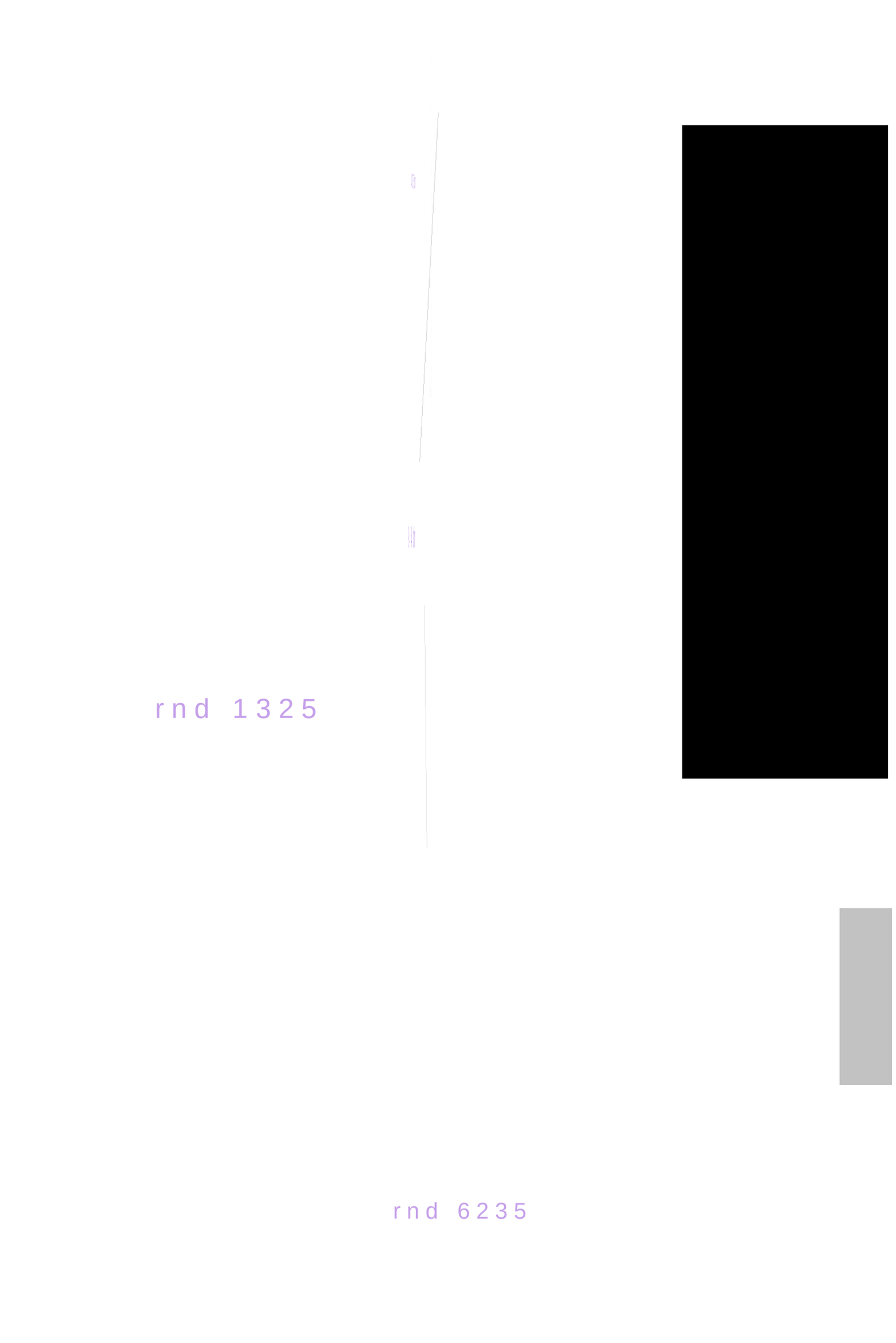
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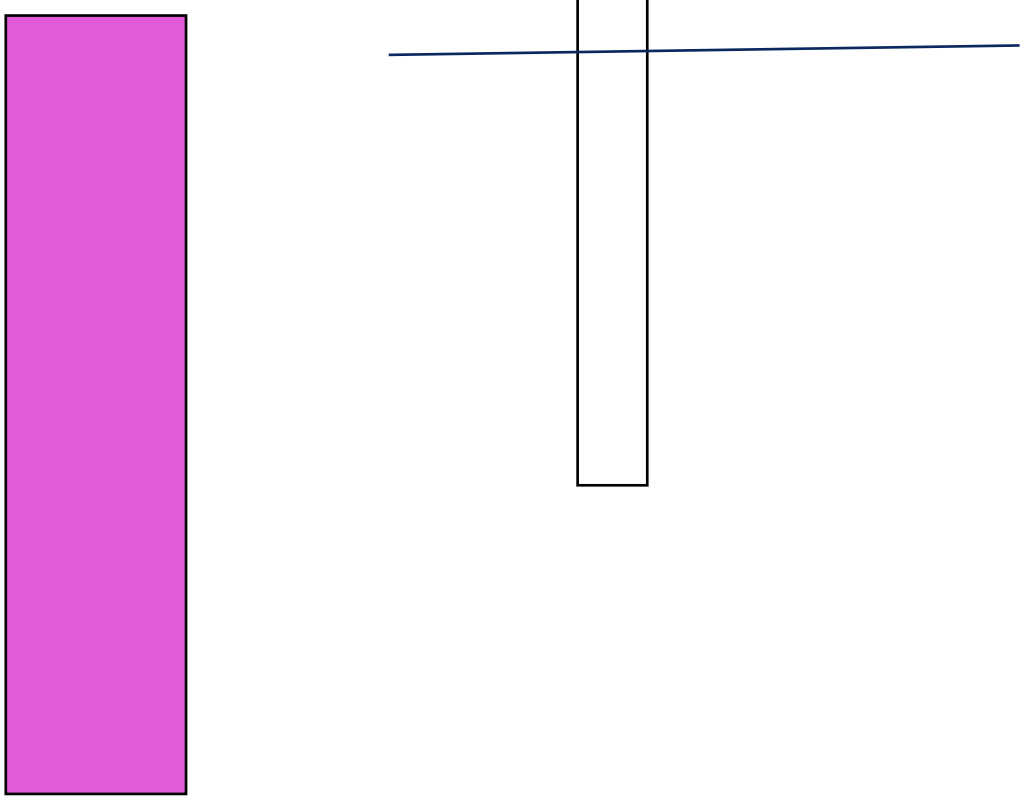

