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Evaluation of Street Space Utilization as Playable Street in Child-Friendly Village Leles Condongcatur

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ABSTRACT

The unavailability of play space in Indonesian villages has often driven children to use the street as a play space. This has also been practiced in developed countries, but has been more planned and designed to create a sense of safety and comfort for children. Often street space can be permanently closed off to allow for optimal placement of children's play equipment. In the context of architecture, the concept of using street space as a space that can be played by children is called playable street. One of the settlements that has applied the concept of playable street until it received the predicate of the best child-friendly village by the local district government is the Child-Friendly Village (CFV) Leles Condongcatur. Therefore, Delima Street in CFV Leles Condongcatur was chosen as the object of research. This research aims to find out the application of the playable street concept that has been done to be evaluated so that the strengths and weaknesses can be a lesson to design a playable street more optimally. The method used in this evaluation is observation to find out the description of the physical elements which are then further analyzed based on the literature study that has been done. In CFV Leles Condongcatur, the concept of playable street is temporary and only done normatively (not architecturally) such as the use of portals and banners as vehicle stop signs, road space that is only colored with paint, and the absence of game equipment in the playable street. Whereas Delima Street in CFV Leles Condongcatur is appropriate for playable streets because the traffic density is quite low.

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1. INTRODUCTION

The existence of play space in settlements and village is very important for children's needs (Kementerian Pemberdayaan Perempuan dan Perlindungan Anak, 2023). Even, communities around the world lack safe places for children to play and be physically active (Esmonde et al., 2022). Despite this, many neighborhoods do not have playgrounds, which means the children are often forced to play in inappropriate locations (Dewiyanti et al., 2022). Street spaces or alleys in the village, as well as vacant lots, are the most common spaces chosen by children for play space (Dewiyanti et al., 2022; Gunawan, 2024; Manurung, 2016; Rolalisasi & Soemarwanto, 2019; Saragih, 2020). The reason why it happens is because the street or alley is the most realistic space that can be used as a place to play. Street locations mostly tend to be close to the house, which provides a sense of comfort for children, trains self-reliance for children, and gives parents a sense of trust for children to play (Stille, 2021; Yusuf, 2023), even though there is a very high risk of danger for children (Syanuna & Darmawati, 2023). This phenomenon is also in line with research by Gencer, 2017 and Rolalisasi & Soemarwanto, 2019, the street or alley in the village is part of the social space of the community. This social space is not only intended for children to play, but more than that, it can be used as a medium for learn activity for children (Wardiningsih et al., 2021). It is because learning and playing are characteristics of children's activities, especially at pre-school age (3-6 years) and elementary school age (7-12 years) (Anggeriyane et al., 2022).

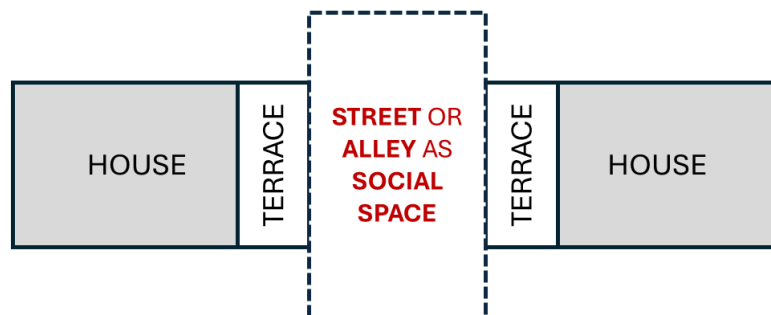


Figure 1. Alley/Street as Social Space
(Source: Rolalisasi dan Soemarwanto, 2019)

The idea of utilizing street space as a play space or can be called 'Playable Street' (Krysiak, 2019) has been around since at least 1961 (Gospodini & Galani, 2006). Play Streets involve temporary closure of streets or other publicly accessible spaces (e.g., parking lots, open-fields, or streets) to create safe play spaces for a specified time-period (Umstattd Meyer et al., 2020). Children need informal play spaces. Informal is defined as an outdoor playground that is not specialized, but can be used to play, gather, and can also help children understand what surrounds them (Meyer et al., 2021). In line with this, Young (1980) in Tranter, P. and Doyle (1996) also agrees that children should be able to play anywhere easily, freely, and without feeling forced. This is because play space are often formally designed such as playgrounds / parks, making children feel forced to always visit and quite difficult to become a daily activity. Therefore, changing the function of the street into a children's play space can be said to be one form of effort for this problem.



