



Aesthetic Impact Assessment of the restored heritage- Cut Minaret Mosque, Antalya, Turkey

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ABSTRACT

Kurkut mosque is one of the important historical buildings in Antalya Old Town, Kaleiçi and represents a special landmark for its cultural and architectural identity. In 1896 a great fire destroyed the mosque including the wooden 'külah' (spire) of its minaret. The lower parts of the minaret remained intact. Afterwards, the mosque had been called the 'Kesik Minare' Camii' (Cut Minaret Mosque). The Cut Minaret special form remained for many decades part of the identity of the old town. In 2017, a restoration project started to be prepared for the mosque and its minaret. Visual Impact Assessment is crucial in this regard in addition to Public Preference Analysis in order to understand the restoration projects on public acceptance. This research used Aesthetic Impact Assessment (AIA) to assess public appreciation of the aesthetic quality of the newly restored minaret of the Cut Minaret Mosque. A set of aesthetic principles was developed for this purpose. The aim was to provide insights on the cultural values of architectural conservation and restoration, and their role in shaping the identity of a continuously changing society. It has been found that the aesthetics of the minaret after restoration got around average public appreciation. This directs the attention of both the cultural and religious authorities, and community organizations to pay better consideration for the public involvement and participation in such projects.

KEYWORDS:

Antalya, Kaleiçi, restoration, aesthetics, assessment

INTRODUCTION UNDERSTANDING THE MINARET IN MOSQUE ARCHITECTURE

For centuries, minarets have been continuing to function as visual landmarks in addition to being strong cultural and religious symbols of Moslem communities. This is in addition to being a reflection of the political and economic power of the elite and the governing bodies in Moslem countries [1]. They became a common element of the urban-scape of any Moslem city and of some non-Moslem cities around the world as well [2] (Roose, 2009). With the development of electricity and technology, loud speakers have been placed at the Şerefe and the muazzen calls the ezan from the prayer hall of the mosque. More recently, in many cities in Turkey and other Moslem countries the ezan is called from a central mosque which is connected

through Wi-Fi system to all mosques of the city, Figure 1.

Minarets have different styles with great differences across the world in terms of materials, height, and elements. It is beyond the scope of this research to give a full and detailed account for the architecture of the minaret and its elements but rather a brief review to help in understanding the aesthetics of the Cut Minaret under consideration. In terms of materials, minarets have been built of mud bricks, bricks, stone and wood. All these materials can be found in the same country. Certain materials are specific to certain areas according to environmental, technological, and cultural factors. Mud and mud brick construction is common in hot dry regions like the African Sahara. Stone construction is common in rocky and mountainous regions of Syria and Anatolia [3], Figure 2.

Minarets can be found in many heights from few meters, Figure 3 to several tens of meters, Figure 4. There is no special rule for the height of the minaret. Usually, building technology available and the size of the mosque play the important role in deciding upon the height of the minaret.

1. ELEMENTS OF THE MINARET

Culture Minarets developed through history preserving certain elements despite the differences in geographical locations, technological capabilities, and style [4]. As far as the minaret under consideration is Turkish, the general model of these elements used in this research is the Turkish minaret. These elements include from bottom up: the “temel” (footing), “kaide” (pulpit or base), “küp” (transitional form), “gövde” (body or shaft), “Şerefe” (balcony or gallery), “petek” (neck), “küllah” (spire), and “alem” (finial), Figure 5, [5], [6]. It is not intended here to go through all the details and variations of these elements through Turkey nor other parts of the world. A brief account of these elements is presented below.



Figure 1: karakuş mosque, Antalya, Turkey, with Central ezan antenna and loudspeakers on the minaret [Author].



Figure 2: Stone construction of Grand Omari Mosque, Gaza, Palestine. [Iwan Center for Heritage Architecture, Islamic University Gaza, Palestine].

