

Use **R** for Fun

The 6th Chinese R Conference Shanghai Session

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Content

1 Motivation



Content

- 1 Motivation
- 2 For Game



Content

- 1 Motivation
- 2 For Game
- 3 For Entertainment



Content

- 1 Motivation
- 2 For Game
- 3 For Entertainment
- 4 For Imaging



Content

- 1 Motivation
- 2 For Game
- 3 For Entertainment
- 4 For Imaging
- 5 Others



Content

- 1 Motivation
- 2 For Game
- 3 For Entertainment
- 4 For Imaging
- 5 Others
- 6 Conclusion



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- 1 Motivation
- 2 For Game
- 3 For Entertainment
- 4 For Imaging
- 5 Others
- 6 Conclusion
- 7 Acknowledgement



Motivation

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- 3 For Entertainment
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- 5 Others
- 6 Conclusion
- 7 Acknowledgement



Motivation

As we all know, R has become playing a more and more important role in our academic life. Numerous friends and juniors always ask me that how to learn R efficiently. Obviously the best way is practice, the more, the better. But the question is that practice usually feels boring, so it is necessary to find a way to learn R happily. Because of this, I want to say several examples and experiences about using R for fun today. In addition, I also hope that my speaking can let more and more friends begin to love R programming.



For Game

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How to Achieve

Function `getGraphicsEvent`

```
getGraphicsEvent(prompt = "Waiting for input",  
                 onMouseDown = NULL, onMouseMove = NULL,  
                 onMouseUp = NULL, onKeybd = NULL,  
                 consolePrompt = prompt)
```

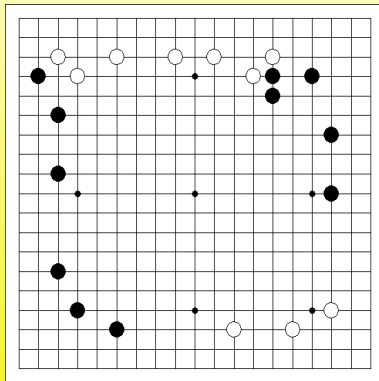
Function `identify` and `locator`

```
identify(x, y = NULL, labels = seq_along(x),  
        pos = FALSE, n = length(x), plot = TRUE,  
        atpen = FALSE, offset = 0.5, tolerance = 0.25, ...)  
locator(n = 512, type = "n", ...)
```



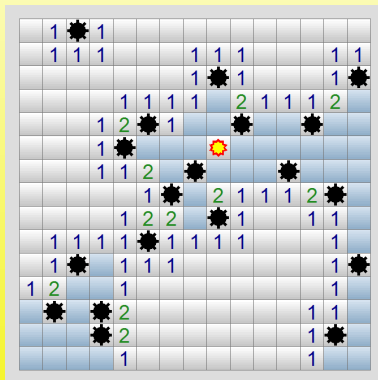
Example Game

Gomoku



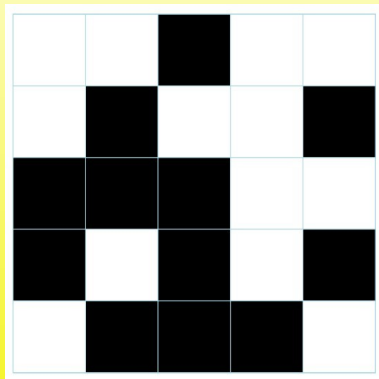
Example Game

Mine Sweeper



Example Game

Light



Example Game

Sudoku

	8	2	4	1		6		7
1	4	3	6	9	7		8	
	9		8	5		4		3
6	7		5	2			3	
		8	1	3		9		6
3	1		9	7	6		5	2
4		1		6	9		2	8
8	2		3	4	1	7		9
	6		2	8			4	1



For Entertainment

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For Entertainment

- **Performing Magic**
- **Playing Music**
- **Animation**
- **Some others**



Predicting Random Number



Package sound or tuneR

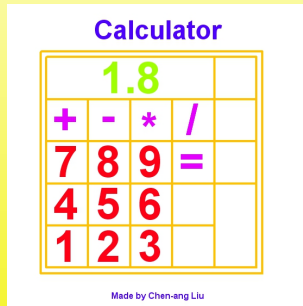
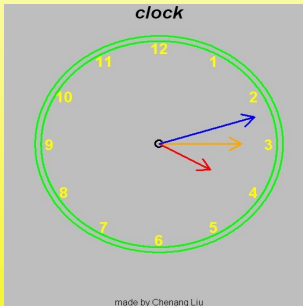


Animation

Package animation and R2SWF



Some Others



For Imaging

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Image Process

Drawing Money

Have you ever considered how to draw a paper currency?



