

Questions for Advanced Ruby

Category: OOP & Dynamic Features - (24 questions)	
Ruby: Way to check if array has been created and if not create empty array	<code>my_array = []</code>
Ruby: Syntax to find out if a variable has been defined	<code>if defined? var_name</code>
What is the difference between <code>Object.clone</code> and <code>Object.dup</code>	<code>dup</code> method copies just the object's content <code>clone</code> method preserves other properties such as singleton classes associated with object.
Type of copy, deep or shallow, performed by <code>dup</code> and <code>clone</code>	shallow, no copy made of objects referenced by the object, just the initial object itself
Ruby: Quick and dirty way to make a deep copy of an object	Use marshalling to dump object into a string and then load back into new object <code>arr_new = Marshal.load(Marshal.dump(arr_old))</code>
Ruby: When using <code>new</code> syntax to create an object, what special method is called in class.	<code>initialize</code>
Ruby, how to convert the object id back to a reference to the object	<code>_idtoref</code>
Ruby: use of the following code: <code>\$0 == _FILE_</code>	Checks on whether code is being run standalone (returns true) or as a library in another program (returns false)
Ruby method that will be called when object is copied if present	<code>initialize_copy</code>
Ruby method to return a "blank" object without calling <code>initialize</code> function	<code>allocate</code>
What is a Ruby Continuation object	stores a return address and an execution context
Ruby method for generating a Continuation object	<code>Kernel#callcc</code>
Ruby method for creating an <code>UnboundMethod</code> object	<code>Module#instance_method</code>
Once you have a Ruby <code>UnboundMethod</code> object how do you call it	First bind it to a particular object with <code>.bind</code> call Then issue <code>.call</code> method
Ruby method for encapsulating the current binding in an object	<code>Kernel#binding</code>

Ruby method for retrieving the value of a constant from the module or class it belongs	<code>const_get</code>
Ruby methods for getting /setting instance variables	<code>instance_variable_set</code> <code>instance_variable_get</code>
Ruby syntax for getting an class object if we have a string with its name	<code>classname = "Hash" klass = Object.const_get(classname)</code>
Difference in Ruby between <code>remove_method</code> and <code>undef_method</code>	<code>remove_method</code> - remove the current (or nearest) definition of method <code>undef_method</code> - cause the method to be undefined (removing from superclass) as well
Ruby method to grab a list of modules included in a class	<code>included_modules</code>
Ruby method for setting what code will get run when significant events occur	<code>Kernel#set_trace_func</code>
Ruby method to set a block that will be run whenever a global variable is assigned	<code>Kernel#trace_var</code>
Ruby method that will be called whenever a class method is added to module or class	<code>singleton_method_added</code>
Ruby function that will be called whenever garbage collection is run on an object	<code>define_finalizer</code>
Category: Mixins - (11 questions)	
Ruby: When a module is defined how does it affect variable scope	all variable names, class names and module names start fresh inside a module, allowing you to make code that won't effect outside
Ruby: 2 ways to mix a module in a class	<code>include</code> and <code>extend</code>
What is the effect of <code>include</code> when mixing in module code in Ruby	pulls all the module's regular methods into class as instance methods and constants in as class constants
Effect of using <code>extend</code> on a Class to pull module code into class in Ruby	pull the module's regular methods in as class methods
What is the effect of <code>extend</code> when used on an instance object in Ruby	pulling the module's methods in as instance methods, but only on the particular object called on
What is the scope of methods calls and local variables inside a <code>class_eval</code> block in Ruby	methods with be called on the object <code>class_eval</code> is being called upon local variables will be found to the environment where <code>class_eval</code> is being called from

Ruby: What is the effect of defining a class that has already been defined somewhere else	the code is appended to original class
When appending code to Ruby class by defining it a second time do you have access to local variables from first definition	no
What is the effect of using instance_eval on a class object	class methods are created by code instead of instance methods
What is the Ruby idiom: class << ClassName	it allows you to add class methods without using self. prefix
2 ways to use class << syntax in Ruby	class << ClassName or within a class class << self
Category: Libraries - (1 questions)	
Ruby's full featured XML library	REXML
Category: Code Blocks - (24 questions)	
What is aspect oriented programming	style of programming in which common cross-cutting functions are extracted and applied across an application
Every method in Ruby accepts ____ as a final, implicit argument that is optional after regular arguments	block of code
Ruby: When you define a function at the top level with def what is the effect	it is created as a public method of Object class and callable on every object in Ruby
What class are methods in Ruby	objects of the Method class
Ruby: How can you capture a reference to a method	x = method(:method_name)
If you have a variable that is a reference to a method how do you run the method in Ruby	.call
What determines the scope of methods in Ruby	they are bound to the scope in which they were defined, no matter where they are actually called from
What paradigm is used in Ruby for making method calls on objects	message passing - the object is told the name of the method and paramaters supplied, this is what allows method_missing method to work
How can you directly send a message to an object instead of calling the method	.send(:message, args*)