1.1 The footing, base, transitional form and shaft

Minarets used to have square, cylindrical or multi-sided shafts. Although all of them can be found in the same country, special forms are specific to certain regions. Cylindrical forms are mainly dominant in Turkish and Ottoman minarets. Square forms spread in North African countries and Arabian Gulf countries, Figure 6. Spiral forms appeared in rare examples such as the Malwiya minaret of Samerra mosque in Iraq [7]. Octagonal and hexagonal forms appeared mainly in Egypt and Syria, Figures 2 and 3. The minaret can have a fluted shaft like that of the Yevli minaret of Sultan Alaaddin Keykubat mosque in Antalya, Figure 4. The shaft usually rests on a base that also has different forms. The square base is common for square shafts. For cylindrical, hexagonal or octagonal shafts the base is usually a square with a transitional element that transforms into the upper form of the shaft, Figure 4. The shaft sometimes, is one piece ending with the top part that is usually separated from the shaft with a gallery, Figure 7, [1]. In other examples the shaft is divided into two or three parts decreasing in diameter and separated by galleries, Figure 8. In other examples the square base can be big and high to support the huge volume of the shaft, Figure 9 or it extends with the square shaft before it transforms to other parts of octagonal and cylindrical forms on top of it, Figure 10. The base and the shaft of the minaret can be directly connected to the mass of the mosque, Figure 2 or it can be separate with its own mass and structure, Figure 4.

1.2 The gallery

The gallery is the space from where the Muazzen used to call for prayer. In some examples, it is a recess at the end of the shaft surrounding the top of the minaret, Figure 11. In other examples it is a balcony like structure that encircles the shaft at its end or before. Some minarets are built with one gallery, Figure 7 and others with 2 galleries or more, Figure 8. Projected galleries are usually built with ‘muqarnas’ (stalactite ornaments) type of structure giving a special ornamented decoration, Figure 12.

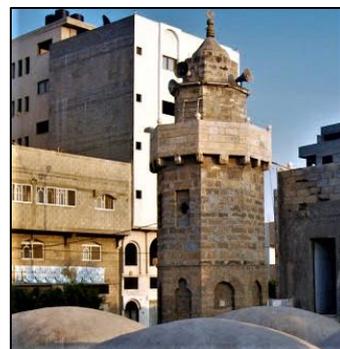


Figure 3: The short minaret of Ibn Marwan Mosque, Gaza, Palestine. [Iwan Center for Heritage Architecture, Islamic University Gaza, Palestine].



Figure 4: The long-fluted minaret, Yevli minare of Sultan Alaaddin Keykubat mosque, Antalya, Turkey [Author].



Figure 7: Minaret with one gallery, Tekeli Mehmet Paşa Mosque, Antalya, Turkey [Author].

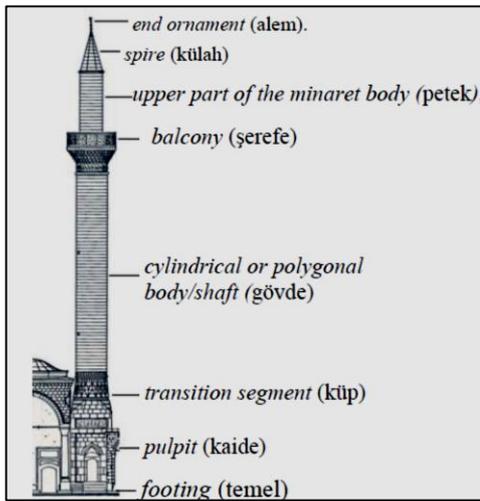


Figure 5: Main elements of the minaret [Dogangun et. al., 2017, p. 5].



Figure 8: Long minaret with three galleries, Süleymaniye Mosque, Istanbul, Turkey [Author].



Figure 6: The square shaft of Yateem mosque, Manama, Bahrain [Author].



Figure 9: Minaret at Alharam Mosque, Mekkah, Saudi Arabia [Author].



Figure 10: Minaret at Annabawi Mosque, Medina, Saudi Arabia [Author].

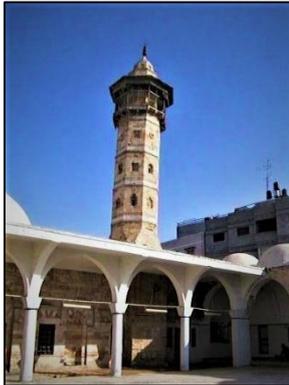


Figure 11: Gallery at the end of the shaft, Sayed Hashim Mosque, Gaza, Palestine [Iwan Center for Heritage Architecture, Islamic University Gaza, Palestine].



