



上海大学

Shanghai University

THE TITLE OF YOUR THESIS OR
DISSERTATION SHOULD BE TYPED HERE

Student name

Department of Mathematics
Shanghai University

10 Feb 2018

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Overview

Overview

- The trivial Set Cover algorithm has running time of $\mathcal{O}(2^n)$.

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- bla, bla, bla...

1 Lists

2 Columns

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Lists - Itemize

- Point A
- Point B
 - part 1
 - part 2
- Point C
- Point D

Lists - Itemize with Pause

Lists - Itemize with Pause

- Point A

Lists - Itemize with Pause

- Point A
- Point B

Lists - Itemize with Pause

- Point A
- Point B
 - part 1

Lists - Itemize with Pause

- Point A
- Point B
 - part 1
 - part 2

Lists - Itemize with Pause

- Point A
- Point B
 - part 1
 - part 2
- Point C

Lists - Itemize with Pause

- Point A
- Point B
 - part 1
 - part 2
- Point C
- Point D

Lists - Enumerate

- ➊ Point A
- ➋ Point B
 - ➊ part 1
 - ➋ part 2
- ➌ Point C
- ➍ Point D

Lists - Enumerate (Roman Numerals)

- ❶ Point A
- ❷ Point B
 - ❶ part 1
 - ❷ part 2
- ❸ Point C
- ❹ Point D

- 1 Lists
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Columns

Lorem ipsum dolor sit amet,
consectetur adipisicing elit, sed
do eiusmod tempor incididunt
ut labore et dolore magna
aliqua.

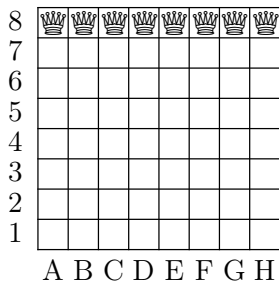
Lorem ipsum dolor sit amet,
consectetur adipisicing elit, sed
do eiusmod tempor incididunt
ut labore et dolore magna
aliqua.

- 1 Lists
- 2 Columns
- 3 **Figures**
- 4 Description
- 5 Tables

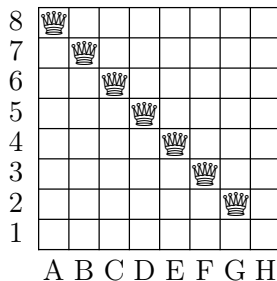
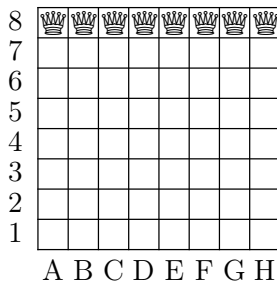
- 6 Blocks
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Domination on a Chessboard

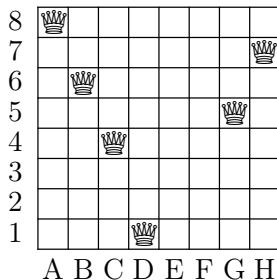
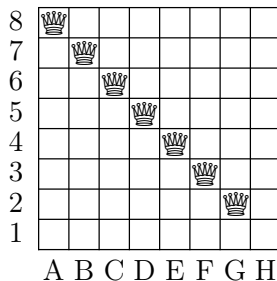
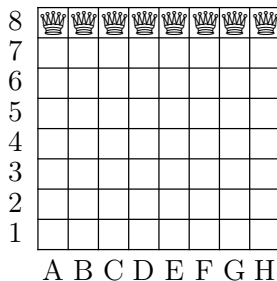
Domination on a Chessboard



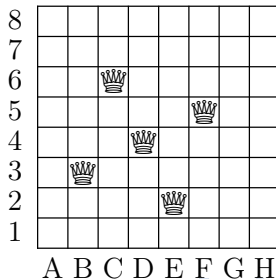
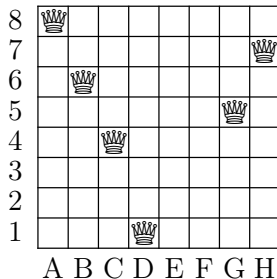
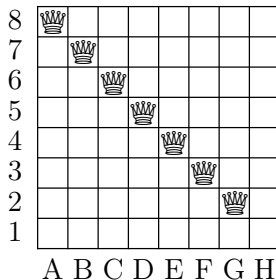
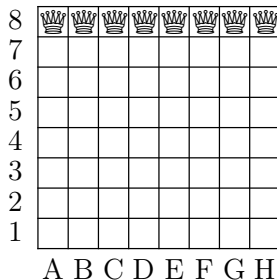
Domination on a Chessboard



Domination on a Chessboard



Domination on a Chessboard



Single figure with caption

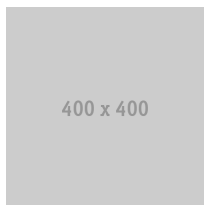


图: This is an caption!