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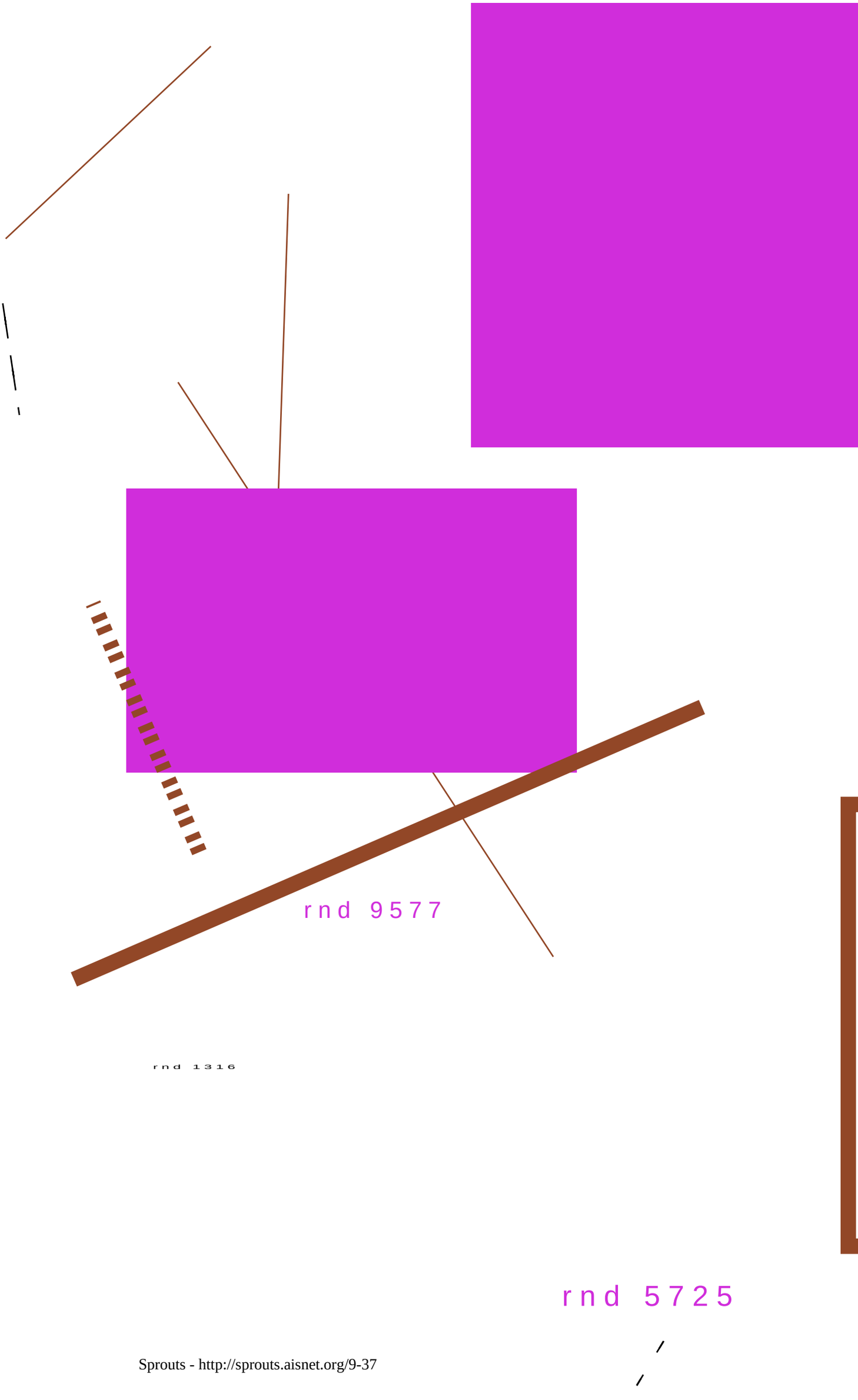
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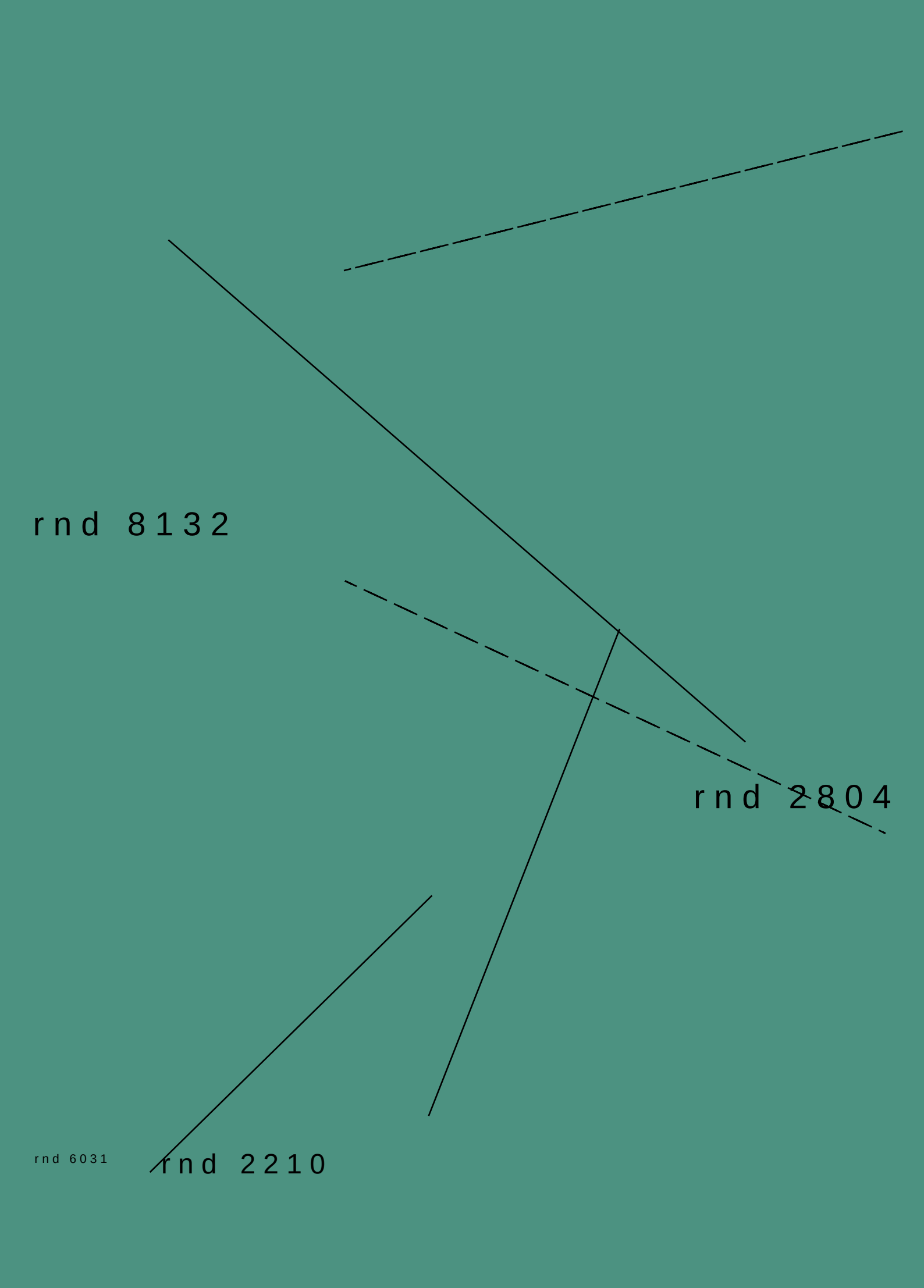
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usefulness), and also that the beliefs of the efforts required to use a system can directly affect system usage behavior (perceived ease of use). More formally, Davis (1985) defined perceived usefulness and perceived ease of use as follows:

> Perceived usefulness: *The degree to which an individual believes that using a particular system would enhance his or her job performance.*
>
> Perceived ease of use: *The degree to which an individual believes that using a particular system would be free of physical and mental effort.*

Davis then, proceeded to the problem of measuring both the perceived usefulness and perceived ease of use of a system

Developing measurement scales for perceived usefulness and perceived ease of use

To develop measurement scales for perceived ease of use and perceived usefulness, Davis referred to psychometric scales used in psychology (Davis, 1989). These scales typically prompt an individual to respond to various questions that pertain to a given context. Responses obtained from these prompts can then be analyzed, and used as an indication of a person's internal belief for the context considered. In the case of TAM, [redacted] ase of use and perceived [redacted] d study, and a laboratory

[redacted] enced computer users to [redacted] suring perceived ease of [redacted] bles 1 and 2, each belief, [redacted] ments that were tailored

[redacted] ess
[redacted] nic mail.
[redacted] my work.
[redacted] d needs.
[redacted] would
[redacted] activities.