Figure 12: Decorated galleries, Eyüp Sultan Mosque, Istanbul, Turkey [Author]

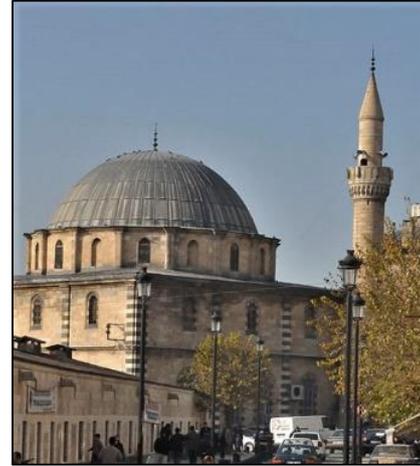


Figure 13: Upper parts of the minaret of Alaüddeve Mosque, Gaziantep, Turkey [Author].

1.3 The top of the minaret

The top of the minaret is the last upper part above the last gallery. It is usually composed of the 'petek' (neck), the 'küllah' (spire), and the 'alem' (finial), Figure 5. The spire is an extension of the shaft with the same materials and details but usually it is thinner. In the Turkish minaret, it is solid with only a door to the last gallery. Sometimes it has very few and very small openings. In other examples it is a small rotunda of few arches supporting the top head-gear and having a height allowing the exit of the muazzen to the gallery. The circular arcade is topped by a drum that holds the head-gear which is in this case a small stone dome over a smaller ring of arches. It is similar to the lantern of the church dome in Christian architecture, Figure 6. This form is called 'mabkhara' (censer) in Arab countries. In the Turkish minaret, the solid petek is topped by the küllah. It is a sharp wooden cone covered with metal, usually lead cladding. In certain examples the küllah can be built of stone, Figure 13. The last part is the alem which is usually composed of 1 to 3 metal spheres topped by a crescent, Figure 13.

2. KURKUT MOSQUE AND ITS MINARET

Kaleiçi is the beautiful old heart of Antalya, the costal Mediterranean city at the south of Turkey. The Cut Minaret Mosque has an important central location in Kaleiçi. It is close to several important landmarks such as Hadrian gate, Karaalioğlu Park, Cumhuriyet square, and Marina. The building was constructed as a church during the rule of the Byzantine Emperor Zeno at the end of 5th century AD. The church was named "Panaghia Church" and had a basilica plan that went through several changes and renovations until the end of the 15th century AD. The abandoned damaged building was converted to a mosque in 1502 by Prince Kurkut, son of Sultan Bayezid II. The mosque thence was called "Korkut Camii". A big fire caught the mosque 1896 and destroyed large parts of it including its dome and the wooden Küllah at the top of the minaret [8], Figure 14. The mosque was since then abandoned and it started to be called "Kesik Minare Camii" or Cut

Minaret Mosque. The remains of the mosque retained parts of its plan, Figure 15 which continued to be preserved until the start of the recent restoration work in 2019. In this year, Antalya Regional Directorate of Endowments contracted the Turkish company “Asir Proje” to conduct the restoration studies for the mosque including the repair work for the minaret.



Figure 14: The Cut Minaret Mosque in 2017 [Author].



Figure 15: Plan of the Cut Minaret Mosque showing the location of the minaret [Asir Proje]

3. ARCHITECTURE OF THE CUT MINARET

The minaret is located at the right side of the northern entrance, Figure 16 and it is directly connected to the mass of the entrance as it is shown in the plan of the mosque, Figure 15. The base is square in plan and rises 630 cm, little above the roof of the mosque entrance. Then the first part of the shaft above the base rises 255 cm in octagonal form. It is noticeable that the transformative triangular bevels [9] or trihedras [10] that transform the corners of the square into the octagonal shaft are missing. The octagonal shaft thence transforms into a cylindrical form by the use of 8 isosceles trapezoids that transforms the octagon into hexadecagon. This is a unique geometrical, structural and construction technique developed by Turkish architects in Anatolia, Figure 17. All these transformative geometries are built with bricks to form a resting foot strengthening the upper part of the minaret and to add to its aesthetics. The height of the transformative part is 182 cm. The stone circular part then starts with special portion that has a slight outward indentation and ends with a stone band. The

