EXHIBIT 1

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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

MATTHEW CAMPBELL and MICHAEL HURLEY, on behalf of themselves and all others similarly situated,

Plaintiffs,

v.

FACEBOOK, INC.,

Defendant.

Case No. C 13-05996 PJH (SK)

PLAINTIFFS' MOTION TO COMPEL SOURCE CODE

Date: Telephonic Hearing to be set by Court
Time: To be Set by Court
Judge: Hon. Phyllis J. Hamilton
Place: Courtroom 3, 3rd Floor

NOTICE OF MOTION AND MOTION

TO ALL PARTIES AND THEIR COUNSEL OF RECORD:

PLEASE TAKE NOTICE that pursuant to this Court's Order dated June 30, 2016 (Dkt. 203), the undersigned Plaintiffs will and hereby do move the Court for an order compelling Defendant Facebook, Inc. to produce relevant source code for the entire class period in this litigation. This motion is based upon this Notice of Motion; the accompanying Memorandum of Points and Authorities; the Declaration of David T. Rudolph filed herewith; the argument of counsel, if requested; and such other matters as the Court may consider.

STATEMENT OF ISSUES TO BE DECIDED

Whether, consistent with the requirements of Federal Rule of Civil Procedure 26(b), Defendant Facebook, Inc. should be compelled to produce relevant source code for the entire class period in this litigation, by supplementing its current source code production, which ends in December 2012, through the full class period, ending May 18, 2016.

I. INTRODUCTION

This motion is one of three contemporaneously-filed motions addressing three discovery disputes to be resolved by this Court pursuant to the June 30, 2016 Order. Dkt. 203. Through all three motions, Plaintiffs seek discovery squarely within the scope of this Court's Class Certification Order (Dkt. 192) and the Second Amended Complaint ("SAC," Dkt. 196). Specifically, the discovery sought relates to Facebook's continued interception of Private Message URL content for the following purposes, identified by the Court in the Class Certification Order and alleged in the SAC: (1) generation, redirection and use of EntShares and EntGlobalShares and related derivative data; (2) generation of recommendations; and (3) making Private Message content available to third parties.[1] Plaintiffs require the discovery sought through these motions for two purposes: first, to investigate Facebook's ongoing conduct with respect to the three challenged practices during the full class period; and second, to evaluate Facebook's representations that certain challenged practices have ceased. Plaintiffs seek nothing more than the properly proportional discovery required for these purposes pursuant to Fed. R. Civ. P. 26(b), and have narrowly tailored their requests accordingly.

Facebook has repeatedly asserted that *certain*, but not *all*, of the practices identified in the Class Certification Order and the SAC have ceased. Facebook does not deny that it continues to create EntShare and EntGlobalShare objects or that it continues to log URLs in Private Message content for subsequent use, but has provided virtually no discovery at all into its ongoing uses of the data it derives from these ongoing interceptions. As this court determined in the Class Certification Order, Facebook's creation and use of EntShare and EntGlobalShare objects and logging of private message content is at the core of Plaintiffs' allegations.[2] Plaintiffs require source code, configuration tables, and technical documentation for the full class period to determine the technical aspects of Facebook's ongoing interception and redirection of Private Message URL content up through the date of class certification.

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[1] Dkt. 192 (Class Certification Order), at 3-6.

[2] *See* Dkt. 192, at 4 (discussing the role of EntShares and EntGlobalShares in Plaintiffs' allegations); *see also* SAC, ¶¶ 44-55 (alleging Facebook's creation and used of EntShares and EntGlobalShares to stockpile and use intercepted Private Message content).