Figure 2. Overview of Residential Street Space Utilization as Play Space
(Source: Nathalia Krysiak, 2019)

According to the Minister of Women's Empowerment and Child Protection from 2009-2014, Linda Amalia Sari Gumelar, one of the efforts in building a child-friendly city is by implementing the Child Friendly Village (CFV) program. The CFV program is considered more friendly and ideal for children when compared to the concept of a child-friendly city because children are easier, safer, more comfortable, and more flexible to reach the location which is relatively small scale or close to settlements. Through this regulation, it is expected that Yogyakarta City will pay more attention and fulfill children's rights. Although the principles and strategies of the CFV implementation program in the regulation tend to be normative, they are not yet architectural.

The Child Friendly Village (CFV) Leles Condongcatur located in Yogyakarta is one of the best child-friendly villages in 2019 (Darisman, 2019) which has shown its concern through the implementation of street closures at certain hours to be used for play activities for children anak (Sari, 2019; Sholikah & Subaidi, 2022). Besides that, during the playtime, there are many other activities that are routinely carried out such as children learning together, reading together, dancing courses, to become a means for children to practice interaction with each other. With the activities that have been formed and running regularly on the playable street CFV Leles Condongcatur, an architectural evaluation is needed so that in the future it can be used more optimally. In general, the main factors that can determine the feasibility of utilizing roads as play spaces according to Gospodini dan Galani (2006) research can be assessed based on 3 (three) aspects, which are Urban Planning Variables, Global Spatial Configuration, and Form and Local Spatial Configuration. Meanwhile, based on Ekawati (2015) research, the 2 (two) main requirements that must be considered when utilizing street space as a play space are aspects of freedom and safety. The freedom aspect refers to the variety of activities that children can choose to do in the street play space, while the safety aspect refers to the quality of the environment and the street space itself. In terms of reaching a proper, free, and safe street play space for children, the following table presents the physical criteria of the street space based on its variables.

Table 1. Variables and Physical Criteria of Street Space for Play Space

Variable	Criteria
Urban Planning	High population density.
	The land use around the street can be commercial, residential, or both.
	Low traffic density.
Global Spatial Configuration	The level of integration / connection to the street space is low.
Form and Local Spatial Configuration	The size and layout of the street includes a walkable distance (400 meters / 5-7 minutes) with the proportion of street width balanced with building height.

Variable	Criteria
	Easily accessible to pedestrians and people with disabilities.
	Connectedness of street space to surrounding space is high.
	Street space restrictions and enclosure are high.
	There is no slope in the street space (streets tend to be flat and linear).

Source: Assessment Results Based on Ekawati 2015 & Gospodini dan Galani 2006

In line with this, referring to the Law of the Republic of Indonesia (Undang-Undang (UU) Nomor 38 Tahun 2004, concerning Roads, the classification of public road space based on its function is grouped into 4 (four), namely arterial roads, collector roads, local streets, and neighborhood streets. Based on research conducted by Gospodini and Galani (2006), the utilization of road space as a play space can only be done on streets with low density. In this case, local streets and neighborhood streets are suitable and potential road classifications.

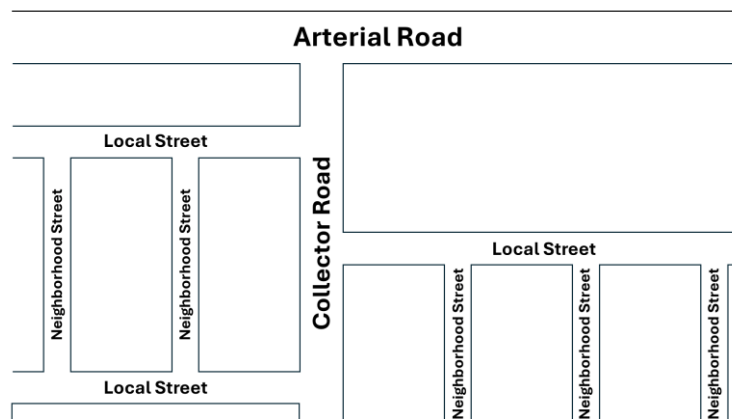


Figure 3. Road Classification Based on Function
(Source: Personal Data based on Indonesian Law No. 38 Year 2004)

The utilization of street space as a play space or what can be called the 'playable street' concept can be done in various ways. What needs to be determined from the beginning is the type of playable street that will be designed. There are 2 types of playable streets that are important for design considerations, which are permanent and temporary playable streets (Krysiak, 2019). The types of this space will affect the chosen design action.