[redacted]

12	Using electronic mail incre[redacted]
13	Using electronic mail make[redacted]
14	Overall, I find the electroni[redacted]

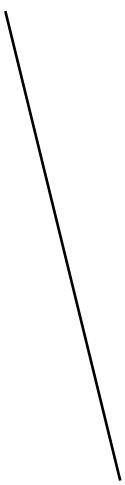


Table 4
Revised 10 item scale for perceived ease of use (Davis, 1989, Table 4, p. 326)

Item No.	Candidate item for psychometric measures for perceived ease of use
1	I find it cumbersome to use the electronic mail system.
2	Learning to operate the electronic mail system is easy for me.
3	Interacting with the electronic mail system is often frustrating.
4	I find it easy to get the electronic mail system to do what I want it to do.
5	The electronic mail system is rigid and inflexible to interact with.
6	It is easy for me to remember how to perform tasks using the electronic mail system.
7	Interacting with the electronic mail system requires a lot of my mental effort.
8	My interaction with the electronic mail system is clear and understandable.
9	I find it takes a lot of effort to become skillful at using electronic mail.
10	Overall, I find the electronic mail system easy to use.

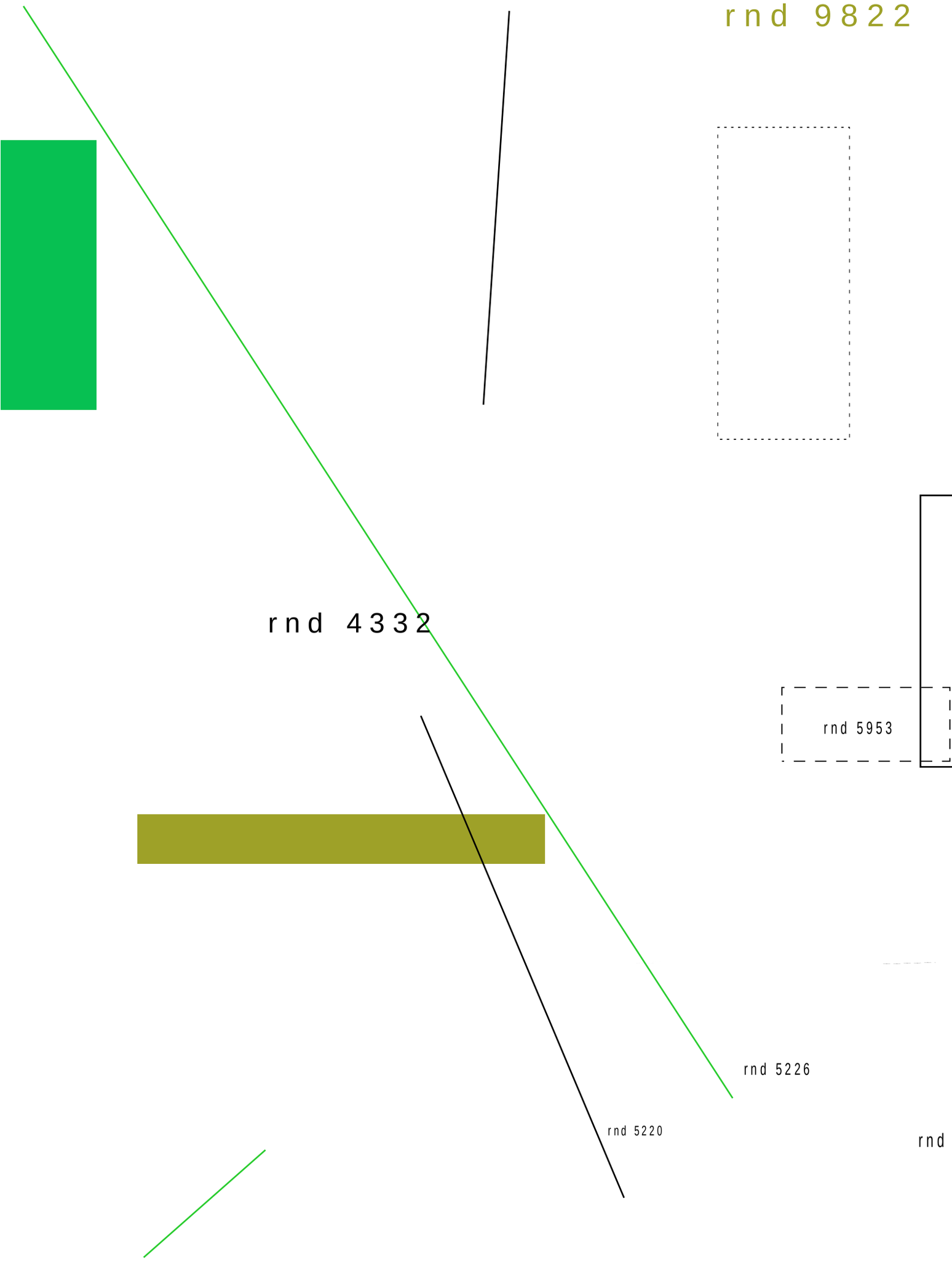
To test the reliability and validity of the new 10 item scales, Davis (1989) conducted a field study with 112 employees working for IBM in Toronto, Canada. Davis requested the participants to use the scales shown in Tables 3 and 4 to rate the usefulness and ease of use of two systems that the employees were already using inside the organization. Participants could assign a rating of 1 to 7 on a likert scale for each of the psychometric measures shown in Tables 3 and 4, with a rating of 1 meaning that the participant strongly agreed with the psychometric measure statement, and a rating of 7 meaning that the participant strong disagreed with the statement. Rating scales in between these two extremes, 1 and 7, represented varying degrees of agreement. Responses were then subjected to further analysis, using principal component analysis, multitrait-method analysis, and factor analysis to determine the reliability and validity of the 10 scale items tested. All the tests showed a high reliability and validity for the 10 item scales.

Davis (1989) also asked the participants from IBM to report their attitude towards the two systems they were rating, using a scale developed by Ajzen and Fishbein (1980) for operationalizing attitude toward behavior. The scale measured five different types of attitude that a person may have toward a system on a seven point scale with mid-point labeled "neutral" as shown below.

All things considered, my using electronic mail in my job is:

	Neutral	
Good	: ___:___:___:___:___:___:	Bad
Wise	: ___:___:___:___:___:___:	Foolish
Favorable	: ___:___:___:___:___:___:	Unfavorable
Beneficial	: ___:___:___:___:___:___:	Harmful; and
Positive	: ___:___:___:___:___:___:	Negative.