Facebook's assertions that certain practices challenged in the SAC have ceased provide no basis to deny the core proportional discovery Plaintiffs seek. ***First,*** Facebook has *admitted* it continues to intercept and log Private Message content, but has consistently refused to provide virtually any document discovery (and no source code discovery at all) related to these interceptions past December 2013. There can be no good-faith objection to providing discovery into Facebook's technical implementation of these ongoing interceptions and its subsequent use and redirection of users' private data gleaned from these interceptions. ***Second***, evidence that has come to light *after Plaintiffs filed their Second Amended Complaint* regarding the practices alleged in the SAC demonstrates that Facebook continues to make Private Message content available to third parties in ways that have not been disclosed to—let alone consented to by—users. Plaintiffs require the requested discovery to understand the scope and functioning of this manifestation of Facebook's ongoing interception and redirection of Private Message content. ***Third***, as Facebook's own recent filings and admissions demonstrate, the Court cannot take at face value Facebook's representations regarding when certain practices may or may not have "ceased," as those representations have subsequently proven to be false by Facebook's own technical discovery. The documentary evidence underlying the claims here must be produced to evaluate the veracity of Facebook's representations, and that is the evidence Plaintiffs seek through these motions.

As discussed in prior pleadings, Facebook has engaged in a non-stop, concerted effort to stonewall discovery at every turn, including an outright refusal to engage in the court-ordered joint discovery briefing process.[3] As described in in the accompanying motions, much of the discovery Plaintiffs currently seek is discovery Facebook should have already produced *months ago* in response to Plaintiffs' *initial* discovery requests. Through these motions, Plaintiffs seek to rectify Facebook's prior discovery gamesmanship, and also seek properly constrained and proportional discovery for the class period, as expanded in the Court's order, to investigate the extent of Facebook's ongoing conduct as alleged in the SAC.

[3] *See, e.g,* Dkt. 186; 187 (describing Facebook's refusal to engage in the court-ordered joint-letter process and refusal to produce configuration tables that it subsequently relied on in opposition to class certification).

II. ARGUMENT

Plaintiffs respectfully request that the Court compel Facebook to produce relevant source code for the entire class period. Because Facebook—after initially refusing to do so—already has produced the relevant source code for the September 2009 to December 2012 timeframe, Plaintiffs simply request that the Court order Facebook to update its current source code production to cover the remainder of the class period, *i.e.*, January 2013 to May 18, 2016. This update is critical to Plaintiffs' obligation to protect the interests of the entire Class, to prove Facebook's liability, and to fashion the appropriate prospective, injunctive relief.

A. Plaintiffs' Source Code Request is Confined to the Scope of the Issues as Defined in this Court's Orders and the Second Amended Complaint.

Plaintiffs seek nothing more than an update of the source code Facebook already agreed to produce, and has admitted is relevant to Plaintiffs' claims.[4] The Court has determined that Plaintiffs allege the following three practices by Facebook: (1) "Facebook scans the users' messages, and when a URL was included, it would increase the "Like" counter for that URL;" (2) "Facebook scans users' messages, and when a URL is included, it uses that data to generate recommendations," and (3) "Facebook scans the messages, and when a URL is included, it shares that data with third parties so that they can generate targeted recommendations." Dkt. 192, at 3-4. The Court held that practices (1) and (2) had been alleged in the Complaint, but that (3) had not, and ordered Plaintiffs to amend the Complaint accordingly, which Plaintiffs did (Dkt. 196).

As articulated both in the Class Certification Order and the SAC, Plaintiffs' review of Facebook's source code for the September 2009 to December 2012 timeframe revealed that Facebook implemented these practices using data structures called "EntShares" and "EntGlobalShares."[5] By intercepting Private Messages while in transit, Facebook uses these data

[4] Declaration of David T. Rudolph ("Rudolph Decl."), Ex. 2 (June 24, 2015 email from defense counsel) ("Per our discussions, and subject to the entry of an amended protective order, we are amenable to making the relevant source code available during the period discussed in the Himel declaration (September 2009 to December 2012)."). Unless otherwise specified, all Exhibits cited herein are to the Rudolph Declaration.

[5] *See* Dkt. 192, at 4 (discussing the role of EntShares and EntGlobalShares in Plaintiffs' allegations); SAC at ¶¶ 44-55 (alleging Facebook's creation and used of EntShares and EntGlobalShares to stockpile and use intercepted Private Message content).

structures to redirect Message content for multiple uses unrelated to the transmission of the message. It is undisputed that Facebook continues to create and exploit EntShares and EntGlobalShares, and they remain available to be exploited through future uses in perpetuity.[6]

As this Court noted, the proper scope of Plaintiffs' discovery is set by the Court's rulings in the Class Certification Order, and the allegations of the SAC. Accordingly, Plaintiffs are entitled to discovery related to Facebook's scanning of Private Messages for purposes of acquiring Private Message URL content including, but not limited to the creation of, and relation between, EntShares and EntGlobalshares. This discovery is related to the manner in which Facebook catalogs and stores intercepted Private Message URL content, as well as to how Facebook redirects and uses that content (and the data objects created therefrom).