Table 2. Street Play Space Design Measures by Types

Type of Space	Design Action
Permanent	There are street closure signs that are prominent and permanently embedded.
	Placement of play equipment can be placed in the center of the street to give children a sense of belonging to the space.
	Play equipment varies depending on the needs of each age group of children. Prioritized for pre-school age children (3-6 years) and primary school age children (7-12 years).
	The painting & coloring of street surfaces is more varied.
	Street surfaces can use a variety of textures and materials.
Temporary	There is a moveable/openable road closure sign.
	The selection of play equipment is prioritized that is moveable such as trampolines, mini skateboards, or games that use wheels, etc.
	It is recommended to prioritize games without furniture, such as ball games, jumping, running, or traditional games such as congklak, playing rubber jump, engklek, kasti, etc.
	The painting & coloring of street surfaces is mandatory.
	Placement of supporting equipment such as benches and planter boxes is done on the outer side of the street space without disturbing the garage doors of residents houses.

Type of Space	Design Action
	There is vegetation that does not obstruct the visibility of parental supervision of children from the home area to the street space.
	Pavement materials can be combined to find textures, but the majority still use pavement to achieve comfort and safety for vehicles.

Source: Assessment Results Based on Krysiak 2019 & Nurulhuda dkk., 2019

Based on the background and review of previous literature related to the research, this research is important to do because the concept of playable street that is planned and designed according to the criteria is a new thing that can be a solution for the community in presenting play space in the middle of limited residential land. This aims to provide references and design considerations in dealing with the problem of utilizing street space as an optimal children's play space in accordance with the recommendations of the Ministry of Women's Empowerment and Child Protection.

2. RESEARCH METHODS

This research is a qualitative research with descriptive evaluative method. This method requires primary and secondary data collection which will be analyzed through 2 (two) stages. Primary data collection is carried out through observation of the research object to find out the description of physical elements in the form of play space, site cover material in the play space, available game equipment, and activities carried out regularly by children presented through photo documentation. Primary data was also obtained by conducting interviews with the administrator of the Women and Children Protection Task Force in the CFV Leles Condongcatur area. This is to find out the history of the formation of a child-friendly village in Leles Condongcatur, the programs implemented, and also to interview one of the children as a user.

Secondary data collection is carried out by collecting previous articles on the object of research, collecting photos related to activities that have been carried out. Through the data that has been collected, the research analysis is carried out with 2 (two) stages, namely the 1st stage is the analysis of the feasibility of playable street CFV Leles Condongcatur through the physical element description data. Then, the second stage is the analysis of design actions taken on the playable street CFV Leles Condongcatur reviewed through the type of play space and completeness of facilities.

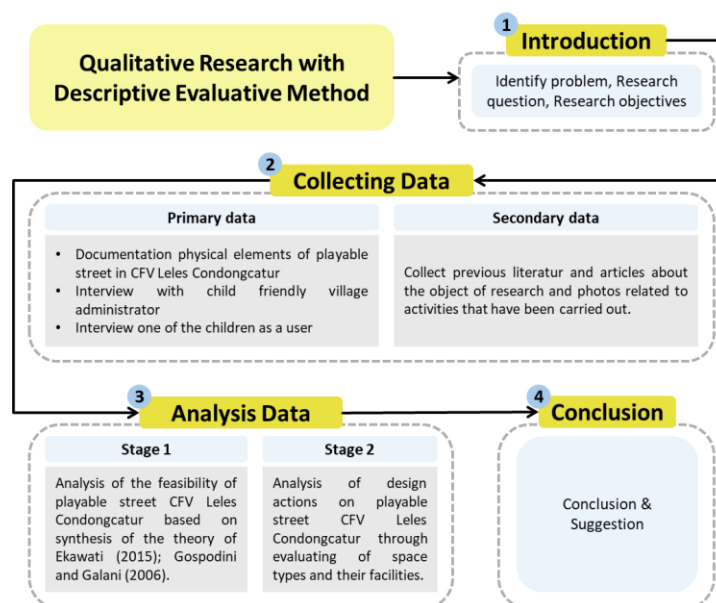


Figure 4. Research Method Flowchart
(Source: Personal Analysis, 2024)