Moreover, the participants had to report their actual usage of the two systems on a six position categorical scale with the following labels:



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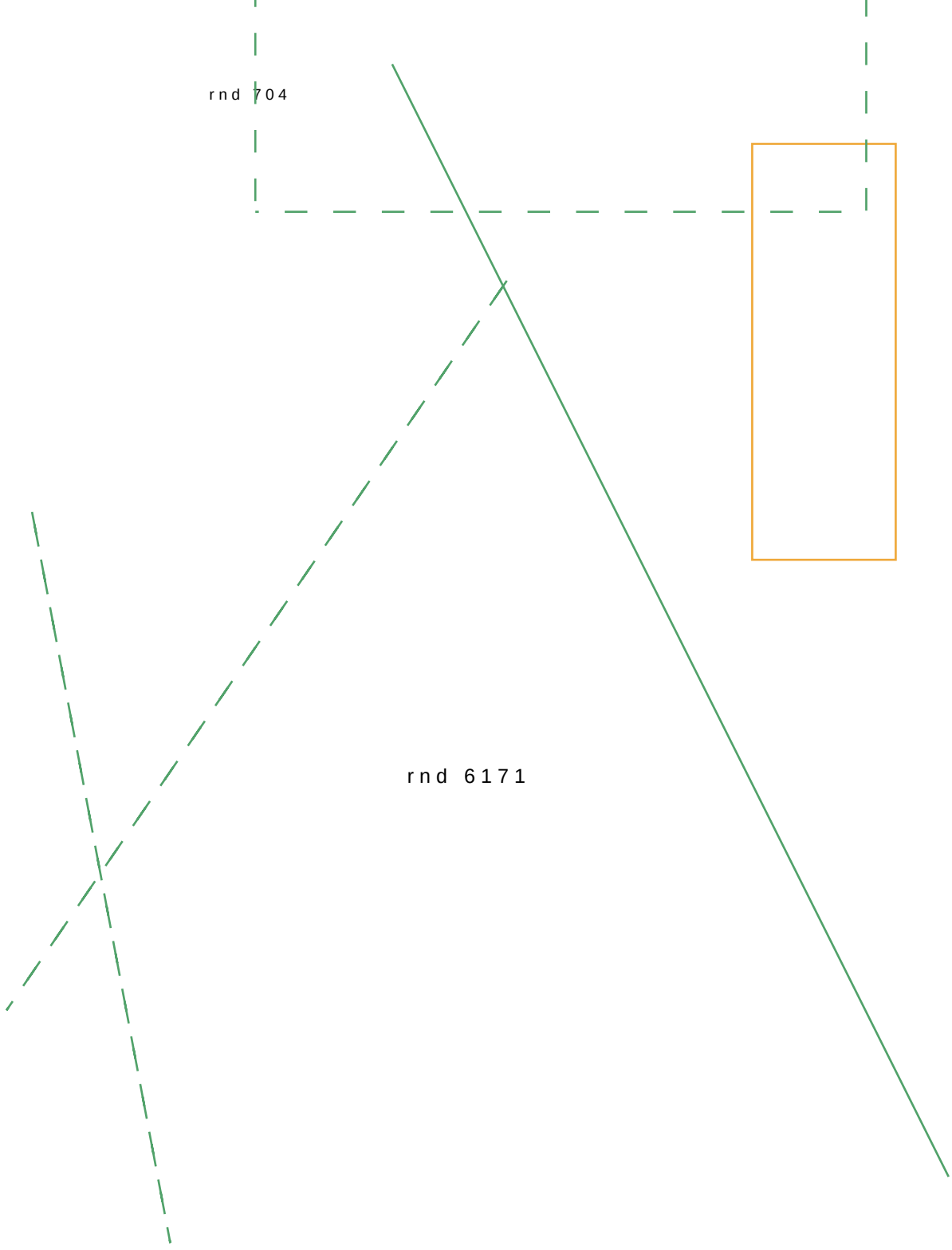

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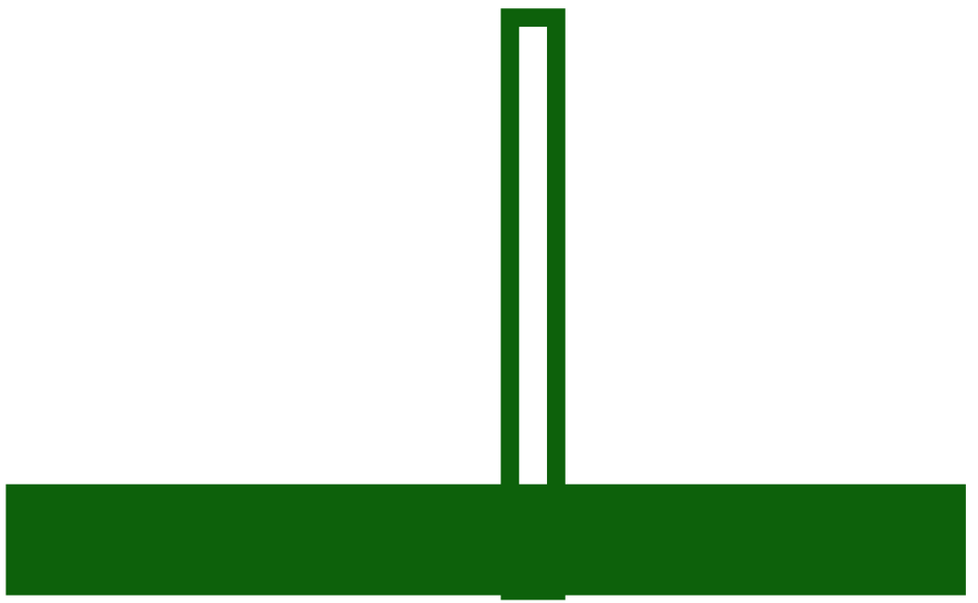