What is a Proc in Ruby	dynamically created method that is captured as an object without first being bound to an object like regular methods
What is difference in binding of method versus proc in Ruby	method is bound to object that owns it proc is bound to environment when created
What is the difference in where a method versus a proc can be created in Ruby	method has limits on where it can be created - example not inside another method proc can be defined anywhere
2 ways to create a Proc object in Ruby	1.) use new method on Proc class: p = Proc.new do 2.) use lambda method p = lambda do
2 main differences in Proc objects created by Proc.new versus lambda in Ruby	lambda created Proc does error checking of argument list lambda created Proc don't cause their executors to pop the stack when a return statement is used in them. They just return to caller
How does Ruby handle creation scope of Proc when the object where it was created goes out of existence	a copy of variables is saved and used when Proc is run
Ruby syntax for turning a block of code passed into a function into a Proc object	put a variable at end of argument with & in front of it def dosomething(&block)
Ruby syntax for converting a Proc object back into a code block	put an ampersand in front of Proc variable &proc
Ruby behavior for Proc objects when, a variable they are bound to, changes in the environment	the Proc object is accessing the environment variable so it will reflect change
3 restrictions to arguments passed into code blocks in Ruby	1.) no default values 2.) can't expand hashes or arrays inline 3.) pre Ruby 1.9 a block can't take a block argument
How can you create a code block that returns a customized method in Ruby	by returning a code block that is created inside (with lambda) and using passed in parameters to create a version based on callers specification

Where do the arguments inside a code block come from in Ruby, such as x below: <code>my_array.each { x ...}</code>	they are supplied through the yield statement within each method <code>yield(next_value)</code>
How would you change how an object enumerates in Ruby	require 'enumerable' then use the <code>.to_enum</code> to pass in methods that will be changed
Ruby: how do you interrupt an iteration from within the code block that you pass in	<code>break</code> statement
Ruby class that makes it easy to iterate over multiple objects simultaneously	<code>SyncEnumerator</code> class in the generator library
Category: Code-writing macros - (3 questions)	
Method to create methods on the fly in Ruby	<code>define_method</code>
How can you create methods conditionally in Ruby	use a <code>define_method</code> surrounded by conditional logic <code>if \$i_need define_method(:hit_me) {...}</code>
Ruby: What is the variable scope when using <code>define_method</code>	local variables are bound to the local scope that created Proc class variables are bound to the class that originated the Proc instance variables are bound to the instance of class that has absorbed Proc as a method
Category: Strings - (11 questions)	
Ruby library that allows substitution of variables into an existing string using embedded ruby	use erb library <code>require 'erb'</code>
Ruby syntax for interpolating variables into an existing string with printf type directives	first create string with <code>temp = 'My string is called %s'</code> then use modulus operator to substitute <code>temp % 'Will'</code>
Ruby - when using ERB object how do you trigger substitution	<code>.result</code>
Ruby syntax to create control / meta characters for strings	<code>\C-x</code> <code>\M-x</code>
Ruby syntax for getting the decimal byte code of special characters created with <code>\C</code> and <code>\M</code> syntax	prefix it with ?

