MOOC is a course!

Tsinghua Univ
Yuchun Ma
MOOC
Massive
Open
Online
Course
Polya Counting Part II

The second part of Polya Theorem has been published as well as the homework, please take your time.

And please pay attention. The deadline for the homework of this session would be December 22.

Our final evaluation would begin around this Friday with more than 1 week duration. :-}
TALKING ABOUT COMBINATORIAL MATHEMATICS

您最近在Brute-force Enumeration OR Abstract Conversion。如果您已经完成此章节，请选择左侧的另一个章节。
A PROBLEM CAUSED BY THE WORLD CUP

how to do well in combinatorics. Essentially, the problem of how to count well.
Everyone knows the fundamental concept behind counting. We simply count one by one. In computing, there is a rather more elegant term for this: enumeration - to highlight its enumerative nature,
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Talking About Combinatorial Mathematics

What's Combinatorial Mathematics

The Most Ingenious Arrangement - Magic Square Quiz due by 2014/10/30 23:30 UTC

Suffering Parchment Roll Quiz due by 2014/10/30 23:30 UTC

Is Your Phone Password Safe Quiz due by 2014/10/30 23:30 UTC

Brute-force Enumeration OR Abstract Conversion Quiz due by 2014/10/30 23:30 UTC

Homework 1 HOMEWORK due by 2014/10/30 23:30 UTC

Demo Of Week 1

A PROBLEM CAUSED BY THE WORLD CUP

Video1 quiz Video2 Video3 Video4 Forum

Final Exam
Your course which is put online

Video1  quiz  Video2  Video3  Video4  Forum

Final Exam
Universities involved in Online education

2008
MOOCs originated from US and Canada universities
Universities involved in Online education

- 2008

- 2011
  Standford: Sebastian Thrun and Peter Norvig “AI”
  Around 160000 learners from 190 countries

Jan. 2012
Universities involved in Online education

2008

2011

Stanford Andrew Ng “Machine learning”

Jan. 2012

UDACITY
Universities involved in Online education

2008

2011

Jan. 2012

Stanford Andrew Ng “Machine learning”

April. 2012

Prof. Ng and Prof. Daphne Koller started Coursera

May 2012
Universities involved in Online education

- 2008
- 2011
- Jan. 2012
- April. 2012
- May 2012

**MIT and Harvard constructed edX**
Universities involved in Online education

- 2008
- 2011
- Jan. 2012
- April. 2012
- May 2012
- June 2013
- XuetangX by Tsinghua
MOOC is coming!

The traditional course is not suit for online course
Why they want to learn MOOC?

**xuetangX data**

Combinatorial Mathematics is an useful class, please choose the reason you learn it:

- personal interest in combinatorics
- to prepare for pre-postgraduate exams
- for the high school exams
- a required course in university
- to enter competitions in informatics
- as job interview preparation
- want to get a certificate of Tsinghua University
- curious about a MOOC taught by a female professor from Tsinghua
- else

77%
Nice to have vs Need to have

We all know

\[ R_{\mu\nu} - \frac{1}{2} g_{\mu\nu} R = \frac{8\pi G}{c^4} T_{\mu\nu} \]
Traditional Course vs MOOC

- Similar Background
- Different students
- Fixed time
- flexibility
Traditional Course vs MOOC

- Exam
- Chapter
- Need to learn
- Similar Background
- Fixed time

- Exam if they want
- WEEK
- No constraints just interests
- Different students
- flexibility
Traditional Course vs MOOC

How to teach a MOOC?
Make your course real
Make your course real
Make your course real
Attractive!
Attractive!
Attractive!
Attractive!
Ideal Learning

- Learn where and when as you want
- Project-driven learning
- Question-driven learning
- Face to face
- Virtual lab
- Flipped course
MOOC is the course for learners!