The code that Facebook has already produced is commensurate with these areas of inquiry, and Plaintiffs seek nothing more than to have that code updated to include code from the entire class period. Specifically, Facebook agreed to, and appears to have produced for the 2009-2012 timeframe, "all source code related to the private message function from creation through end storage, including any scanning or acquisition of private message content and any data structures that connect or associate users to messages or message content, and messages to attachments or URLs."[7] Given that Facebook has already agreed that this is the relevant scope of discovery, Plaintiffs seek nothing more than for Facebook to update the current code production to extend through the end of the class period. Given the centrality of the source code to this case and the limited scope of code that Plaintiffs request, production of this source code is proportional to the needs of the case pursuant to Fed. R. Civ. P. 26(b)(1). The parties have already implemented extensive source code protocols, and Facebook need only deposit updated code on the existing review computer. Facebook has ample resources to do so, and Plaintiffs have no other means of accessing this information, and thus the benefit of this discovery outweighs the relative burden or expense, pursuant to Fed. R. Civ. P. 26(b)(2).

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[6] *See, e.g.*, Dkt. 184-11 (Jan. 14, 2016 Himel Decl.), ¶¶ 10-19.

[7] Specifically, Facebook agreed to produce "all source code articulated in, and related to, Request For Production Nos. 4-11, 13-14, 16-17 & 19." *See* Ex. 2. These Requests, and Defendant's responses, are attached as Exs. 3-4.

B. The Source Code for the Entire Class Period Must Be Produced.

The source code for the entire class period must be produced in order for Plaintiffs to understand and analyze the full scope of Facebook's interception and use of URLs in Private Messages during the entire class period . Contrary to Facebook's representations, these practices have not ceased and instead appear to continue to the present day.

1. Facebook's Ongoing Use of Private Message Content to Generate EntShares and EntGlobalShares

As Plaintiffs allege in the SAC, Facebook continues to intercept Private Message content via EntShares and EntGlobalShares.[8] Consistent with these detailed allegations and the Court's Class Certification Order, Plaintiffs require the source code to understand Facebook's ongoing generation and use of EntShare and EntGlobalShare objects for the purposes of generating recommendations, or for the purposes of providing third parties with information concerning users' Private Message content, during the entire class period.

Facebook does not deny that it continues to generate EntShares and EntGlobalShares.[9] Nor does Facebook deny that discovery into these objects for the entire class period is appropriate.[10] Moreover, the Class is specified as users from whose Private Message content Facebook has generated EntShares.[11] There can be no legitimate dispute that the source code related to the generation of EntShares from URLs intercepted in Private Messages (and their connection to EntGlobalShares) must be produced for the entire class period. Further document discovery regarding EntShares and EntGlobalShares, while also necessary, is not a substitute for

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[8] *See* SAC, ¶¶ 45-55.

[9] Facebook has represented that Facebook no longer increments the "Like" counter corresponding to a URL intercepted from a Private Message. However, Facebook does not deny that it continues to intercept URLs and create, catalog and tally the EntShare objects that it used as the basis for that incrementing; rather it only removed the *public-facing* proof of that interception, cataloging and tallying once it was revealed in the press.

[10] *See* Plaintiffs' concurrently-filed Motion to Compel Production of Documents. Indeed, in its proposals for document searches, Facebook agreed to search for documents containing those terms for the entire class period.