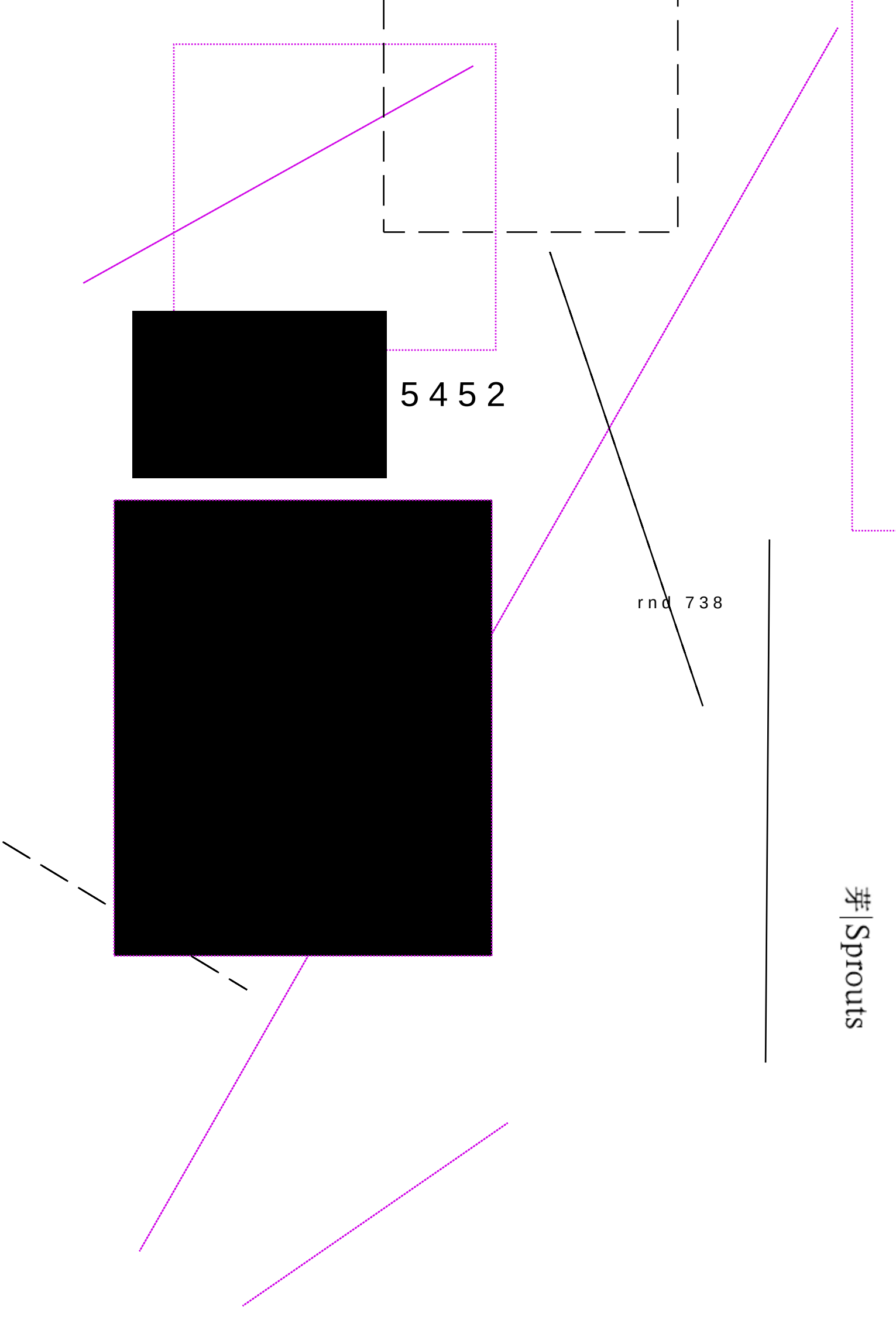
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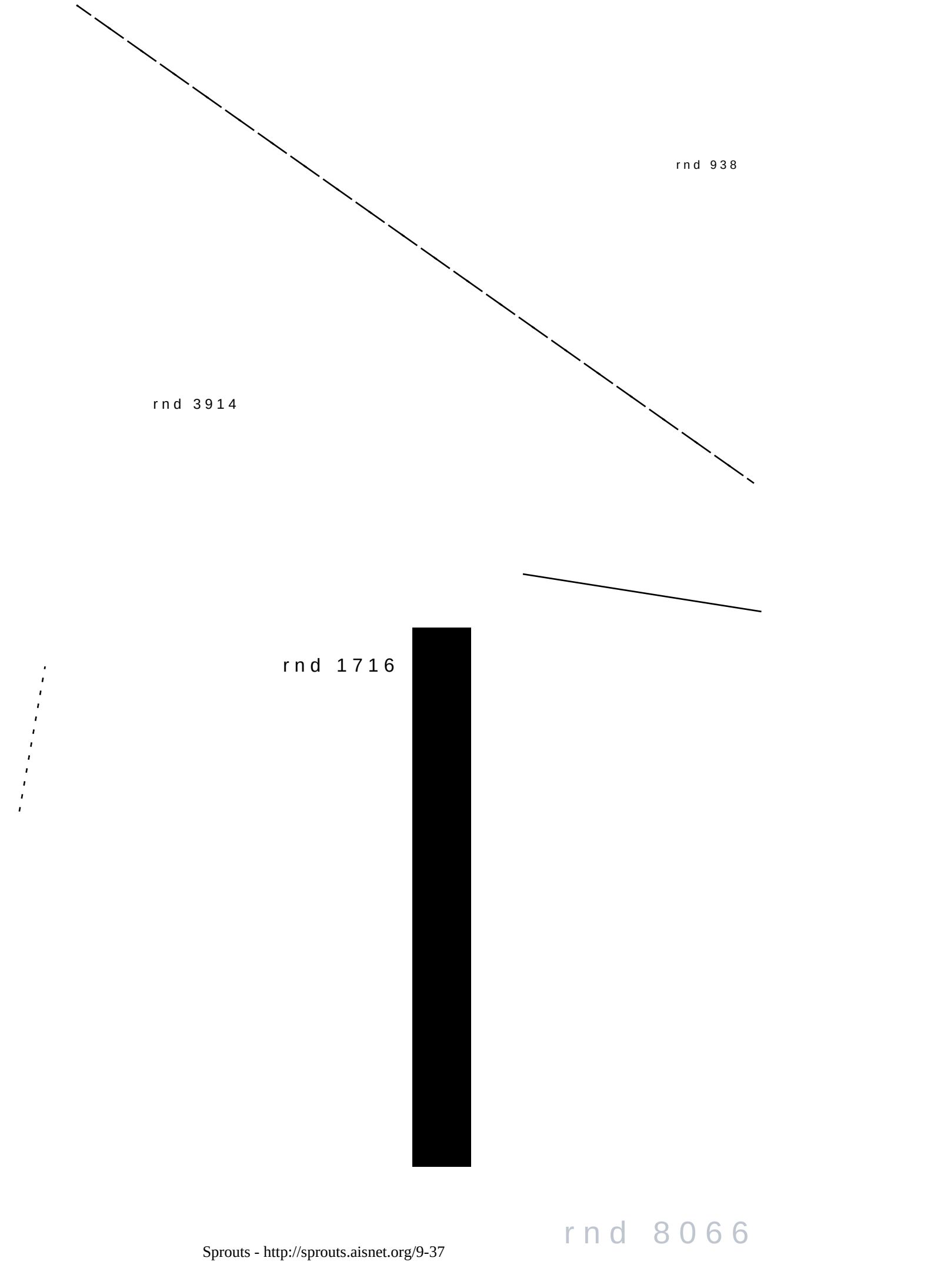
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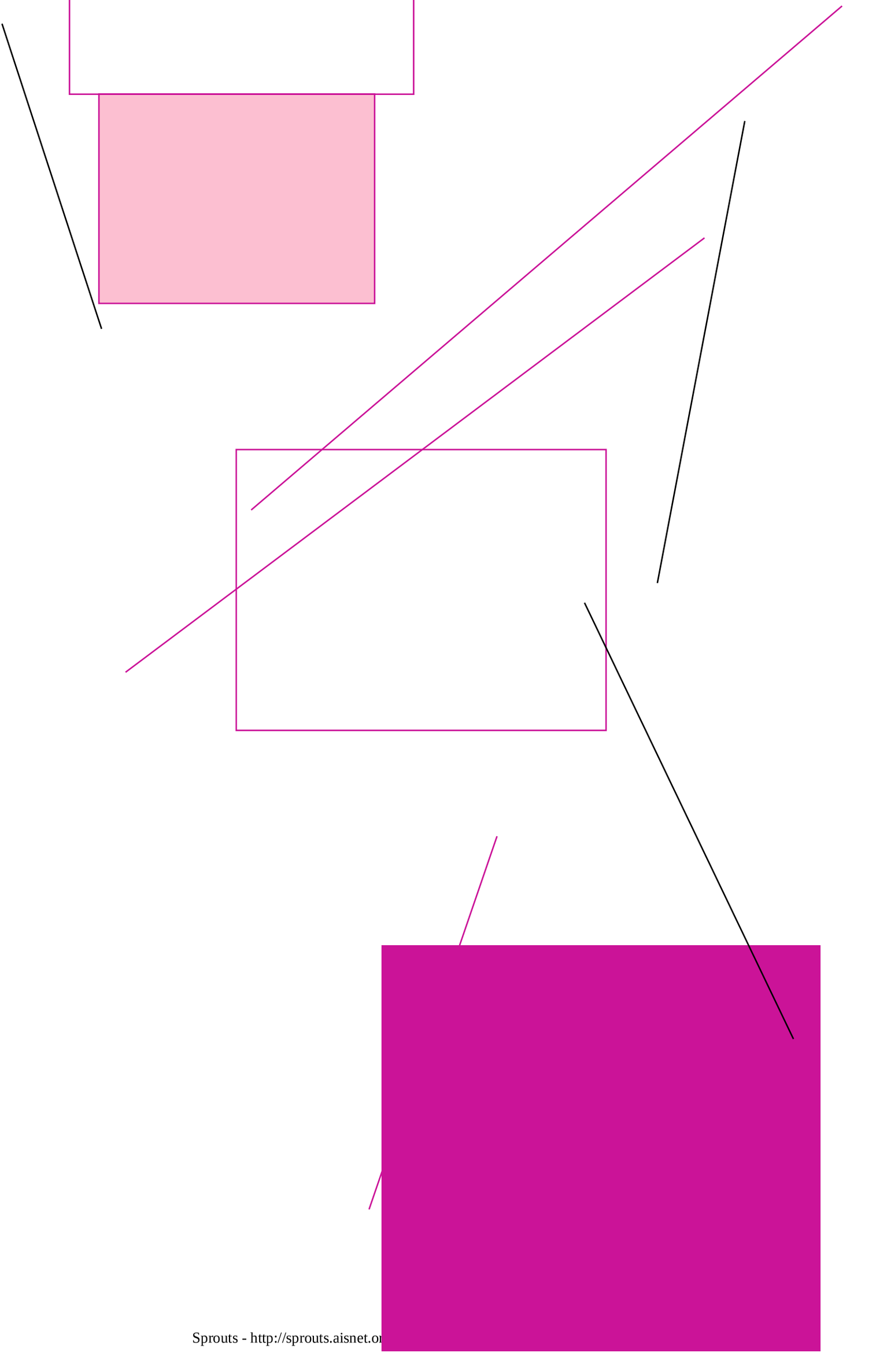