Ruby method for to produce the ASCII character for a given number	<code>.chr</code> <code>97.chr</code>
How to decide when to use string versus symbol in Ruby	string - when sequence of characters are important symbol - when identity of object is important
How do you compress and decompress with Zlib library in Ruby	<code>Deflate#deflateInflate#inflate</code>
Ruby: String method to remove any of the characters passed in	<code>.delete("!,")</code>
Ruby string method to provide explicit printable representations of characters that may be ordinarily invisible	<code>.dump</code>
Ruby method to calculate a CRC (cyclic redundancy checksum) on a string	<code>require 'zlib' crc32(string)</code>
Category: Docs - (4 questions)	
Rails: How do you view documentation on a class method	<code>ri class_name#method_name</code> at the command line
How can you turn off copying of text into output by RDoc inside block comment	<code>#--</code> line and turn back on with another
How can you keep RDoc from documenting a class or method	<code>class MyClass # :nodoc: :nodoc: all</code> makes it block all interior classes and methods as well
Ruby: How do you get RDoc to document parameters on yield line in code block	<code>def my_method # :yields: meaningful_name,</code> <code>....</code>
Category: Numbers - (9 questions)	
Ruby: Convert a string to a hex number	<code>'405'.hex</code> or <code>'405'.to_i(16)</code>
Convert a string to an octal based number	<code>'333'.oct</code> or <code>'333'.to_i(8)</code>
Ruby class that can represent a real number to an arbitrary number of decimal places	<code>BigDecimal</code>
Ruby class that can accurately represent rational numbers	<code>Rational</code>
Ruby way of picking a random item out of an array	<code>a[rand(a.size)]</code>

Ruby class for generating MIME mail attachments that are encoded in base-64	base64 library
Ruby class for representing complex / "imaginary" numbers and do math on them	Complex class
If you need to override Fixnum what class would you use in Ruby	delegate class
What is Ruby mathn library	created by Keiju Ishitsuka that helps with math-intensive tasks unifies all of Ruby's numeric libraries so they "play well" together
Category: Dates - (30 questions)	
2 different time implementations in Ruby	Time library based on older C libraries DateTime
Ruby Time method to grab numeric day of week	wday
Ruby Time method to grab numerical day of year	yday
Ruby Time method to grab the time zone of Time object	.zone
Ruby Time method to find if time is in daylight savings time	isdst
What is the date range handled on Ruby Time class	December 1901 to January 2037
Ruby DateTime syntax to create a specific date	DateTime.new(1855, 4, 10)
Ruby DateTime earliest date represented	4712 BCE
Ruby internal representation of Time versus DateTime object	Time is number of seconds DateTime is number of days
Ruby Time method to grab current GMT time	.gmtime
Ruby time method to return number of microseconds	.usec
Ruby DateTime method to create a custom format for parsing dates	.strptime
Ruby Time method to create RFC822 dates	Time.rfc822
Ruby time method to create XML type date	Time.xmlschema
Ruby Time method to create an ISO 8601	Time.iso8601

Ruby shortcut for adding / subtracting months from Date or DateTime	<< - subtract >> - add
Ruby DateTime method to convert one timezone to another	.new_offset
Ruby library to supply timeout functionality to prevent runaway code	require 'timeout'
Ruby method for creating new Time object	Time#mktime Time#local
Ruby Time object syntax for display name of week day	Time#strftime("%a")
Ruby Time method for generating a new time based on number of seconds since epoch	Time.at
Ruby Time syntax to display the week number starting from Sunday / Monday	Time#strftime('%U') Time#strftime('%W')
Ruby Date method to return the week number	Date#cweek
Ruby Date method to detect if date is a leap year	gregorian_leap? leap?
Ruby Time method for grabbing string representation of time zone	Time#zone
Ruby Time method for printing hours, minutes and seconds of time	Time#strftime("%H:%M:%S')
Ruby Time method for printing 12-hour time, minutes and AM/PM indicator	Time#strftime('%l:%M %p')
Ruby class / method for parsing string representations of dates	require 'parsedate.rb'include ParseDate parsedate("xxxxx")
Ruby Time strftime syntax for generating abbreviating month / full month	%b - abbreviated month%B - full month
Ruby Time method for converting to GMT time	Time#gmtime Time#utc
Category: Arrays - (11 questions)	
Ruby Array iterator that give you both array value and index count	.each_with_index
What does the following Ruby syntax do: a, b, *c = [1, 2, 3, 4, 5]	a = 1 b = 2 c = [3, 4, 5]
Ruby class that creates an Array that has only unique values	Set