height of this part is 90 cm. The circular stone shaft then rises 420 cm up to another stone band of 10 cm height. After 25 cm, the special form of the şerefe rises 105 cm up and projects 65 cm outwards around the shaft. The muqarnas, of the şerefe has its own special style. It is a corbel like structure of beveled triangular prisms giving it a unique beautiful geometry, Figure 18. The parapet of the şerefe was destroyed in the fire. The petek rises 410 cm above the şerefe. The restoration project added the parapet to the şerefe. It is made of rectangular white marble panels with white marble frames. The külah with same height as the petek was afterwards added and the metal spheres and crescent alem are forming the last beautiful sacred part of the minaret, Figure 19. The overall length of the minaret from the street level is around 25 meters.

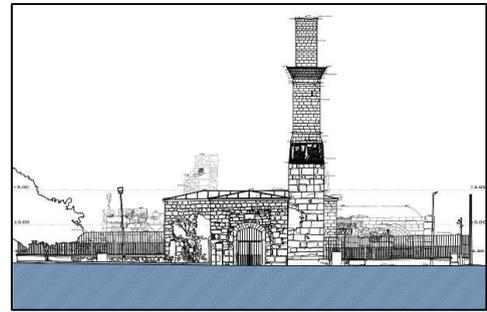


Figure 16: North elevation of Cut Minaret [Asir Proje].



Figure 17: The bricks transformative part of the minaret, Cut Minaret Mosque after restoration [Author].



Figure 18: The Cut Minaret Mosque after restoration [Author].



Figure 19: The Cut Minaret Mosque after restoration [https://www.aksam.com.tr/].

4. AESTHETIC ASSESSMENT

Aesthetics in visual arts is about the qualities of visual design of these objects that make them look beautiful and giving the viewer satisfaction and pleasure. Not only aesthetics is important in pure visual art works but it is much more important in architecture. The aesthetics of pure art objects can be experienced for some time but architecture creates spatial artworks the aesthetic of which is experienced for the life of a whole community. This is why there is always a need to consider elements and principles of aesthetic evaluation and assessment in the built environment to add the dimension of pleasurable satisfaction to the functions of human spaces [11]. This can be achieved by the well articulation of the visual elements and their variables which represent the form components of architecture and the built environment. Such an articulation or visual design in other words is the means by which buildings and spaces can be seen beautiful.

5. AESTHETIC ASSESSMENT PRINCIPLES

It has been agreed upon through the historical development of architecture that there are certain visual design principles which need to be followed in the creation of such satisfactorily pleasurable beauty in buildings [12]. These visual design or beauty design principles have comprised the tools learnt and used by architects for centuries. They are still and will continue to be the corner stone of architecture education. Uzunoglu 2012 [13] argues that there are 10 aesthetic principles in architecture that are important to be included in architectural education. They are unity, focal point, balance, contrast, rhythm, proportion, scale, hierarchy, emphasis, and variety.

At the same time, Vinchu et. al. 2017 [14] and Stankovic et. al. 2018 [12] provided another 2 sets of aesthetics principles that are responsible for the beauty of architectural creations, Table 1. The latter 2 sets have principles in common with Uzunoglu 2012 [13] like unity, balance, contrast, rhythm, proportion, hierarchy, and emphasis. The 3 sets are grouped together under group (I) of “aesthetic principles in architecture”.

6. AESTHETIC ASSESSMENT PRINCIPLES IN ISLAMIC ARCHITECTURE

Moving to the field of Islamic architecture shows that the quest of aesthetics is not different than its general framework. It is also about the satisfaction and

pleasure of experiencing beauty in the design of buildings. Foroozani 1991 [15] introduces a set of 15 principles of aesthetics in Islamic architecture. They have 9 principles in common with the group (I). These are centrality, repetition, equilibrium, contrast, rhythm, proportion, scale, symmetry, and variety. Abdulmir 2010 [16] went more specific to discuss the aesthetics principles of the minaret itself. She listed 12 principles 7 of which are in common with both Foroozani 1991 and group (1), Table 1. She added shade and light, control, texture and harmony that are not shared by the other sets. It is worth mentioning here that texture is usually considered an element of architectural form and not a principle of aesthetics. The list of the all the principles in all the 5 sets counts 27 which quite a larger number to be used for the assessment of public appreciation of the aesthetic of the restored Cut Minaret. A shorter list has been prepared from the principles shared at least by one set from group 1 and one set from group 2. This list includes 10 principles that comprise the Aesthetics Visual Indicators that would be used for the assessment of public appreciation of the restored Cut Minaret.