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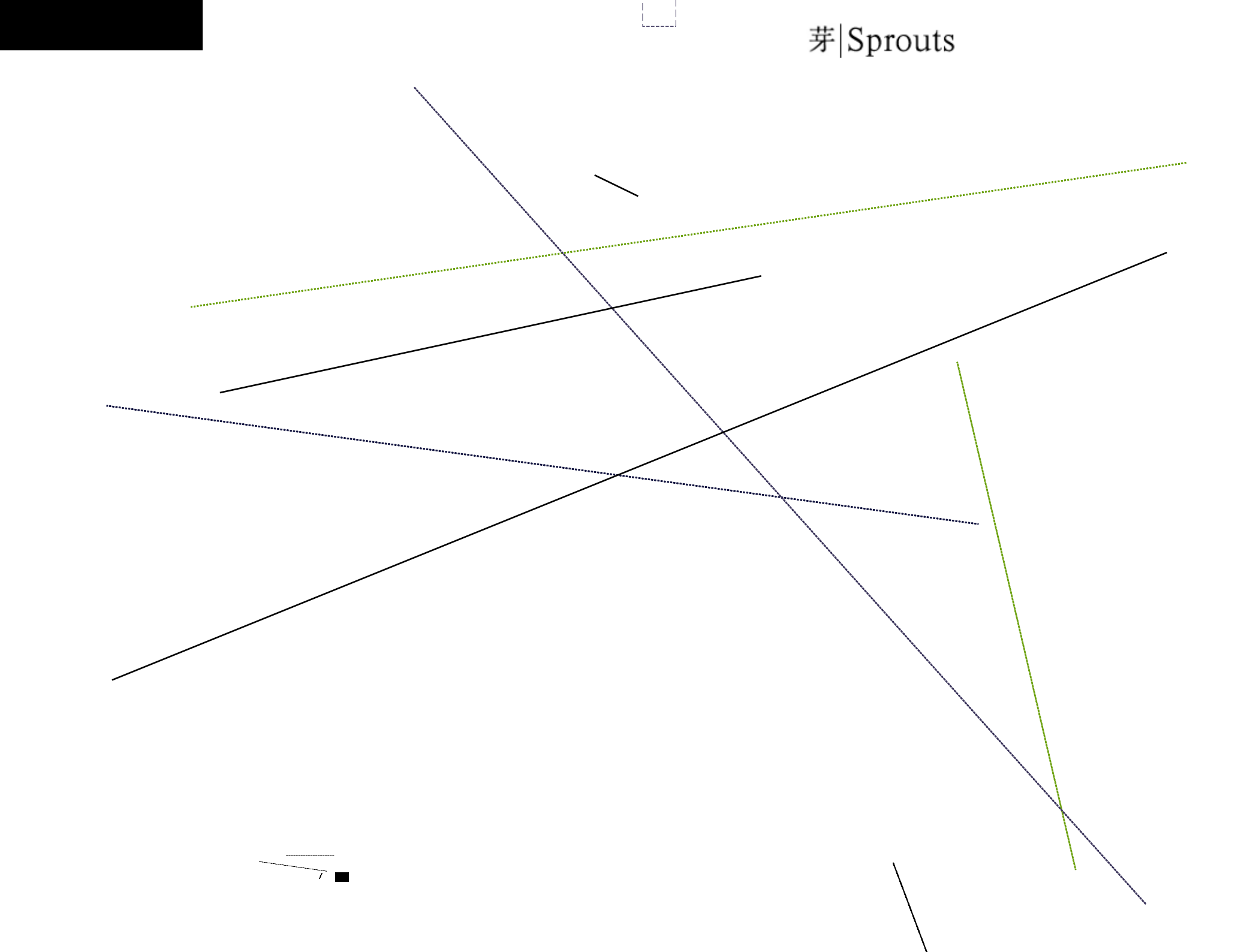