Ruby syntax to union 2 arrays together	<code>[1, 2, 3] [2, 3, 4] #=> [1, 2, 3, 4]</code>
Ruby syntax to perform intersection of 2 arrays	<code>[1, 2, 3] & [2, 3, 4] #=> [2, 3]</code>
Ruby Set methods to perform intersection / union / difference of 2 sets	<code>.intersection</code> <code>.union</code> <code>.difference</code>
Ruby Set method to divide a set into partitioned subsets	<code>.divide</code>
Ruby syntax to create an array with values filled with defaults	<code>arr = Array.new(size, "default value")</code> all references to the same object
Ruby: What is the difference between array enumerator sort and sort_by	<code>sort_by</code> performs Schwartzian transformation and is faster if complicated comparison is used, it performs calculation once and stores before sorting
Ruby library for working with multi-dimensional arrays	<code>NArray</code>
Ruby Set methods for determining if one set is subset / superset of another	<code>.subset?</code> <code>.superset?</code>
Category: Hashes - (10 questions)	
Ruby: reason to use symbols (:name) instead of strings as keys	saves on memory, each time a string is used it creates another object, each symbol is created only once
What is wrong with this Ruby statement: <code>my_hash = Hash.new []</code>	all of the missing keys will point to same array not a unique empty array
Ruby syntax for correctly setting missing hash keys to empty array	<code>my_hash = Hash.new { hash, key hash[key] = [] }</code>
Ruby Hash iterator to delete keys based on block returning true	<code>delete_if</code>
Ruby Hash keys are normally based on object_id of key, what 3 Ruby objects override this behavior	<code>Array</code> , <code>Hash</code> , and <code>String</code> they are based on value in the object, not the object_id
What is the output of Ruby Hash sort and sort_by iterators	an array of 2 dimensional arrays with key, value pairs
Ruby class to use if you need to iterate over a hash in order that it was added	<code>SortedHash</code>

Ruby: 2 main ways to print Hash in a formatted way	Kernal#p method or use the pp module (pretty print)
Ruby Hash method to invert key / values	.invert
Ruby alias for Hash#merge	Hash#update
Category: File System - (35 questions)	
Ruby: difference between File.file? and File.exists?	exists? will return true if file, directory or other special file .file? returns true only if file is an existing regular file
Ruby syntax to determine if directory exists	File.directory?
Ruby methods to determine if block device / character-device files exists	File.blockdev? File.chardev?
Ruby method to determine if socket file exists	File.socket?
Ruby method to determine if named pipe exists?	File.pipe?
Ruby method to determine if a file is a symbolic link	File.symlink?
Ruby methods to determine if file is readable, writeable or executable	File.readable? File.writeable? File.executable?
Ruby methods to find out if user owns a file or belongs to Unix group that owns it	File.owned? File.grpowned?
Ruby method to grab the permissions octal code	File.lstat('file_name').mode
Ruby methods to determine if actual process user can execute / read / write to a file	File.executable_real? File.readable_real? File.writeable_real?
Ruby method to grab the file statistics such as mtime	File.stat
Ruby method to grab enumerable list of files in a Directory	Dir.open(...)

Ruby Dir method to reset pointer to beginning of file list	<code>.rewind</code>
Ruby method for reading file as an array of lines	<code>.readlines</code> on an opened file
Ruby method to write string information to opened file	<code>.write</code> or <code><<</code>
How do you turn off file write buffering in Ruby	<code>IO.sync = false</code>
Ruby method for grabbing file path to an opened file	<code>.path</code>
Ruby method for moving back to beginning of opened file	<code>.rewind</code>
Ruby constant that holds the location of temporary file creation	<code>Dir::tmpdir</code>
Ruby method to lock a file	<code>File#flock</code>
Ruby: how do you change where standard input, output and error information go	assign any IO object to global variables <code>\$stdin, \$stdout, \$stderr</code>
Ruby method for moving backward / forward on open file	<code>.seek</code>
Ruby method for reading a certain number of bytes from open binary file	<code>.read(xx)</code>
Ruby method for checking if open file is at end of file	<code>.eof?</code>
Ruby nested class within File that encapsulates file info such as permissions and time stamps	Stat can get a copy by calling <code>stat</code> and <code>lstat</code> on File
Ruby low level methods for reading / writing to IO	<code>sysread</code> <code>syswrite</code>
Ruby IO method to output a single character	<code>putc</code>
Ruby global variable that has a concatenation of all files on command line	<code>ARGV</code>
Ruby IO method that pushes a single character back onto the stream	<code>ungetc</code>
Ruby method for setting / reading umask value (Unix)	<code>File.umask</code>