[11] Dkt. 192, at 10 ("All natural-person Facebook users located within the United States who have sent, or received from a Facebook user, private messages that included URLs in their content (and from which Facebook generated a URL attachment), from within two years before the filing of this action up through the date of the certification of the class.")

examination of Facebook's source code. First, Facebook's own chief witness, Engineering Director Alex Himel, testified that no "accurate, up-to-date" documents exist that explain the functionality of these two critical data structures.[12] Second, even to the extent that Facebook has agreed to produce documents related EntShares and EntGlobalShares, it has only agreed to do so with excessive and inappropriate restrictions unlikely to capture the full scope of Facebook's use of these objects, a topic addressed in Plaintiffs' concurrently-filed motion. Additionally, Facebook's offer, made during meet and confers, to "stipulate" as to Facebook's current functionality with respect to *generating* EntShares and EntGlobalShares, does not address Facebook's ongoing uses or redirection of them. Plaintiffs have repeatedly asked for, but have not received, an explanation of how Facebook *continues* to use and redirect EntShares and EntGlobalShares for purposes beyond Private Message delivery. That Facebook may be willing to stipulate as to its ongoing *generation* of these objects during the remainder of the class period in no way relieves it of its duty to produce discovery going to its ongoing uses and redirection.

2. Facebook's Ongoing Use of Private Message Content To Generate Recommendations

The Court noted that Plaintiffs allege that "Facebook scans users' messages, and when a URL is included, it uses that data to generate recommendations."[13] As explained in the class certification briefing, Plaintiffs determined, and Facebook admitted, that Facebook intercepts URLs in Private Messages by logging them using various source code devices that redirect the content for use in recommendations.[14] As an example, Plaintiffs, through review of Facebook's code, determined that certain source code devices intercepted and deposited Private Message content into a table referred to as "[redacted]"[15] Plaintiffs' expert also determined that identical

[12] Ex. 5 (Himel Dep.), at 255:5-10 ("Q. Does Facebook maintain any documents that explain the functionality of EntShare or EntGlobalShare? A. I'm not aware of any accurate, up-to-date living documents about the EntShare and EntGlobalShare functionality.")

[13] Dkt. 192, at 3.

[14] Dkt. 199-1 (Mot. For Class Cert.), at 5 (arguing Facebook uses data logged from Private Messages to fuel recommendations, including data from the [redacted] table); Dkt. 184-11 (Jan. 14, 2016 Himel Decl.), ¶ 44 (admitting [redacted] informed "Recommendations Feed"); Dkt. 184-17 (Golbeck Rebuttal Report), ¶¶ 28-37 (discussing [redacted] and scribeh_share_stats logging); Dkt. 184-21 (Feb. 26, 2016 Himel Decl.), ¶¶ 7-9 (same).

[15] *See* Dkt. 199-2 (Golbeck Report), ¶ 44-54.

logging appears to be *ongoing*, as of the final date of Facebook's source code production (December 2012), through a logging function referred to as "scribeh_share_stats."[16] While Facebook was at pains to argue (as it turns out, incorrectly) that the "[redacted]" was deleted prior to the class period, Facebook has never argued that the "scribeh_share_stats" functionality did not continue to log Private Message content and use it for purposes unrelated to Message delivery. Plaintiffs owe a duty to the certified Class to determine the extent of Facebook's ongoing logging of Private Message content in order to effectuate full relief from Facebook's conduct for the Class by crafting appropriate injunctive relief.

Additionally, Facebook admits that its "Recommendations Feed plugin," which Plaintiffs identified as an example of one way in which Facebook used Private Message content to generate targeted recommendations for users, used Private Message content well after December 2012.[17] In fact, this system was only discontinued in June 2015, long after this lawsuit was filed.[18] Plaintiffs are entitled to understand the details and scope of the Recommendations Feed plugin's use of Private Message content through an examination of its source code.

3. Facebook's Ongoing Sharing Private Message Content with Third Parties

The Court further noted that Plaintiffs allege that "Facebook scans the messages, and when a URL is included, it shares that data with third parties so that they can generate targeted recommendations."[19] Contrary to Facebook's representations, Facebook's sharing of URLs in Private Messages with third parties appears to be ongoing. Shortly *after* Plaintiffs amended their complaint, a security researcher revealed one manifestation of this ongoing practice. As recently disclosed in a blog post by the researcher (a self-described "[e]thical hacker & bug bounty hunter"[20]), Facebook makes the *specific URLs shared in Private Messages freely available to any*

[16] Dkt. 184-17 (Golbeck Rebuttal Report), ¶¶ 28-37. As its name implies, scribeh_share_stats "writes" pertinent Private Message attributes to logs, acting like a giant vacuum within Facebook's system, sucking up immense volumes of Private Message data for future use. *See id.*, ¶¶ 12, 34.

