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But courts should tread carefully, Mr. Ghappour said.

Judge Pym and any other court that reviews the Apple case will have to decide where along that spectrum computer code falls, if at all, while weighing the federal government's interests in punching through the iPhone's security.

But more traditional forms of expression, like political tracts or literature, enjoy greater protection.

Securities and Exchange Commission is free to compel financial disclosures.

Mr. Ghappour, said Ahmed Ghappour, a professor at UC Hastings College of the Law who specializes in security and technology.

Since the Bernstein decision, courts have had difficulty parsing the functional and expressive aspects of computer code, said Dan Burk, a professor at the University of California, Irvine, School of Law.

But the court emphasized that its decision was meant to be narrow: "We do not hold that all software is expressive. Much of it surely is not," wrote Judge Betty Binns Fletcher.

The San Francisco-based Ninth Circuit held that the program's source code--the instructions written by computer programmers in readable language--was more than just functional, it was also a form of "scientific expression" that the government couldn't restrain.

In 1990, mathematician Daniel J. Bernstein developed an encryption method that he dubbed "Snuffle" and created computer programs to execute it. When he sought to present his work overseas, the State Department declared Snuffle a "munition" under a federal export-control law that prohibits U.S. residents from sharing sensitive weapons technology with foreign parties.

Mr. Froomkin said Apple's strongest First Amendment argument concerns the signature.

"It's not just that they are being forced to write code that they don't like," he said. "They are also being forced to cryptographically sign it, which is an assertion about their belief about what it is."

Other experts said the court could take a broader view, concluding that the software itself--not just the signature--is protected speech. The Ninth U.S. Circuit Court of Appeals, which would hear any appeal from Apple, held that

But the issue could turn on whether a judge sees the programming as predominantly "expressive" conduct like writing a book or singing a song--which receive a high-level of protection--or merely functional, like a machine.

"If you were Apple, you would need to argue that computer code is a creative endeavor in the same way that writing a sonnet is a creative endeavor," said Derek Bambauer, a law professor at the University of Arizona. Mr. Bambauer said Apple faces a steep climb in doing so because "a lot of [programming] is directed at just being functional."

The technical aspects of the case could have a strong bearing on how the judge views the question, legal experts said.

Federal investigators could break into Mr. Farook's phone by cycling through all the possible pass codes until they hit upon the right one--a process that would take a computer a matter of hours, experts say--but the iPhone is configured to lock itself down after too many wrong guesses.

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The federal government's workaround is for Apple to disable the lockdown feature with a made-to-order software update. But the iPhone will recognize only an update bearing Apple's cryptographic signature, a secret key that lets a phone know that the incoming code can be trusted.

But an Apple brief filed Thursday stakes out several other legal arguments that the company could raise on appeal, including that computer code is speech under the First Amendment. Compelling the company to write code violates its constitutional rights, Apple argues.

A court considering the First Amendment implications will likely face a series of questions: When is code speech? If it is, what kind of speech is it? And can the government regulate it?

On the first question, A. Michael Froomkin, a law professor at the University of Miami, said courts generally have held that computer code can be considered "speech" under the First Amendment.

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If U.S. Magistrate Judge Sheri Pym determines that the iPhone software update is indeed "speech," and therefore protected by the First Amendment, she must then move to a separate question of how much protection that speech deserves, said Ahmed Ghappour, a professor at UC Hastings College of the Law who specializes in security and technology.

The government is free to compel companies to speak in certain contexts. The Food and Drug Administration, for example, can mandate companies to add nutrition and warning labels to their packaging and advertisements. The Securities and Exchange Commission is free to compel financial disclosures.

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