3. RESULTS AND DISCUSSION

3.1 Location and Background of the Research Object

The street space that functions as a playable space is located at Delima Streets, Leles, Condongcatur sub-district, Sleman district, Yogyakarta, RW 18, especially in the area bordering Kurma Street and Cempaka Street. Playable street in CFV Leles Condongcatur has a length of ± 206 meters. This playable street was initiated, planned, and built independently by the residents of CFV Leles Condongcatur.



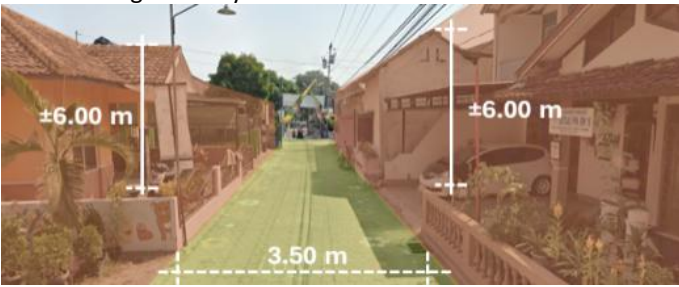
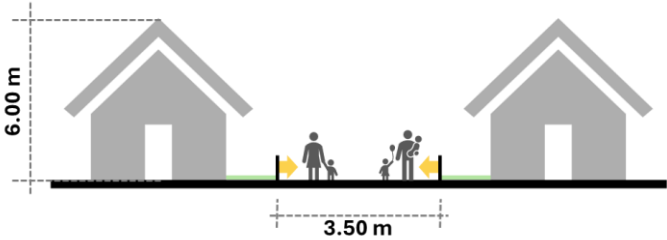
Figure 5. Playable Street location at Child-Friendly Leles Condongcatur
(Source: Personal Data, 2024)

3.2 Feasibility of Street Space as Play Space

The discussion of feasibility of Jalan Delima space as a children's play space in Child Friendly Village Leles Condongcatur was conducted based on the synthesis of Ekawati (2015); Gospodini dan Galani (2006) theory. The discussion was carried out with an assessment based on urban planning variables, general spatial configuration, and form and local spatial configuration.

Table 3. Delima Street Characteristics for Play Space

Variables	Criteria	Delima Street in Child-Friendly Village Leles Condongcatur		
		Results	Discussion	
Urban Planning	Street Classification	Neighborhood Street	The playable street area is in the neighborhood street classification which is the safest street. This is because of the low traffic density on the street.	Classification of Street Space Around Playable Streets
	Population Density	High	CFV Leles Condongcatur has 150 family heads with 195 children, which are dominated by girls. This affects the design actions that have been carried out to date such as images dominated by flowers as a characteristic of the female gender.	
	Surrounding Land Use	Residential	The land around the playable street is residential sites which on average have a terrace in the front area of their house. There is an undeveloped vacant land owned by one of the residents that used to function as a temporary playground, but currently it cannot be used.	

		Delima Street in Child-Friendly Village Leles Condongcatur	
Variables	Criteria	Results	Discussion
			
		Residential Area in Front of Playable Street	Vacant Land Area Facing the Playable Street Area
	Traffic density	Low	Vehicle traffic is dominated by homeowners located in front of the playable street area. There is a low traffic density for vehicles other than those of passing residents.
Global Spatial Configuration	The level of integration / connection to the street space is low	Low	Delima Street connects 2 streets and 2 alleys, which are Kurma Street as a local street and Cempaka Street as a collector street, and several alleys inside to reach residents' houses that are more protruding.
			