Ruby File method for determining if file is zero length or not	<code>.zero?</code>
Ruby file method for returning size of file	<code>File('name').stat.size?</code>
Ruby method for returning the type of file	<code>.stat.ftype</code>
Ruby File::Stat methods for determining if file is sticky, has group bit set or user bit set	<code>.stick?.setgid?setuid?</code>
Ruby library for turn off nonblocking IO	<code>io/nonblock</code>
Category: Classes - (7 questions)	
Ruby: How can you make an instance variable readable from outside the class	call the <code>attr_reader</code> on its symbol <code>attr_reader :my_var</code>
Ruby class to completely impersonate another object or delegate most of it's calls to another	<code>delegate</code>
Ruby: How do you allow users to pass in <code>:symbol => xxx</code> style arguments to a method with only arguments that they have values for	make the methods final argument be a hash, ex: <code>def my_method(arg1, arg2, args={})</code>
Ruby: what happens when you call <code>super</code> with no arguments in method	the arguments to original method call are passed to superclass method
Ruby standard error to throw when a method is not implemented	<code>NotImplementedError</code>
Ruby behavior when freezing a variable that has objects included	the outer variable can't be changed but values of sub objects can be
Ruby: how can you prevent methods from being added to a class	put <code>self.freeze</code> as last line of class definition
Category: Modules - (4 questions)	
Ruby: how can module include initialization code and how to call	if it has an <code>initialize</code> method and the class that mixes in code makes a call to <code>super</code> in it's <code>initialize</code> method
Ruby: how can you automatically include class methods when user only uses <code>include</code> to extend a class	1.) in module define a submodule that includes all methods you want as Class methods 2.) Define the included method for the module 3.) Within included callback, call <code>.extend</code> on receiver with the submodule module name
Ruby: methodology to split large module into multiple files that are loaded only if user accesses the functionality	use <code>Kernel#autoload</code> <code>autoload :Object1 "file1.rb"</code> <code>autoload :Object2 "file2.rb"</code>

Ruby: Method that lists classes that have been included in current class in order that they will be called on super method calls	<code>.ancestors</code>
Category: Reflection - (14 questions)	
Ruby method to get parent class of Class object	<code>superclass</code>
Ruby method to determine if a class defines a certain method	<code>method_defined?</code> on class
Ruby callback methods for a class when method is added / removed / undefined	<code>method_added</code> <code>method_removed</code> <code>method_undefined</code>
Ruby syntax to undefine a method in a class	<code>undef :method_name</code>
Ruby syntax for setting an instance variable in <code>define_method</code> block	<code>instance_variable_set('var', value)</code>
What is purpose of <code>Kernal#binding</code>	bookmark of the Ruby interpreter's state, including local variables, whether in class, method, etc.
Ruby method to remove a method that has been defined within a class or module	<code>remove_method</code>
Ruby: What happens if you use <code>remove_method</code> on an inherited method	generates an error
Ruby method to prevent subclass from responding to an inherited method	<code>undef_method</code>
Ruby syntax is required to use <code>remove_method</code> on singleton methods	<code>class << my_instance</code> <code>remove_method(:my_method)</code> <code>end</code>
Ruby syntax to remove a constant from module	<code>Module#remove_constant</code>
Ruby method to remove an instance variable from single instance of class	<code>Object#remove_instance_variable</code>
2 libraries for wrapping code before and after a method invocation in Ruby	glue gem AspectR third-party library
Ruby AspectR library methods to add / remove code before/after a method call	<code>.wrap</code> <code>.unwrap</code>
Category: XML - (25 questions)	
Ruby class that is a SAX style XML parser	<code>StreamParser</code>
Ruby method for parsing an XML document with REXML library	<code>xml = REXML::Document.new(doc)</code>

Ruby REXML method to get documents root element	Document#root
Ruby REXML method for iterating over child elements	Element#each_element
Ruby REXML method to determine if element has child elements	has_elements?
Ruby REXML method to get the next / previous sibling element	.next_element .previous_element
Ruby REXML method to get the parent of an element	Element#parent
Ruby REXML method to get the name of the element	Element#name
Ruby REXML method that gives a fast / flexible way to scan large XML files for parts of interest	Document.parse_stream
Ruby REXML - 3 methods for locating Element objects within parsed documents	REXML::XPath#first#last#match
Ruby REXML method to find the attribute value	.attribute('attribute_name')
Ruby REXML method to grab a particular child element by index	.children[1]
Ruby gem that allows forgiving XML parsing of documents	rubyful_soup
How does Ruby XMLSimple library parse document	into a hash object
Ruby gem that allows you to check if XML document conforms to a given DTD schema	libxml-ruby
Ruby REXML method to add a new element to existing document	.add_element
Ruby REXML method to append text node to contents of an element	.add_text
Ruby REXML method that gives an element a single text node or overwrites initial text node	Element#text=
Ruby REXML method to delete an attribute	Element#delete_attribute
Ruby REXML method to replace one node with another	Element#replace_with