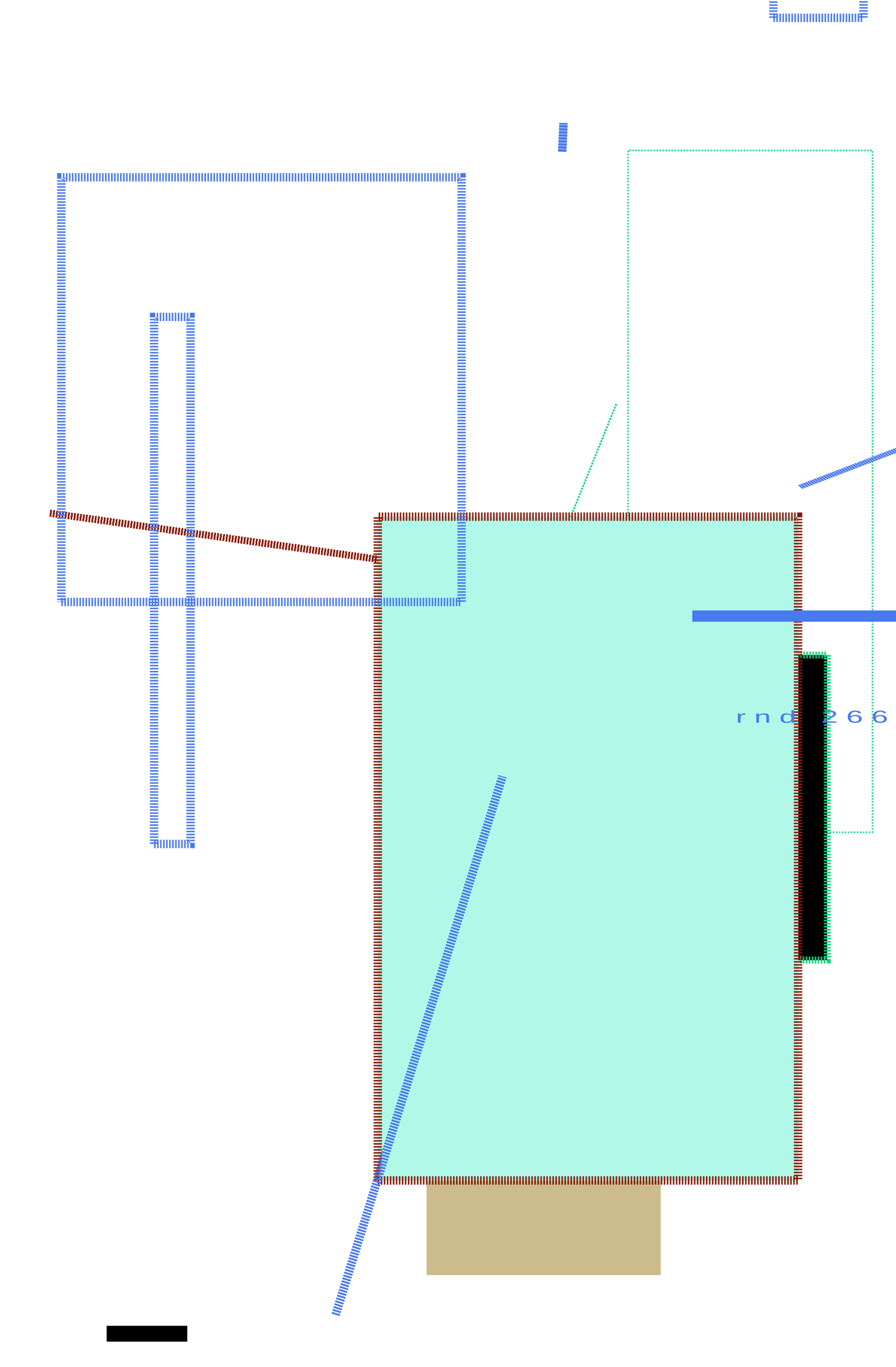
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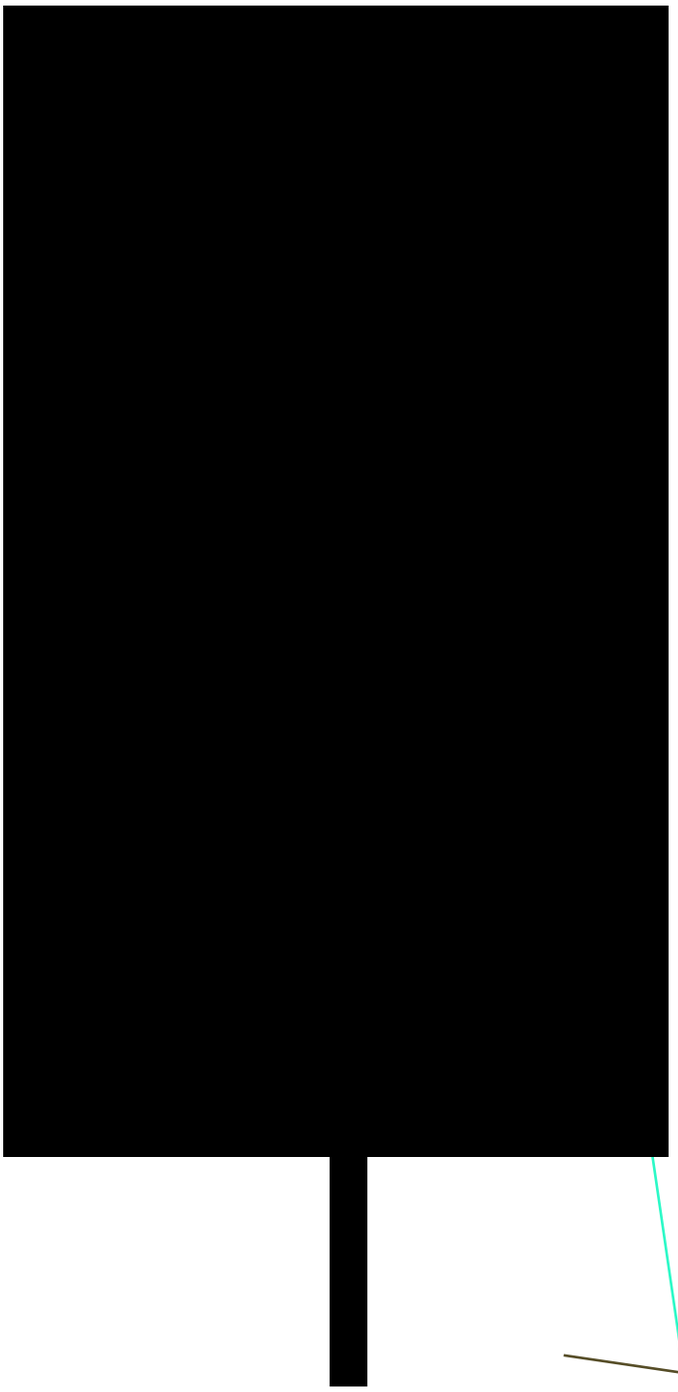

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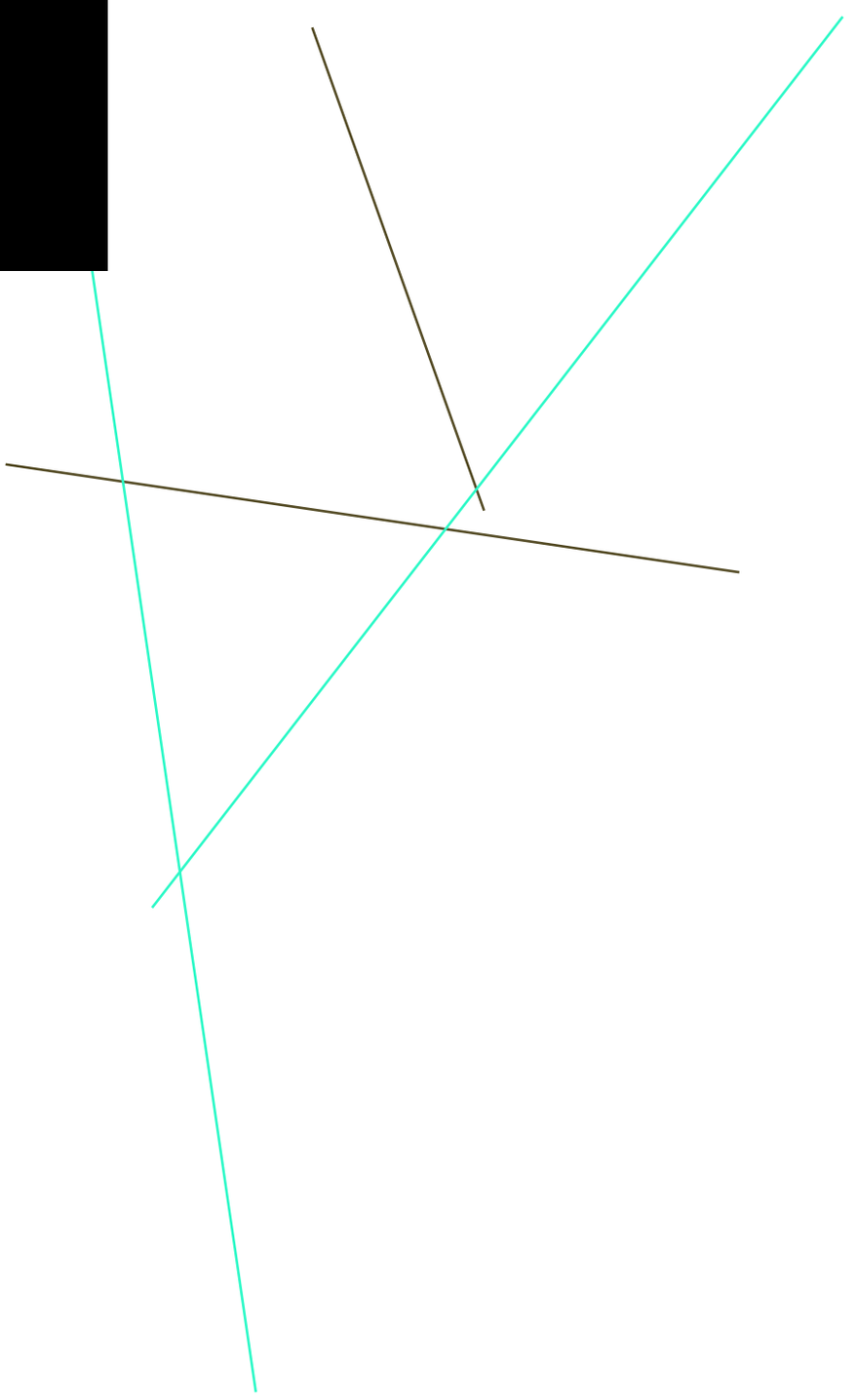

