Methodology,Ethics and Practice of Data Privacy Course Exercise #1

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1 Question 1

Try to explain why recursive (c, l)-diversity guards against all adversaries who possess at most $l2$ statements of the form "Bob does not have heart disease".

1.1 Optional Modes

This template provides optional modes: good for eye mode (geye) and hazy mode, while the paper color is green for the former and light blue for the latter. you can use the following code to activate the desired mode:

```
\documentclass[geye]{elegantnote} % or
\documentclass[mode=geye]{elegantnote}
\documentclass[hazy]{elegantnote} % or
\documentclass[mode=hazy]{elegantnote}
```

Remark *If you are expected to customize background, use:*

```
\definecolor{geyecolor}{RGB}{199,237,204}
\pagecolor{geyecolor}
```

1.2 Device Options

To make the notes more comfortable to read, we designed four output options (of different sizes) that correspond to different reading devices: Pad (default), Kindle, PC and A4paper.

New: For the convenience of notes presentation, version 2.20 offers a new option for device, i.e. `device=screen`, which is similar to the size of MS Powerpoint with ratio aspect of 4:3 (2019/12/06).

The options of output for different devices are

```
\documentclass[device=pad]{elegantnote}    % ipad screen size
\documentclass[device=kindle]{elegantnote} % kindle screen size
\documentclass[device=pc]{elegantnote}     % double pages for pc
\documentclass[device=normal]{elegantnote} % a4 normal page
\documentclass[device=screen]{elegantnote} % 4:3 PPT size
```

Note *You can also select the device by using a direct assignment method, such as:*

```
\documentclass[pad]{elegantnote}
\documentclass[kindle]{elegantnote}
\documentclass[pc]{elegantnote}
\documentclass[normal]{elegantnote}
\documentclass[screen]{elegantnote}
```

Note *To get a normal A4paper size PDF, please select `device=normal`.*

1.3 Color Themes[1]

This template contains 5 color themes, green, cyan, blue(default), sakura and black. If you don't need color, you can choose black theme. The color theme is enabled in the same way as before:

```
\documentclass[green]{elegantnote}
\documentclass[color=green]{elegantnote}
....
\documentclass[black]{elegantnote}
\documentclass[color=black]{elegantnote}
```

[1]Test for chapter footnote.

1.4 Languages

This template contains two sets of language environments, changing the language environment will change the title of table/figure (figure, table), article structure words (such as the table of contents, references, etc.), and the environment Introductory words (such as Theorem, Lemma, etc.). The different language modes are enabled as follows:

```
\documentclass[cn]{elegantnote}
\documentclass[lang=cn]{elegantnote}
\documentclass[en]{elegantnote}
\documentclass[lang=en]{elegantnote}
```

Note *Chinese characters are allowed in Chinese mode only. To type in Chinese characters in English mode, please include* `ctex`[2] *or* `xeCJK` *package.*

1.5 Theorem Class Environments

This template used the `amsthm` to create theorems, there are 4 types of theorem environments

- **Theorem-Class**: theorem, lemma, proposition, corollary;
- **Definition-Class**: definition, conjecture, example;
- **Remark-Class**: remark, note, case;
- **Proof-Class**: proof.

Remark *With the option* `lang=cn`*, the introductory words of the theorem class environments will be changed to Chinese.*

2 Writing Sample

We will define the integral of a measurable function in three steps. First, we define the integral of a nonnegative simple function. Let E be the measurable set in $\mathcal{R}^N$.

[2]Please use `scheme=plain` to retain headlines in English.

Definition 2.1 (Left Coset) *Let H be a subgroup of a group G. A* left coset *of H in G is a subset of G that is of the form xH, where $x \in G$ and $xH = \{xh : h \in H\}$. Similarly a* right coset *of H in G is a subset of G that is of the form Hx, where $Hx = \{hx : h \in H\}$*

Note that a subgroup H of a group G is itself a left coset of H in G.

Lemma 2.1 (Size Of Left Coset) *Let H be a finite subgroup of a group G. Then each left coset of H in G has the same number of elements as H.*

Theorem 2.2 (Lagrange's Theorem) *Let G be a finite group, and let H be a subgroup of G. Then the order of H divides the order of G.*

Proof. Let z be some element of $xH \cap yH$. Then $z = xa$ for some $a \in H$, and $z = yb$ for some $b \in H$. If h is any element of H then $ah \in H$ and $a^{-1}h \in H$, since H is a subgroup of G. But $zh = x(ah)$ and $xh = z(a^{-1}h)$ for all $h \in H$. Therefore $zH \subset xH$ and $xH \subset zH$, and thus $xH = zH$. Similarly $yH = zH$, and thus $xH = yH$, as required.

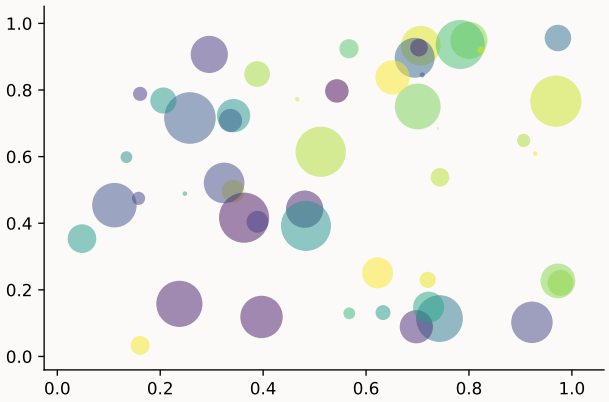

Figure 1: Matplotlib: Scatter Plot Example

Regression analysis is a powerful statistical method that allows you to examine the relationship between two or more variables of interest. While there are many types of regression analysis, at their core they all examine the influence of one or more independent variables on a dependent variable. The process of performing a regression allows you to confidently determine which factors

matter most, which factors can be ignored, and how these factors influence each other.