Ruby REXML syntax for compressing whitespace from a XML document	<code>REXML::Document.new(text, {:compress_whitespace => :all})</code>
Ruby library for determining the character encoding of text	<code>libcharguess</code>
Ruby library for converting a document from one encoding to another	standard library <code>iconv</code>
Ruby class#method for extracting all URL from a string	<code>URI.extract</code>
Ruby library for grabbing the content of a web page	<code>open-uri</code> library <code>web_page = open('http://www.yoyobrain.com')html = web_page.read</code>
Category: Graphics & Other File Formats - (17 questions)	
4 ways to resize images using Ruby <code>Magick::Image</code> class	<code>resizescalesamplethumbnail</code>
Ruby <code>Magick::Image</code> methods for opening and saving files	<code>read('name.xx')</code> <code>write('name.xx')</code>
Ruby <code>Magick::Image</code> class methods to get image's original width and height	<code>columns</code> <code>rows</code>
Ruby <code>Magick::Image</code> class method for resizing as a percentage of original size	<code>.resize(scale_factor)</code> <code>scale_factor</code> should be a floating point number
Ruby <code>Magick::Image</code> class method to impose a maximum size on image while maintaining aspect ratio	<code>change_geometry</code>
Ruby <code>Magick::Image</code> class method for grabbing a part of image from original	<code>crop</code>
Ruby <code>Magick::Image</code> class method for adding text to an image	<code>annotate</code>
Ruby <code>RMagick</code> method for querying <code>RMagick</code> 's capabilities	<code>Magick.format</code>
Ruby class for converting data into graphs	<code>Gruff</code> library
Ruby gem for creating sparkline images	<code>sparklines</code> gem
Rails oriented gem for augmenting <code>sparklines</code> gem in Rails environment	<code>sparklines_generator</code>
Ruby gem for symmetric-key cryptography libraries	<code>excrypto</code>
Ruby standard library for parsing CSV style data but with different delimiters	<code>CSV::Reader</code>

Ruby gem for generating simple Excel spreadsheets	spreadsheet library
Ruby gem for parsing simple Excel spreadsheets	parseexcel
Ruby gem for generating MIDI music files	midilib
Basic Ruby RMagick syntax for drawing objects	cir = Magic::Draw.new...fill out options cir.draw(img)
Category: Databases & Persistence - (11 questions)	
Ruby's simplest database abstraction library	DBI
2 most popular database abstraction libraries for Ruby	ActiveRecord Og
Ruby YAML methods for putting YAML datastructure into / reading out of a file	YAML.dump YAML.load
Ruby class for faster serialization of data structures, but not human readable or very compatible with other languages	Marshal.dump Marshal.load
Ruby gem for storing objects in RAM and persist between independent executions of program	madeleine gem
Ruby base library class for indexing and quick keyword search of text	SimpleSearch library require 'search/simple'
Ruby class for dealing with Berkeley DB files	dbm like a fast disk-bashed hash that stores only strings
Main drawback to using Berkeley DB format in Ruby	many different implementations of Berkeley DB, and file formats vary widely making it not very portable
Ruby: what is the following syntax: <<-end	it will append everything until end is encountered
Difference between ActiveRecord and Og database interfaces in Ruby	ActiveRecord is database centric - must define scheme ahead of time so Ruby can understand Og is Ruby centric, define Ruby objects and Og creates table structures
Purpose of Ruby library PStore	provides file-based persistent storage of Ruby objects
Category: Internet Services - (15 questions)	
2 Basic internet servers included with Ruby to provide starting point for service development	gserver - generic framework for almost any Internet service WEBrick - web server