[17] *See* Dkt. 184-13 (Fechete Decl.), ¶ 28.

[18] *Id.*, ¶ 10.

[19] Dkt. 192 (Cert. Order), at 4.

[20] *See* https://twitter.com/securinti (last visited August 1, 2016).

developer with access to the Facebook API.[21] The researcher was able to access URLs sent in Private Messages by implementing simple code that randomly generated ID numbers for Facebook EntShare and/or EntGlobalShare objects, which then revealed specific URLs that users had shared through Private Messages. The researcher was able to locate confidential user information sent through Private Messages, "allowing a total stranger to gain personal information about you."[22] The researcher was so surprised by this practice that he believed it was a bug, and reported it to Facebook.

Facebook ultimately admitted to this practice, *only, on June 8, 2016—the day after Plaintiffs filed the SAC*—but contended that, rather than a bug, Facebook's providing third-parties with access to URL content in Private Messages is "intentional."[23] This revelation provides further evidence supporting Plaintiffs' allegations of Facebook's ongoing practice of making Private Message content available to third parties.[24] This precise type of conduct is one that Plaintiffs seek to enjoin through their allegations and claims for relief in the SAC, and require up-to-date source code to investigate. Facebook never disclosed this practice through discovery, and analysis of Facebook's up-to-date source code is necessary to understand how this functionality operates, the scope of Facebook's ongoing sharing of users' Private Message content with third parties, and the appropriate injunctive relief associated with this practice.

C. Facebook's Selective Document Production and Self-Serving, Occasionally False Witness Testimony Cannot Substitute for Source Code Analysis.

Facebook initially asserted in this case that document production and employee testimony were a sufficient substitute for source code production. However, Facebook's own key witness

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[21] *See* Ex. 6 (*Why you shouldn't share links on Facebook*, Quartz (June 29, 2016)).

[22] *Id.* As the researcher explained: "In this small set of extracted URL's, I've already found some interesting info: **Names**: . . . **Location** or **language . . . Attachments or pictures from the [Facebook content delivery network]** . . . **Application or game data** . . **Secret links** or **hidden keys:** such as the editable Google Drive links or links to hidden pages, websites and beta environments . . . and these aren't mutually exclusive, some URLs includes multiple parameters types listed above in one single link thereby allowing a total stranger to gain personal information about you. Hello NSA?"

[23] *Id.*

[24] *See, e.g.*, SAC ¶¶ 45-49 (describing Facebook's practice of making Private Message content available to third-party developers through its APIs).

confirmed that the functionality at issue could only be understood through examination of the source code.[25] Facebook's suggestion that document production related to the functioning of EntShares and EntGlobalShares relieves it of the duty to produce further source code contradicts its own employees' sworn testimony that no "accurate, up-to-date" documents exist that explain these data structures' functionality.[26] Thus, consistent with Rule 26(b)(2), the requested source code is appropriate; it is neither cumulative nor duplicative, nor can this information be obtained from some other source.

Indeed, Facebook has previously resisted any further document production on the grounds that its source code is the fundamental evidence Plaintiffs require to prove their claims, obviating other forms of discovery. As the Court noted, Facebook's primary objection to producing further technical documentation in response to earlier motions to compel was that "'Facebook has in fact already produced the information that is relevant to Plaintiffs' claims' in the form of the source code, which demonstrates how Facebook scans users' messages . . . [it is Facebook's] position that it has already produced the source code and therefore does not need to produce anything more" (Dkt. 130 at 5, 15). In fact, virtually every Facebook witness has heavily relied on Facebook's source code to answer fundamental merits questions demonstrating, despite all posturing by Facebook, that source code analysis for the entire class period is necessary to understand the interception and use of Private Message content for the full class period.