Let's continue using our application training example. In this case, we'd want to measure the historical levels of satisfaction with the events from the past three years or so, as well as any information possible in regards to the independent variables.

Table 1: Auto MPG and Price

	(1)	(2)
mpg	-238.90***	-49.51
	(53.08)	(86.16)
weight		1.75***
		(0.641)
constant	11,253***	1,946
	(1,171)	(3,597)
obs	74	74
R^2	0.220	0.293

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

- Routing and resource discovery;
  - Language Models
  - Vector Space Models
- Resilient and scalable computer networks;
- Distributed storage and search.

3 Recruit Support Members

Recruit support members for ElegantLaTeX to translate template official guide, maintain wiki entries, update Wechat articles. No deadline for this recruitment.

So far, ElegantLaTeX has four support members:

- OG Translator: YPY;
- Wiki Maintainer: Ingo Zinngo, Xiaohao890809;
- QQ Group Manager: Sikouhjw.

Thank them all!!!

4 Acknowledgement

The number of stars on Github for ElegantPaper reached 176 on Dec. 8, 2019 at the release of ElegantNote v2.40. Thank ChinaTEX and LATEX studio for their promotion.

If you like our templates, star on Github.

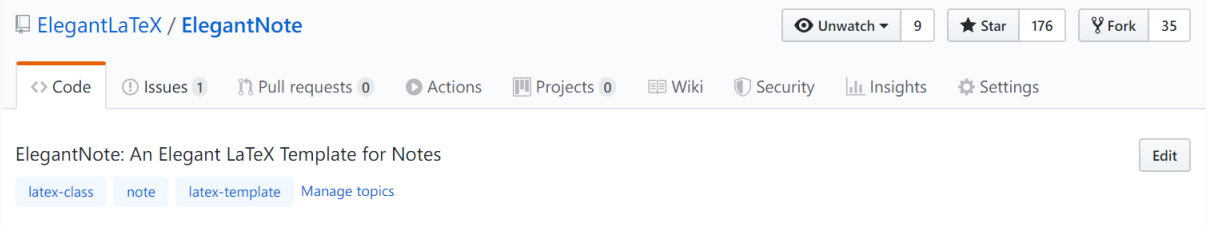

Figure 2: Twinkle, Twinkle, Little Star

5 Donation

To express your love for our templates and/or our developers, please do not hesitate to tip us.

The explanation right of the tip usage belongs to ElegantLATEX with no supervision. Feel free to tip us. Those who donate more than 10 RMB will be

recorded in the donation list and will receive a donation certificate. Thank all the tippers!

Table 2: Donation List

Tipper	Amount	Date	Channel	Tipper	Amount	Date	C
Lerh	10 RMB	2019/5/15	Wechat	LIU ZhiKuo	100 RMB	2019/10/15	A
YueGuoDiPingXian	10 RMB	2019/5/15	Wechat	* Tao	16 RMB	2019/10/17	W
YinSang	20 RMB	2019/5/27	Wechat	ChiHong	12 RMB	2019/10/17	A
* Kong	10 RMB	2019/5/30	Wechat	YuanFengJing	10 RMB	2019/10/28	W
latexstudio.net	666 RMB	2019/6/05	Alipay	GUO DeLiang	88 RMB	2019/11/03	W
Cassis	11 RMB	2019/6/30	Wechat	ZiQiangBuXi	20 RMB	2019/11/03	A
* Jun	10 RMB	2019/7/23	Wechat	DuShuZhiChong	20 RMB	2019/11/18	W
P*u	50 RMB	2019/7/30	Wechat	* Deng	10 RMB	2019/11/18	W
* Meng	19 RMB	2019/8/28	Wechat	* Zhe	20 RMB	2019/11/18	W
QuDouDou	10 RMB	2019/8/28	Wechat	anonymous	10 RMB	2019/11/24	W
LI Bo	100 RMB	2019/10/06	Wechat	Jiye Qian	66 RMB	2019/12/04	W
Njustsll	10 RMB	2019/10/11	Wechat	Boy Yang	20 RMB	2019/12/05	W

6 FAQ

1). *How to remove the information of version?*
Please comment `\version{x.xx}`.

2). *How to remove the information of date?*
Please type in `\date{}`.

3). *How to add several authors?*
Use `\and` in `\author` and use \\ to start a new line.

```
\author{author 1\\ org. 1 \and author 2 \\ org. 2 }
```

7 A Minimal Example

```
\documentclass[en,hazy,blue,screen,14pt]{elegantnote}

\title{ElegantNote Example}
\author{ddswhu}
```

```
\institute{Elegant\LaTeX{} Program}
% \version{1.00}
\date{}

\begin{document}

\maketitle

\section{Introduction}

The content of Introduction.

\end{document}
```