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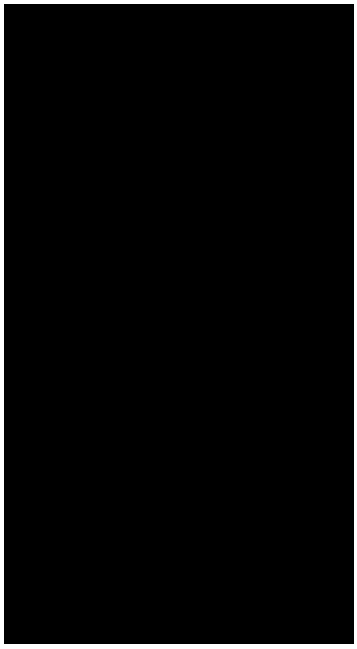

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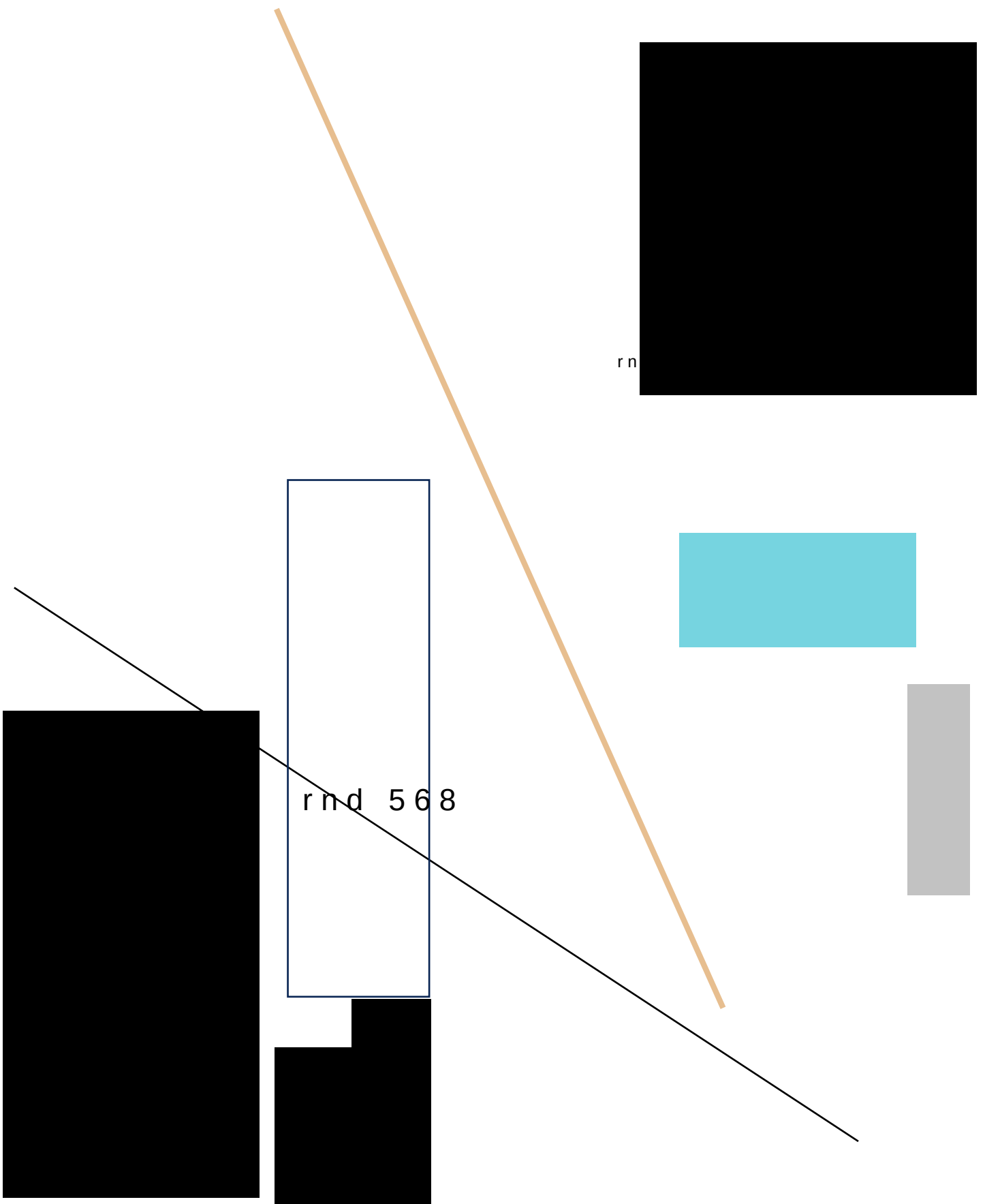
PEOU as proposed in extending TAM	
Voluntariness	The degree to which use of the innovation is perceived as being voluntary, or of free will.
Experience	Prior experience of an individual with a specific technology
Subjective norm	Person's perception that most people who are important to him think he should or should not perform the behavior in question
Image	The degree to which use of an innovation is perceived to enhance one's image or status in one's social system
Job relevance	The capabilities of a system to enhance and individual's job performance
Output quality	The perception how well the system performs tasks that match with job goals
Result demonstrability	The degree to which the results of adopting/using the IS innovation are observable and communicable to others
Computer self-efficacy	The belief that one has the capability to perform a particular behavior
Perceptions of external control	The control beliefs relating to resource factors such as time and money and IT compatibility issues that may constrain usage
Computer anxiety	An individual's apprehension, or even fear, when she/he is faced with the possibility of using computers
Computer playfulness	The degree of cognitive spontaneity in microcomputer interactions
Perceived enjoyment	The extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system usage
Objective usability	A construct that allows for a comparison of systems on the actual level of effect regarding efforts to complete specific tasks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