Ruby library for more complex web page fetching than open-uri library	net/http
Ruby net/http method to make a web page request	get_response - to grab all header information and page text get - to grab text
Ruby library for connecting to HTTPS web site	OpenSSL extension to Ruby
Ruby syntax for connecting to HTTPS website using OpenSSL	instantiate a Net::HTTP object and set use_ssl to true
Ruby - how to find IP address of domain name	use Resolv::DNS class
Ruby standard library for interfacing with IMAP mail server	net/imap
Ruby standard library for interfacing with POP3 mail server	net/pop
Ruby class for interfacing with FTP server	Net::FTP class
Ruby standard library for interfacing with telnet server	net/telnet
Ruby standard library for interfacing with SSH server	net/ssh
Ruby higher level interface that abstracts Net::SSH library	popen3 method
Ruby syntax for pinging a machine	Ping.pingecho
How does Ruby's gserver work	wraps Ruby's underlying TCPServer class in a loop that checks for connections and spawns processes to handle them
Simple way to embed a server in ruby application	write a custom servlet for WEBrick
Category: Web Services - (8 questions)	
Ruby: Basic mechanism for XML-RPC request	request is sent to the server as specially-formatted HTTP POST requestXML-RPC response is encoded in the HTTP response
Ruby library for making SOAP calls	require 'soap/rpc/driver'
Ruby class for creating SOAP server	SOAP::StandaloneServer
Ruby class for parsing WSDL files and providing interface methods based on them for SOAP services	SOAP::WSDLDriverFactory located in 'soap/wsdIDriver'

Ruby library for sharing data structure between distributed processes	Rinda - creates a TupleSpace structure require 'rinda/tuplespace'
Ruby Rinda methods for writing / reading a variable into the TupleSpace	TupleSpace#write TupleSpace#read
Ruby Rinda method for reading and removing a variable from TupleSpace	TupleSpace#take
Ruby Rinda class for allowing Rinda machines to discover DRb services without hardcoding addresses on local network	RingServer
Category: Testing & Debugging - (10 questions)	
How can you pass in global boolean variables when running Ruby scripts	--var_name
Ruby command to rerun code block after handling an error in rescue block	retry
Ruby method to look at Ruby interpreter's current call stack	Kernel#caller
Ruby unit testing framework	Test::Unit require 'test/unit'
When creating a unit test in Ruby what class do you subclass from	class MyTest < Test::Unit::TestCase
Ruby command line switch to print out test names as they are run when doing unit tests	--verbose
In what order does Test::Unit run tests in Ruby	alphabetical order
Ruby ZenTest syntax for generating test stubs from code	zetest file.rb > test_file.rb
Ruby ZenTest syntax for generating stubs of new code added since tests created	zetest file.rb test_file.rb > test_file2.rb
Ruby syntax for running code with built in profiler	ruby -rprofile file.rb
Category: Rake - (7 questions)	
How do you set up rake tasks for running tests	require 'rake/testtask' create a new Rake::TestTask
When creating Ruby rake testing task with Rake::TestTask how do you specify files to run	.libs = ['directories'].pattern = "glob pattern".test_files = [array of specific files]
How do you include RDoc tasks in rake files	require 'rake/rdoctask'Rake::RDocTask.new('rdoc') do t

How to include cleanup tasks in Ruby rake file	<code>require 'rake/clean'</code> <code>CLOBBER.include('pdf', 'doc')</code> <code>CLEAN.include('.my_stuff')</code>
Ruby cleanup includes clean and clobber, what is the difference	clean removes files that need to be recreated when project changes clobber returns source tree to pristine state
Ruby syntax for doing gem building tasks in rake file	<code>require 'rake/gempackagetask'</code> create a <code>GEM::Specification</code> that describes project Feed it to the <code>Rake::GemPackageTask</code>
Ruby rake syntax for running processes in parallel	Define a task with <code>multitask</code> instead of <code>task</code> Each prerequisite is run in separate thread
Category: Multitasking - (25 questions)	
Ruby: Basic way to spawn another daemon to run code while continuing with original code	<code>Kernel#fork</code>
Gem needed to do a Windows service in Ruby	<code>win32-service</code>
Ruby way of running 2 or more pieces of code in parallel	<code>Thread.new do.....end</code> The block passed in will be run in a different thread.
What happens in Ruby when main code reaches end while other threads are running	All other threads will die prematurely
How can you get main code to wait on a thread in Ruby	<code>Thread#join</code>
Ruby thread method to stop thread running immediately (puts it in indeterminate state)	<code>Thread#terminate</code>
Ruby method to open a call on external program and be able to access standard input, output and error	<code>open3</code> library with <code>popen3</code> method
Ruby Thread method to return list of all living threads	<code>Thread#list</code>
Ruby Thread method to return the main program thread	<code>Thread#main</code>
Ruby Thread method to return identity of thread running the code	<code>Thread#current</code>
Ruby Thread method to kill a thread object	<code>Thread.kill(thread_var)</code>
Ruby Thread method to exit the current thread	<code>Thread#exit</code>

