

SCC++: Predicting the Programming Language of Questions and Snippets of StackOverflow

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<i>Programming Language</i>	<i>Top Features</i>
JavaScript	ajax, array, asp, box, browser, button, class, code, content, css, div, document, dom, element, error, event, example, file, firefox, form, function, help, html, image, input, javascript, jquery, json, line, link, list, method, object, page, problem, question, script, server, solution, string, table, tag, text, time, url, user, value, way, web, window
SQL	access, case, clause, code, column, count, database, date, datum, error, example, field, function, group, help, index, insert, join, key, list, mysql, number, oracle, order, performance, problem, procedure, pron, query, question, record, result, row, select, server, set, solution, sql, statement, string, syntax, table, time, type, update, user, value, view, way, would
Java	app, application, array, case, class, client, code, database, eclipse, error, example, exception, file, hibernate, instance, interface, jar, java, jsp, line, list, method, number, object, output, page, problem, program, project, question, server, service, servlet, solution, source, spring, string, table, test, text, thread, time, type, user, value, version, way, web, window, xml
C#	app, application, array, asp, case, class, code, control, custom, database, edit, error, event, example, exception, file, form, function, instance, interface, line, linq, list, method, net, object, page, problem, project, property, query, question, reference, server, service, solution, sql, string, table, test, text, thread, time, type, user, value, way, web, window, xml
Python	app, application, case, class, code, command, database, dictionary, directory, django, edit, error, example, field, file, form, function, help, html, instance, library, line, list, loop, method, model, module, number, object, output, page, problem, process, program, py, python, question, script, server, solution, string, table, test, text, time, type, user, value, way, window

Table 1: The top 50 features for code snippets

<i>Programming Language</i>	<i>Top Features</i>
C++	application, array, base, boost, case, char, class, code, compiler, const, constructor, cpp, dll, edit, error, example, file, function, header, int, library, line, list, map, member, memory, method, number, object, operator, output, pointer, problem, program, project, question, reference, size, solution, std, string, template, thread, time, type, value, variable, vector, way, window
C	address, application, array, bit, buffer, case, char, character, code, command, compiler, edit, error, example, file, function, gcc, header, help, input, int, integer, library, line, linux, list, loop, malloc, memory, number, output, pointer, problem, process, program, question, server, size, source, string, struct, structure, thread, time, type, user, value, variable, way, window
PHP	application, array, class, code, content, database, date, error, example, field, file, form, function, help, html, image, index, input, line, method, mysql, number, object, output, page, php, post, problem, query, question, regex, request, result, script, server, session, site, string, table, text, time, type, url, user, value, variable, way, web, xml, zend
Ruby	activerecord, app, application, array, block, class, code, command, controller, database, error, example, file, form, gem, hash, help, html, instance, lib, line, list, method, model, module, number, object, output, page, post, problem, question, rail, rake, rb, ruby, script, server, string, table, test, text, time, user, value, variable, version, view, way, xml

Table 2: The top 50 features for code snippets

<i>Programming Language</i>	<i>Top Features</i>
Swift	app, apple, application, array, beta, button, cell, class, code, compiler, controller, custom, dictionary, error, example, file, function, help, image, init, int, ios, issue, json, line, method, object, objective, problem, project, property, protocol, question, screen, self, storyboard, string, swift, table, tableview, text, time, type, user, value, variable, view, viewcontroller, way, xcode
Objective-C	app, application, array, button, cell, class, cocoa, code, controller, core, custom, datum, delegate, error, example, file, function, help, image, instance, interface, iphone, line, memory, method, NSMutableArray, number, object, objective, problem, program, project, property, question, screen, self, string, table, text, time, type, UITableView, UIView, user, value, variable, view, way, window, xcode
Vb.Net	app, application, array, asp, button, class, code, column, control, database, error, event, example, exception, file, form, function, help, line, linq, list, message, method, net, object, page, problem, program, project, property, query, question, row, server, service, sql, string, table, text, textbox, time, type, user, value, vb, visual, way, web, window, xml
Perl	array, case, cgi, class, code, command, cpan, datum, directory, error, example, expression, file, function, hash, help, html, input, line, list, loop, method, module, number, object, output, page, perl, problem, process, program, question, regex, result, script, server, solution, string, subroutine, test, text, time, use, user, value, variable, version, way, window, xml

Table 3: The top 50 features for code snippets

<i>Programming Language</i>	<i>Top Features</i>
Bash	awk, bash, bin, cat, cd, com, command, date, dev, directory, do, done, echo, else, exit, fi, file, find, foo, for, grep, home, if, in, is, line, log, ls, name, no, not, of, path, print, read, sed, sh, test, the, then, this, tmp, to, txt, user, usr, var, while
CSS	align, background, body, border, bottom, class, color, content, css, display, div, float, font, function, height, hover, href, html, http, id, images, img, left, li, margin, menu, none, padding, png, position, repeat, right, size, solid, span, src, style, td, text, the, this, title, top, tr, type, ul, url, width
Scala	actor, application, array, case, class, code, collection, compiler, constructor, error, example, file, function, idea, instance, int, java, json, library, lift, line, list, map, match, message, method, object, option, order, parameter, pattern, play, problem, project, question, result, sbt, scala, solution, string, test, time, trait, type, user, val, value, version, way, xml
HTML	align, body, border, br, button, class, color, com, content, data, div, document, font, for, form, function, head, height, href, html, http, id, if, img, input, javascript, label, left, name, option, script, select, size, span, src, style, table, td, text, the, this, title, to, top, tr, type, ul, value, var, width

Table 4: The top 50 features for code snippets

<i>Programming Language</i>	<i>Top Features</i>
Lua	array, attempt, button, case, class, code, command, corona, error, event, example, file, function, game, help, image, index, input, issue, key, line, list, loop, lua, method, module, number, object, output, path, pattern, player, problem, program, question, result, scene, screen, script, sdk, server, string, table, text, time, torch, user, value, variable, way
Haskell	cabal, case, class, code, datum, definition, element, error, example, expression, file, function, ghc, ghci, haskell, help, hs, idea, implementation, input, instance, int, library, line, list, map, memory, module, monad, number, order, output, package, pattern, point, problem, program, question, result, solution, state, string, test, text, time, tree, type, value, version, way
Markdown	body, class, code, com, content, data, directory, div, end, file, for, function, header, hello, here, html, http, id, if, in, input, is, item, js, li, line, list, markdown, md, name, new, no, of, or, page, pandoc, png, post, return, script, span, src, such, test, text, the, this, title, to, true
R	advance, axis, case, code, column, command, data, dataframe, dataset, date, datum, error, example, factor, file, format, frame, function, ggplot, graph, group, help, length, line, list, loop, matrix, model, number, object, order, output, package, plot, point, problem, question, result, row, script, series, set, solution, table, text, time, value, variable, vector, way

Table 5: The top 50 features for code snippets