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# Ruby Monstas



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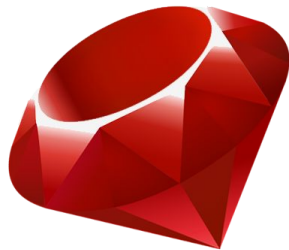
## Session 11

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# Agenda

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- Instance Variables
- Project: IRC Bot



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# Instance Variables

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# Instance variables

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- Just like normal (local) variables
  - But: Valid outside and inside of methods
  - Start with an @-sign
-

# Example

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```
@counter = 0
```

```
def increase_counter
```

```
  @counter = @counter + 1
```

```
end
```

```
increase_counter
```

```
increase_counter
```

```
increase_counter
```

```
puts @counter
```

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# Project: IRC Bot

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# First things first

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You're not expected to understand all of this immediately.

This is meant to be a fun exercise to spice things up and for you to be able to experiment.

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# What we need to understand

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IRC

Bot

Networking (Client / Server)

IRC Protocol

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# IRC Bot?!

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## What's IRC?

### Internet Relay Chat

From Wikipedia, the free encyclopedia

*"IRC" redirects here. For other uses, see [IRC \(disambiguation\)](#).*



This article's **lead section** may not adequately **summarize** key points of its **contents**. Please consider expanding the lead to [provide an accessible overview](#) of all important aspects of the article. *(October 2012)*

**Internet Relay Chat (IRC)** is an [application layer](#) protocol that facilitates the transfer of messages in the form of text. The chat process works on a client/server networking model. IRC clients are computer programs that a user can install on their system. These clients communicate with chat servers to transfer messages to other clients.<sup>[1]</sup> IRC is mainly designed for [group communication](#) in discussion forums, called [channels](#),<sup>[2]</sup> but also allows one-on-one communication via [private messages](#)<sup>[3]</sup> as well as [chat and data transfer](#),<sup>[4]</sup> including [file sharing](#).<sup>[5]</sup>

# IRC

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**Internet Relay Chat (IRC)** is an [application layer](#) protocol that facilitates the transfer of messages in the form of text. The chat process works on a client/server networking model. IRC clients are computer programs that a user can install on their system. These clients communicate with chat servers to transfer messages to other clients.<sup>[1]</sup> IRC is mainly designed for [group communication](#) in discussion forums, called [channels](#),<sup>[2]</sup> but also allows one-on-one communication via [private messages](#)<sup>[3]</sup> as well as [chat and data transfer](#),<sup>[4]</sup> including [file sharing](#).<sup>[5]</sup>

protocol

messages

client / server networking

channels

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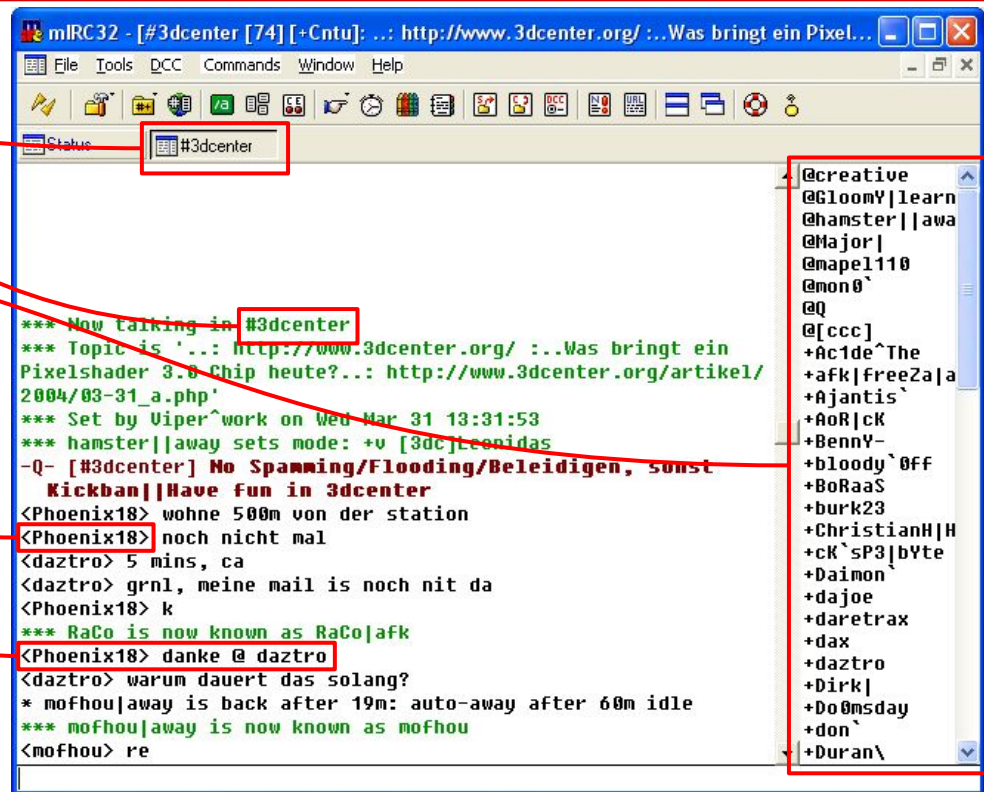
# IRC

channel

user list

user

channel message



# Client / Server Networking

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Client



Internet (the “Cloud”)



Server



# Client / Server Networking

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Hey, what's up?  
Let's talk!



# Client / Server Networking

---



Sure thing, let's do it!





# Client / Server Networking

---



OK cool.



# Client / Server Networking

---



TCP connection





# Client / Server Networking

---



TCP connection



# Client / Server Networking

---

IRC clients



IRC server



# IRC Protocol

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How do client and server talk to each other?

There's a lot to clarify.

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# IRC Protocol

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What could a **client** want to say?

“I want to choose a username, it should be cool\_guy123”

“I want to join channel #coolcrowd”

“I want to write a message to the channel, it should be ‘Hi there!’”

What could a **server** want to say?

“There’s a new message on the channel #rubymonstas by cool\_guy123, he says ‘Hi there!’”

“ruby\_programmer85 just joined #rubymonstas!”

“nerdinand just left #rubymonstas!”

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# IRC Protocol: Client

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NICK nethad-bot

USER nethad-bot 0 \* :nethad-bot

JOIN #rubymonstas

PRIVMSG #rubymonstas :hi all, how are you doing?

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# IRC Protocol: Server

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`:nethad!83.78.226.54 JOIN #rubymonstas`

`:nethad!83.78.226.54 PART #rubymonstas`

`:nethad!83.78.226.54 PRIVMSG #rubymonstas :hey, what's up?`

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# Bot

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So what's a (IRC) bot, then?

From Wikipedia:

“An **IRC bot** is a set of scripts or an independent program that connects to Internet Relay Chat as a client, and so appears to other IRC users as another user. An IRC bot differs from a regular client in that instead of providing interactive access to IRC for a human user, it performs automated functions.”

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# Things a bot could do

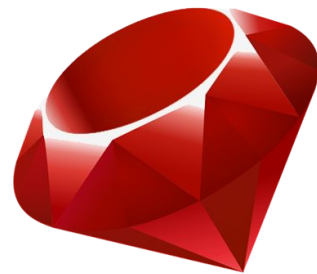
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- Let the user play a game
  - Google something and return results
  - Return information about the weather
  - Return random quotes from users
  - ... ? You name it!
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# Time to build a bot!



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## Let's get to it!

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