Ruby Thread method to pass control from main thread to subthread	Thread#pass
Ruby Thread instance method to stop current thread	thread_var.stop
Ruby Thread methods that will determine if a thread is alive or in a stopped state	.alive? .stopped?
Ruby Thread method to determine the status of a thread	.status
Ruby Thread method to determine / change priority of thread	priority
2 Ruby Thread methods to awaken a stopped thread	.run.awaken
What is the group that all Ruby threads belong to by default	Default
Ruby method for creating a new thread group	ThreadGroup.new
Ruby ThreadGroup method for adding another thread to the group	.add
Ruby Thread syntax for telling program to not schedule other threads while code is running	Thread.critical = true codeThread.critical = false
Ruby Mutex syntax for locking / unlocking resources	@mutex = Mutex.new @mutex.lock.....@mutex.unlock
Ruby Mutex method for testing if another process has a lock and returning false instead of waiting	.try_lock
Ruby Mutex method for synchronizing over a code block	@mutex.synchronize do....end
Category: User Interface - (3 questions)	
What is wxRuby library used for	cross-platform with native widgets for doing user interface
Ruby: How can you tell if user is connected to a script while running	STDIN.tty?
Basic GUI toolkit that comes with most Ruby installation	TK library
Category: Extending with Other Languages - (4 questions)	

How do get c code to run within Ruby that you wrote yourself	Compile the C code with extconf.rb and require it in Ruby program like it is a Ruby library Must have Ruby header files to include in the C program.
How can you use a C library in Ruby, without writing any C code to bridge	use SWIG to generate a C extension for you
Gem that allows you to include inline C code in Ruby	rubyinline gem
How can you run Java code from within Ruby	use JRuby which provides an alternative implementation of Ruby language that runs atop a Java Virtual Machine
Category: Regular Expressions - (3 questions)	
Ruby: How can you compile a string into a regular expression object	Regexp.compile(string)
Ruby regular expression method that escapes all special characters in a string	Regex.escape
Ruby regexp syntax to nest character classes in regular expression	&&[a-z&&[^aeou]]
Category: Internationalization - (6 questions)	
Ruby function to return the number of codepoints in a string versus bytes	jlength
Ruby function that detects if string has any multibyte characters in it	mbchar?
Ruby string iterator that iterates over each codepoint (not byte)	each_char
Ruby string methods that converts a string into/from an array of codepoints (utf-8)	"string".unpack('U*') must pass in the 'U*' directive [...].pack('U*')
Define: internationalization term - message catalog	collection of messages in a specific language
Ruby library for handling message catalogs (for internationalization)	Ruby-GetText-Package require 'gettext'
Category: Symbols - (2 questions)	
Ruby functions to convert from symbol to string and back	to_str to_sym
What is this Ruby syntax: list = flashcards.map(&:capitalize)	it runs .capitalize on every value passed in during iteration
Category: Range - (1 questions)	

Ruby range method that reports if end point of range is excluded (when formed with ... syntax)	exclude_end?
Category: Enumerables - (3 questions)	
Ruby Enumerable iterator for iterating over n elements at a time	each_slice
Ruby Enumerator iterator that iterates over a sliding window of n elements	each_cons
Ruby library for using external iterators instead of block iterators, with methods such as .next	generator library
Category: Sys Admin - (12 questions)	
Ruby: difference between exec and system calls	exec replaces current process with program that it runs system returns to current process after program runs
Ruby way of running external program and capturing command output	use backtick `command` or %x(command)
Ruby syntax for running another process in parallel (not in threads)	fork do....end
2 ways to wait for another process to finish	Process.wait #returns pid Process.wait2 #returns pid, exit status
2 ways to wait for a specific child process to finish in Ruby	waitpidwaitpid2
Ruby syntax for killing an external process	Process.kill(signal, pid)
Ruby syntax for setting up handlers for Unix signals	Kernel.trap(#) {code}
Most common Ruby command line parser library	getoptlong
Ruby base library for doing common shell programming tasks	Shell
What basic object does Ruby shell class return and what does it allow you to do	Filter class understands I/O redirection so commands can be piped and read from like Unix shell
Ruby library that runs through all environment variables and loads them as global variables	importenv
Ruby global variable that gives string for platform code is running on	RUBY_PLATFORM

Category: Profiling - (3 questions)

Ruby - how to tell profiler to start tracking

Profiler__::start_profile

Ruby - how to get profiler to stop tracking

Profiler__:stop_tracking

Ruby - how to get profiler to print out collected stats to screen

Profiler__::print_profile(\$stderr)