7. PUBLIC APPRECIATION OF THE RESTORATION OF THE RESTORED MINARET IN CUT MINARET MOSQUE

On 24th July 2019 Antalya Professional Chambers Coordination and the Chamber of Turkish Engineers and Architects (TMMOB) [17] organized a public gathering in front of the Cut Minaret Mosque. They were demonstrating against any change in the form of the cut minaret. They argued that the cut minaret should remain in its cut form because it has been part of the collective memory of the people of Antalya. Several generations have grown up under the shades of its special form. It also has been part of the very famous touristic image of the city. On the contrary, AKP governing political party view was presented by its Antalya deputy Mr. Atay Uslu in favor of the completion of the minaret in order to revive the heritage of the ancestor. The religious authority represented by the ‘Mufti’ (judge of Islamic affairs) of Antalya Mr. Osman Artan clarified that it is religiously preferred to complete the minaret in order to preserve the form of the mosque and to aid its function [18].

8. AESTHETIC IMPACT ASSESSMENT OF THE CUT MINARET RESTORATION ON ITS PUBLIC APPRECIATION

The above extracted list of Aesthetic principles was used in a Cross-sectional Survey conducted at one time to provide a simple and quick snapshot of the public views on the Cut Minaret [19]. A Likert questionnaire was used with a scale from 1 as the lowest evaluation to 5 as the highest evaluation, Table 2. Convenience Non-Probability Sampling was used in the survey where the questionnaire was distributed to the general public in the vicinity of the Cut Minaret where they can look at it and experience its aesthetics. The population for the questionnaire was the general public in the age of secondary school and above without any discrimination in age, gender, job, or

education. 82 sheets were filled. With percentage of error from 5% to 10%, confidence level 90% and the proportion 40%, this sample size represented a huge population [20].

9. RESULTS

The results of the survey are shown in Table 2 and Figure 20. The public showed a slightly positive attitude towards the general aesthetic values of the new form of the minaret with 5 out of the 8 principles got scores above “somehow agree” point. These principles are contrast, proportion, scale, symmetry, and variety. Repetition, balance and rhythm are very close to the “somehow agree” point. The results also show that the public had no clear preference of any of the principles.

10. CONCLUSION

Studies of Visual Impact Assessment and Public Preference Assessment of architectural conservation and restoration projects are important tools to understand the cultural trends of the public and their attitudes towards heritage and its aesthetics. The research showed that architectural heritage is deeply rooted in the culture of Antalya people. The Cut Minaret could generate serious debate between several parties of the community about the impact of its restoration on the current generations who do not know its old complete form. It also revealed that none of the parties conducted a study for the Visual Impact Assessment of the restoration project. There was no evidence that there was any kind of public participation in the studies, preparations or realization of the project. Public participation is a vital tool that could help to mediate the attitudes of the disputed parties. It also could raise public awareness towards the importance of the project and the need for the restoration of the old form of the minaret. The public showed clear preference for the scale over all other visual indicators. This highlights the role of the height and size of the minaret as a distinguished landmark in the low-rise historical Kaleiçi. This point strongly supports the argument of Culture and Religious Affairs authorities. The restored spire and finial of the minaret add considerably to the height and volume of the minaret and enhance its scale in the old town and as such, enhance its urban cultural and historical image.

11. RECOMMENDATIONS

Architectural conservation and restoration projects are vital for preserving the history, identity and culture of the community but they need to be well studied and assessed. Many assessment frameworks have been already applied like Environmental Impact Assessment (EIA) and Sustainability Impact Assessment (SIA), but there is still a desperate need to apply Visual Impact Assessment (VIA) and Public Preference Assessment (PPA). Government authorities and professional associations in particular should seriously take these studies in consideration to raise public awareness

towards the importance of these projects.