Finally, as Facebook's own recent filings demonstrate,[27] the self-serving testimony of Facebook's employees (and related representations by counsel) as to which practices may have ceased cannot be taken at face value. After claiming in sworn declarations, deposition testimony, and representations to the Court that the "[redacted]" table in which Private Message content was logged for use in generating recommendations was deleted prior to the class period,[28] in the midst

[25] Dkt. 184-1 (June 1, 2015 Himel Decl.), *passim* (citing to specific lines of code to explain the functionality at issue).

[26] Ex. 5 (Himel Dep.), at 255:5-10 ("Q. Does Facebook maintain any documents that explain the functionality of EntShare or EntGlobalShare? A. I'm not aware of any accurate, up-to-date living documents about the EntShare and EntGlobalShare functionality.")

[27] Dkt. 185 (Errata); *see also* Dkt. 187 (Plaintiffs' Objections thereto).

[28] *See, e.g.*, Dkt. 183-12 (Goldberg Report), ¶¶ 9, 44, 56; Dkt. 178-4 (Defs.' Objection to Evid.), at 2:21-23; Dkt. 177 (Mar. 16, 2016 Hrg. Tr.), at 87:16-20; Dkt. 184-11 (Jan. 14, 2016 Himel

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of a dispute regarding the production of Facebook's configuration tables, Facebook admitted that, based upon "re-review" of the data Plaintiffs sought, that table had not been deleted prior to the class period. Contrary to Facebook's subsequent attempts to minimize its reliance on this claim,[29] it figured heavily in Facebook's class certification arguments.[30] Plaintiffs, and the trier of fact, are entitled to test Facebook's assertions through examination of Facebook's source code.

III. CONCLUSION

Facebook's source code has taken center stage in this case and it is inconceivable that the claims and defenses can be litigated, or that injunctive relief can be tailored, without detailed evidence of the code's functioning for the full class period; thus its production is both proportional and necessary in this case. Both experts relied heavily on Facebook's source code in rendering their opinions on the issues presented at class certification.[31] Facebook's employees repeatedly stated under oath that the best (or only) way to understand Facebook's systems is to examine the source code.[32] The Court,[33] the experts, and Facebook's witnesses have made clear that examining Facebook's source code is necessary to understand the claims and defenses at issue. Plaintiffs respectfully request that the Court compel Facebook to produce all relevant code from January 2013 to May 18, 2016.

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Decl.), ¶¶ 44-50; Dkt. 184-21 (Feb. 26, 2016 Himel Decl.), ¶¶ 7-9; Ex. 5 (Himel Dep.), at 203:10-18, 204:16-17.

[29] *See, e.g.*, Dkt. 191.

[30] *See* Dkt. 177, at 87:16-20 ("And they spent a lot of time on the share stats table. That was deleted in 2011 before the class period. So I don't even know why we're talking about it. It was deleted before. It had nothing to do with this case. It was deleted beforehand.").

[31] Dr. Golbeck analyzed Facebook's source code and identified three distinct types of code-based devices the intercept Private Message content: devices that "process[s]the attachment to create share objects," that "Lo[g] data about the private message share for later use," and that "Incremen[t] counters that track private message activities." Dkt. 199-2 (Golbeck Report), ¶ 55; Dkt. 183-12 (Goldberg Report), ¶¶ 33-42 (detailed analysis of code related to URL previews).

[32] *See, e.g.*, Ex. 5 (Himel Dep.), at 254:17-255:4; Ex. 7 (Himel Dep.), at 371:22-372:17; Ex. 9 (He Dep.), at 74:11-15; 165:20-23; 227:18-228:7; 251:2-9; Ex. 9 (Vernal Dep.), at 128:8-18; Dkt. 140-1 (Oct. 6, 2015 Harrison Decl.), at 6 ("[T]he comprehensive record of Facebook functions that used any given Object or Association type at any given time is Facebook's source code.").

[33] *See, e.g.*, Dkt. 43 (Order on Mot. to Dismiss), at 12:21-28 ("The fact that Facebook can configure its code to scan message content for certain purposes, but not for others, leaves open the possibility that the challenged practice constitutes a separate 'interception.' Simply put, the application of the 'ordinary course of business' exception to this case *depends upon the details of Facebook's software code . . .*") *Id*. (emphasis added).

Dated: August 2, 2016

By: */s/ Michael W. Sobol*
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