		Playable street bordering a collector street	Playable street borders with local street
			
			Playable street bordered by an alley
Form and Local Spatial Configuration	Size and Layout	Proportional	- Delima Street has a street width of 3.50 meters with a length of ± 206 meters in a linear shape extending from west to east. - The proportion of the width of the street and the height of the house is balanced because the majority of the buildings are 1 (one) floor so that it provides a sense of comfort, a sense of openness, and it is not intimidating from the point of view of children aged 3-12 years.
			
			
			Size & Proportion of Street as Playable Street
	Accessibility	Easy to access	The playable street area in front of the house makes it easy for children to access directly and independently.

		Delima Street in Child-Friendly Village Leles Condongcatur	
Variables	Criteria	Results	Discussion
			 Direct Access from Home to Playable Street
	Connectedness of street space to surrounding space	Low	Playable street has a direct connection with the residential area, but does not have a direct connection with the surrounding public space. The nearest public space is 150 meters away.  There is no connection with the surrounding public space
	Restriction of street space and high enclosure properties	High	Traffic on Delima Street as a playable street is restricted to provide a sense of security for children, especially in the afternoon when children are playing.  Restriction of street space during play
	Street Slope	None	Delima Street has no slope so that the use of play space is easier and more flexible.  There is no slope in Playable Street

Source: Personal Analysis, 2024

3.3 Application of Architectural Design on Playable Street

Playable street in CFV Leles Condongcatur located on Delima Street is temporary. The main function of Delima Street as a vehicle and pedestrian circulation is still used. But, every day at 15.30-17.30 WIB the street will be closed to be converted into a play space. Therefore, the identification of design application can be adjusted to the type of temporary play space.

A. Signage

When the CFV Leles Condongcatur playable street was first built to indicate the utilization of the street as a play space, signs were used through the provision of portals, banners, and appeals on the painted street surface. Besides signaling the existence of activities and the utilization of street space, signage is used to increase the sense of spatial ownership on children while playing. But, lack of maintenance on the playable street has made impossible to see the banners and appeals on the street surface. But, the lack of maintenance on the playable street has made banners and signs on the street surface damaged, even now they are no longer visible.



Figure 6: Playable Street Portal Sign and Banner in 2018 (Left), Street Surface Sign in 2018 (Center), Street Surface Sign in 2024 (Right)

(Source: Wastuti, 2018 (Left); Kompasiana.com, 2018 (Center); Personal Data, 2024 (Right))

B. Play Equipment & Activities

Due to the playable street is temporary type, there are no play equipment placed on the center street space. The play activities prioritize on traditional games, games without equipment, and games that use their own equipment, such as:

- Indonesian traditional games such as *engklek* / *conglak*;
- General games that do not need special equipment such as jumping, running, or hide-and-seek games;
- Self-play games, such as bicycles, ball games, or rubber jumping games.

Traditional game equipment facilities at playable street Leles Condongcatur can be seen by the presence of pictures and coloring on the street surface for the game *engklek*. And it is also the only game facility found in playable street.



Figure 7. Children Playing *Engklek* on a Colored Street Area
(Source: WargaJogja.net, 2019)

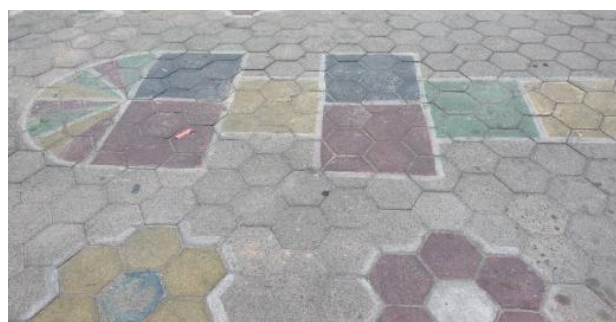


Figure 8. *Engklek* Game Facility in Playable Street in 2024
(Source: Personal Data, 2024)

These *engklek* game facilities are drawn and colored using paint on the street surface, so that it is permanent. It can be seen that in 2019 and 2023, the pictures and colors of this *engklek* game box are quite well maintained so the pictures and colors of the paint do not look faded. However, overall the availability of game equipment on the playable street Leles Condongcatur is very less in quantity and quality for a street space that has a length of ± 206 meters.