Image Process

Basic Process



Image Process

Further Process



Image Process

Filter



Image Process

Old Photo



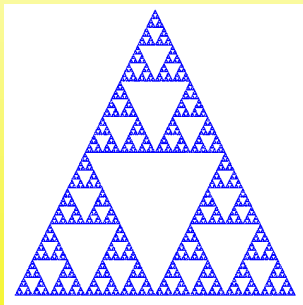
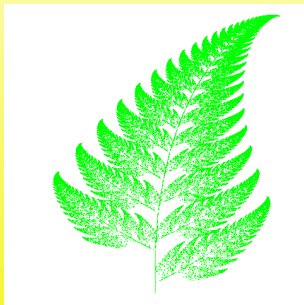
Image Process

Pencil Drawing



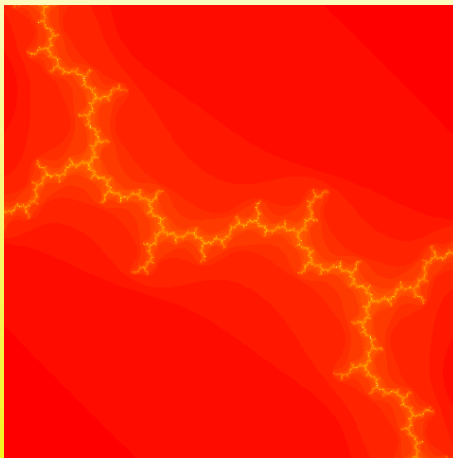
Fractal Graphics

Classical Graphics



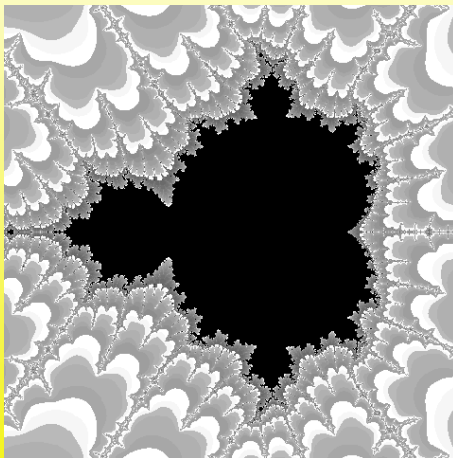
Fractal Graphics

Julia Set

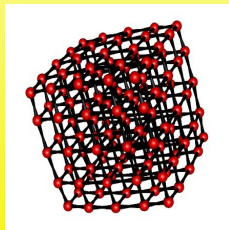
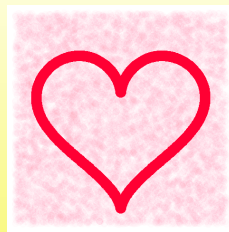
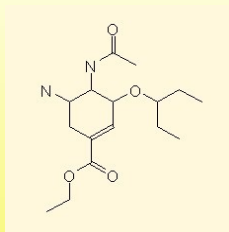
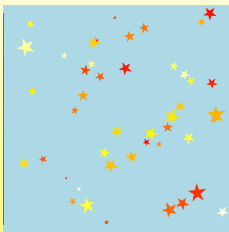


Fractal Graphics

Mandelbrot Set



Other Interesting Graphics



Others

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Others

- Pictograms by R, cited from Robert Grant blog
- Reading XKCD Comics via package RXKCD, cited from revolution analytics
- Simulating a card trick
- Recognizing verification code, cited from BBS of COS
- Package scholar which has released in recent days



Conclusion

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Conclusion

招式千变万化，且良莠不齐，既不可能一一烂熟于心，亦不可能几招致命。唯有积累点滴修炼内功才是王道，内功若略有所成，则各路招式即学即用。



Acknowledgement

- Thanks for the Organization Committee of Chinese R Conference giving me this chance of talking
- Thanks for Capital of Statistics providing numerous excellent examples for my speaking
- Thanks for my friends helping me to modify my slide
- Thanks for your watching, and if you want to reading more examples and applications, please pay attention to my serialized article—Use R for Fun



Acknowledgement

Thank you!



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