LIMITATION AND FUTURE RESEARCH

This study was limited in scope for the study of few Visual Indicators. There is a need to develop a comprehensive list of such indicators to cover wider range of aesthetical aspects of architecture and the built environment. The study was also limited in scale where the study of the public appreciation of the complete building of the mosque is crucial. Also, there is a need to apply the survey for a wider population in order to get more accurate results. The development of special software that would compute the assessment of the visual indicators is also vital for more sophisticated and accurate procedures. The research also could not measure the aesthetics appreciation of all the details of the minaret including its form elements. Future research is also needed to compare the aesthetics appreciation of several minarets in order to arrive at more general overview of public appreciation of minaret aesthetics. The study of Aesthetics Visual Assessment of architectural and restoration projects in different places in Antalya and outside of it is also needed.

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1- Aesthetics principles in architecture			2- Aesthetics principles in Islamic architecture		The complete set of aesthetics principles	Common principles of aesthetics- Aesthetics Visual Indicators
Uzunoglu 2012	Vinchu et. al., 2017	Stankovic et. al., 2018	Foroozani, 1991	Abdulmir, 2010		
Unity	Unity	Unity		Unity	Unity	Unity
Focal point			Centrality		Focal point	Focal point
	Space				Space	
		Repetition	Repetition	Repetition	Repetition	Repetition
			Similarity	Similarity	Similarity	
Balance	Balance	Balance	Equilibrium	Balance	Balance	Balance
Contrast	Contrast	Contrast	Contrast	Contrast	Contrast	Contrast
Rhythm	Pattern	Rhythm	Rhythm		Rhythm	Rhythm
Proportion	Proportion	Proportion	Proportion		Proportion	Proportion
Scale			Scale		Scale	Scale
		Axis			Axis	
	Symmetry	Symmetry	Symmetry	Symmetry	Symmetry	Symmetry
Hierarchy		Hierarchy			Hierarchy	
Emphasis		Datum			Datum	
		Transformation			Transformation	
Variety			Variety		Variety	Variety
	Decoration				Decoration	
	Mass				Mass	
			Tranquility		Tranquility	
			Harmony		Harmony	
			Order		Order	
			Culmination		Culmination	
			Movement	Movement	Movement	
				Light and shade	Light and shade	
				Control	Control	
				Texture	Texture	
				Harmony	Harmony	
10	9	11	15	12	27	10

Table 1: Aesthetics principles in architecture, Islamic architecture and minaret architecture [Author].

LIKERT Scale						Aesthetics Visual Indicators	
Measures	1	2	3	4	5	Indicator	Score
	Strongly disagree	disagree	somehow agree	agree	Strongly agree		
Maximum points of each measure	82	164	246	328	410	Repetition	242
						Balance	242
						Contrast	250
						Rhythm	242
						Proportion	250
						Scale	283
						Symmetry	266
Variety	235						

Table 2: Aesthetics Visual Indicators used in the Likert Scale Questionnaire for the Cut Minaret [Author].

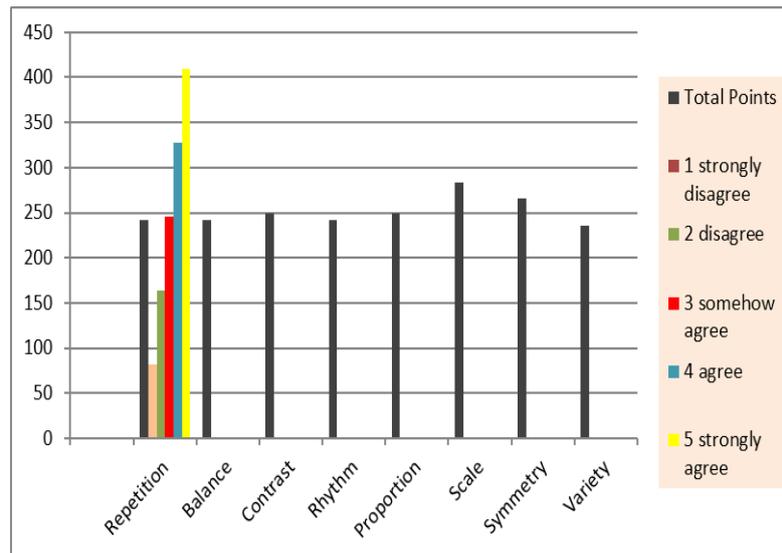


Figure 20: A chart of Aesthetics Visual Indicators used in the Likert Scale Questionnaire for the Cut Minaret [Author]

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