C. Complementary Supporting Furniture

Delima Street which is included in the classification of neighborhood streets has no street elements such as sidewalks, so that the street space line is directly adjacent to the residents yards. Based on this, the playable street in CFV Leles Condongcatur does not have supporting furniture such as benches on the side of the road for parents or adults to watch their children play and there are no plant tubs as green elements and beauty aspects. What often happens is the parents more often supervise their children playing from the terrace area of their house. This was also supported because the playable street is directly adjacent to their home terrace so that the existence of benches as supporting furniture is not a priority, but if available it will be a plus point. Meanwhile, plant tubs as one of the elements of nature-themed furniture are also not found in the playable street of CFV Leles Condongcatur. Plant tubs are only found on several walls of the fence of residents' houses (Figure 10). Delima street space as a playable street which has a limited width of 3.50 meters, is a consideration for the absence of plant tubs in the street space.



Figure 9. Overview of the house terrace directly adjacent the playable street

(Source: Personal Data, 2024)



Figure 10. Overview of Plant Tubs on the Walls of Residents Fences

(Source: Google Street View, 2023)

D. Vegetation

On the playable street area of CFV Leles Condongcatur, there is no vegetation. All vegetation is in the yard area of residents houses (Figure 12). The street space is still prioritized for vehicle lanes and the temporary type of playable street is the reason for the absence of vegetation on the playable street. So this provides its own advantages and disadvantages. The advantage is having the visibility of the playable street area along ± 206 meters unobstructed by vegetation, but the disadvantage is that if during play time the weather is hot, children rarely play in the playable street area because there is no place to shade.



Figure 11: Visibility of Playable Street in CFV Leles Condongcatur Unobstructed by Vegetation
(Source: Personal Data, 2024)



Figure 12. Overview of the Location of Trees in Residents Yards
(Source: Google Street View, 2023)

E. Street Cover Material

On the playable street in CFV Leles Condongcatur there is no variety of street cover materials. The material only uses paving blocks with hexagonal motif. Delima Street which is still prioritized as a vehicle lane, both two-wheeled and four-wheeled, causes the selection of materials prioritized for the convenience of vehicles. This has an effect on the street space as a play area that does not have a variety of textures as a means of play, especially for the motoric development of pre-school children (3-6 years old). Although, the use of paving blocks distinguishes street space users, especially vehicles, that they have entered a residential area and make drivers must drive slowly and carefully.



Figure 13. Street Material Using Only Paving Blocks
(Source: Personal Data, 2024)

4. CONCLUSION

In general, the use of street space as a playable street has a positive impact on children and parents, especially on pre-school age children (3-6 years) and primary school age children (7-12 years) who have high self-reliance to access the playable street. Majority of the children are no longer escorted and or accompanied by parents or adults when playing in the playable street because the playable street area is directly adjacent to the residents land. It makes it easier for children to access so as to create a sense of independence, comfort and safety in children; and also creates a sense of trust in parents.

The characteristics of the road and the low density of vehicle traffic intensity on Delima Street make this street ideal for the implementation of the playable street concept, but the CFV Leles Condongcatur playable street which is temporary type and still prioritizes vehicles as the main user has an impact on the limitations on children's play time and architectural design actions taken.

Based on the results and discussions that have been carried out, the implementation of playable street design is not architecturally visible, such as:

- Some areas of the street space surface only use paving blocks that are given pictures and colors with paint.
- They do not use a variety of materials to cover the street surface.
- The vehicle stop sign in the playable street area is only normative by using portals and banners that written “the street is closed”.
- There is no complementary supporting furnishings such as benches for parents or adults to monitor the children while socializing between residents.
- It does not have any play equipment on the street space for children to train and learn their sensory and motoric skills
- The street space looks like same as other public streets.

However, to reach the optimal playable street concept, there are several suggestions that can be implemented:

- Playable street in CFV Leles Condongcatur is more optimal if it is permanent type.
- Prioritizing children with their play activities so the adults who passing with vehicles cannot pass through the playable street.
- Provide a variety of textures and types of path covering materials that can help children exercise their motoric, sensory, and creativity. Such as gravel, grass, soil, water, or sand.
- Provide a variety of play equipment that is suitable for the physical and psychological development children, especially children in the golden age.
- Placing play equipment & elements more freely such as on the center of the street, it becomes a physical marker that Delima Street is a playable street. Thus, it looks different from other public streets and it will give a better comfort and safety to the children.

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