- 1 Lists
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Description Environment

API Application Programming Interface

LAN Local Area Network

ASCII American Standard Code for Information
Interchange

- 1 Lists
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- 3 Figures
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Tables

Competitor Name	Swim	Cycle	Run	Total
John T	13:04	24:15	18:34	55:53
Norman P	8:00	22:45	23:02	53:47
Alex K	14:00	28:00	n/a	n/a
Sarah H	9:22	21:10	24:03	54:35

表: Triathlon results

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Blocks

Block Title

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Alert Block Title

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

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Definition

Then there's the definition environment which produces a standard ColorA color block but with the title already specified as 'definition'.

```
\begin{definition}
```

A prime number is a number that...

```
\end{definition}
```

定义

A prime number is a number that...

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Example

Next there's the example environment which produces a green block with the title 'Example'.

```
\begin{example}
Lorem ipsum dolor sit amet...
\end{example}
```

例

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

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Theorem

There is also a group of blocks that are especially useful for presenting mathematics. For example the ‘theorem’ environment, the ‘corollary’ environment and the ‘proof’ environment.

```
\begin{theorem}[Pythagoras]
```

$$a^2 + b^2 = c^2$$

```
\end{theorem}
```

```
\begin{corollary}
```

$$x + y = y + x$$

```
\end{corollary}
```

```
\begin{proof}
```

$$\omega + \phi = \epsilon$$

```
\end{proof}
```

Theorem Blocks

定理 (Pythagoras)

$$a^2 + b^2 = c^2$$

推论

$$x + y = y + x$$

证明.

$$\omega + \phi = \epsilon$$



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Hyperlink

Before we can create any hyperlinks we need to tag the frames we want to link to using the ommand.

click here [section 1 page](#) [▶ columns page](#) [▶▶ pictures page](#) [◀ pictures page](#)

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A trivial Set Cover algorithm

Algorithm 1: $\text{MSC}(\mathcal{S}, \mathcal{U})$

Input : A set cover instance $(\mathcal{S}, \mathcal{U})$ and a variable \mathcal{S}_{dom} .




Output : A minimum set cover of $(\mathcal{S}, \mathcal{U})$.

```

1 if  $\mathcal{S} = \emptyset$  then
2   return  $\emptyset$ ;
3 Let  $S \in \mathcal{S}$  be a set of maximum cardinality;
4  $\mathcal{C}_1 = \{S\} \cup \text{MSC}(\{S' \setminus S \mid S' \in \mathcal{S} \setminus \{S\}\}, \mathcal{U} \setminus S)$ ;
5  $\mathcal{C}_2 = \text{MSC}(\mathcal{S} \setminus \{S\}, \mathcal{U})$ ;
6  $\mathcal{S}_{\text{dom}} \leftarrow \emptyset$ ;
7 if  $\mathcal{U} \subseteq \mathcal{C}_1$  then
8    $\mathcal{S}_{\text{dom}} \leftarrow \mathcal{C}_1$ ;
9   if  $\mathcal{U} \subseteq \mathcal{C}_2$  then
10     if  $|\mathcal{C}_2| < |\mathcal{C}_1|$  then
11        $\mathcal{S}_{\text{dom}} \leftarrow \mathcal{C}_2$ ;
12 return  $\mathcal{S}_{\text{dom}}$ ;

```

References

-  FOMIN FV, GRANDONI F & KRATSCH D, 2009, *A note on the complexity of minimum dominating set*, Journal of Discrete Algorithms, **4(2)**, pp. 209–214.
-  GROBLER PJP & MYNHARDT CM, 2009, *Secure domination critical graphs*, Discrete Mathematics, **309**, pp. 5820–5827.
-  VAN ROOIJ JMM & BODLAENDER HL, 2011, *Exact algorithms for dominating set*, Discrete Applied Mathematics, **159**, pp. 2147–2164.