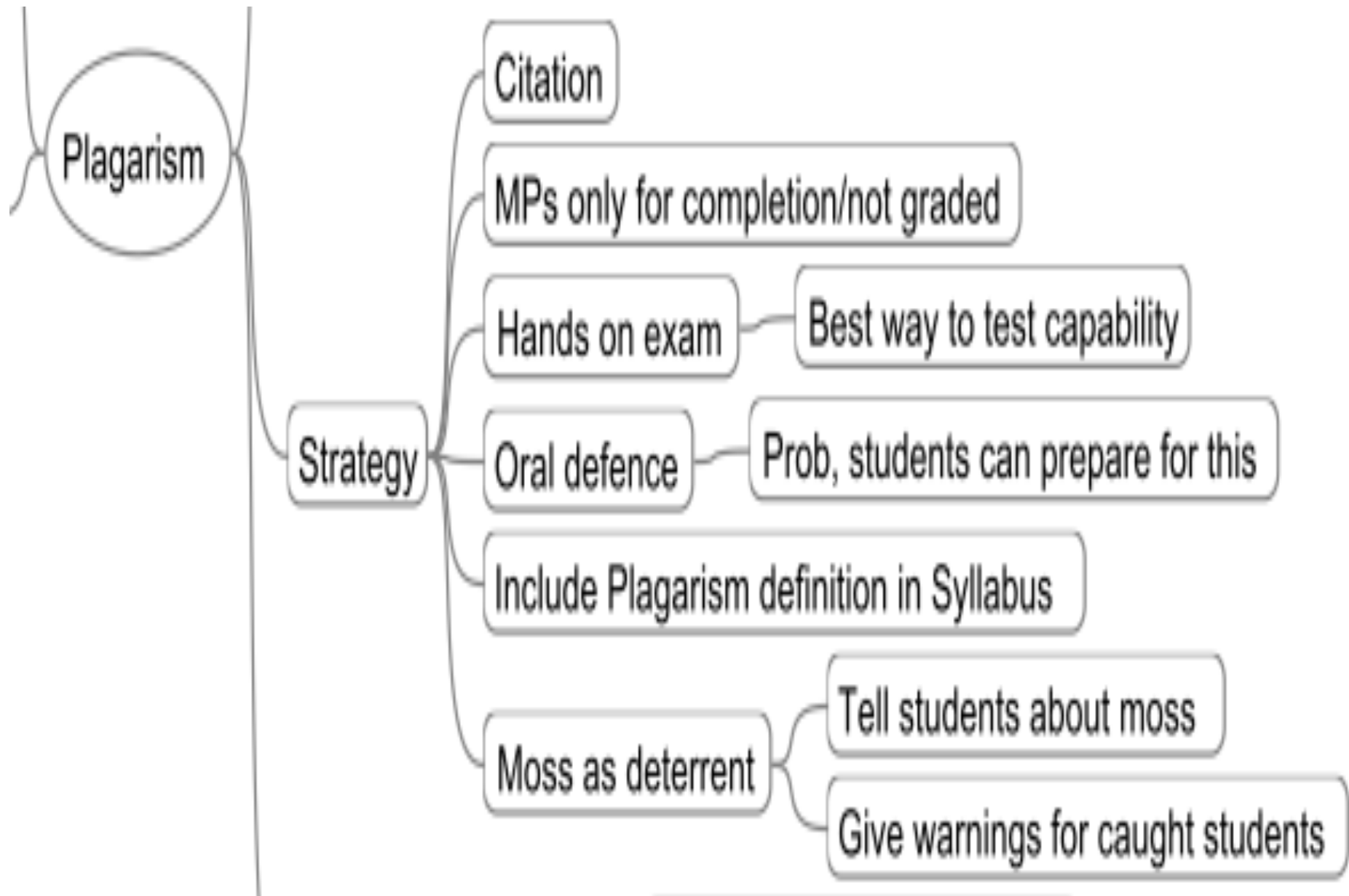
Next Steps?

- tools can only guide you after something has already happened
- tools can be useful before it actually happens
- intuition as a teacher, perhaps getting to know your students more
- students knowing what can be considered plagiarism, use some of the tools

Computer Science Disciplines

- natural language processing (NLP)
- artificial intelligence (AI)
- machine learning
- information retrieval (IR)
- computational linguistics
- data mining
- advanced pattern matching (APM)

Sources

[Car10] Carreon, Mario. Mindmap of Plagiaris: UPD DCS Internal Discussions. June 2010.

[M10] MOSS Software http://theory.stanford.edu/~aiken/moss/

[SWA03] Schleimer, Saul and Wilkerson, Daniel S. and Aiken, Alex. Winnowing: local algorithms for document fingerprinting. SIGMOD '03: Proceedings of the 2003 ACM SIGMOD international conference on Management of data, pp. 76-85, 2003.

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