

The analysis of motor ability of physical education students

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ABSTRACT

In producing good and quality learning in physical education, it needs to be equipped with the right motoric movements to achieve goals and follow the learning contained in the physical education curriculum so that the graduates expected can be completed. This study aims to determine the motoric skills level of physical education students in Universitas Islam Riau. This research is a quantitative descriptive study. The method used is a survey method in the form of tests and measurements for physical education students. The population used in this study is all physical education students in semester 1 of the 2019/2020 academic year, with a total of 224 people. The sample is 144 people selected by random sampling. The instrument used was the motor ability test from Harold M. Barrow in the form of a test battery with a validity coefficient of 0.92 with a series of tests; a) Standing Broad Jump, b) Wall Pass, c) Medicine Ball-Put, d) 60 Yard Dash. The research results on the level of motor skills of physical education students at Universitas Islam Riau were mostly in the medium category. Furthermore, from the results of this study, it is necessary to pay more specific attention to physical education students' motor abilities. Because with good motor skills, someone can do various kinds of movements in sports and the courage to do multiple sports activities.

Keywords: Motor ability; physical education

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INTRODUCTION

In producing good and qualified learning in physical education, it needs to accept with an excellent motoric movement to reach the goal and follow the existing learning in the curriculum of physical education to create graduation based on expectation. Burton and Miller define motor ability as a general feature or individual capacity that bases several movement abilities' performance (Logan, Robinson, Rudisill, Wadsworth, & Morera, 2014). While Fajar (2017) and Putri (2017) explain that developing the motor is one activity that can develop an aspect of motor optimally and stimulate the development of students' brains. The motor activity involves whole activity, handling and controlling the functions of the body organ, both of physiologically and practices that cause movement (Kiram, 2019). These motor abilities roles as the foundation for a person's ability (Nur, Hafina, Rusmana, Suryana, & Malik, 2019).

In the Faculty of Teachership and Education, Universitas Islam Riau has a Study Program of Physical Education that can create graduation of reliable physical education teachers and has motor skills based on practice subjects that taken. Based on the observation in the field, learning has not been conducted based on expectation, where learning activity in the area is lack of motivation and the lack of students' ability to follow practice subject in the field. This case looks at many students who have not been able to follow the learning activity of physical education that connects with motor movement. It is the lack of students'

physical freshness and body factors and distinguished motor movement ability. If this activity continues, it will produce weakness in learning not appropriate with expectation and graduation output not suitable with the purpose that wan to reach. This issue is also expressed in the invention [Birriy and Indahwati \(2016\)](#) that there is the difference of various motor ability levels on students of physical education. Therefore, the researcher conducts a research-related analysis of fresh students' general motor ability in the 2019/2020, academic year.

Motor ability obviously will describe a general ability that is theoretically, that involves several factors that consist in several kinds of physical activity, both of in daily life and sport activity. The motor activity looks at the neurologist process and internal neuromotor based on the correlation of different complexity movement performance (Keogh & Sugden in [Maxwell, Capio, & Masters, 2017](#)). Basic motor ability is the motor's essential ability that brought since born generally or fundamentally roles in conducting motor both of physical movement and nonphysical movement ([Nusufi, 2016](#)). The same explanation is delivered by [Sepriadi \(2017\)](#) that motor ability is the quality of someone's ability to facilitate motor ability. From the opinion above it can be concluded that motor ability is basic and general ability to move.

The basic motor ability that someone owns can function as a factor to facilitate the mastery of physical ability in sports activity ([Hoffmann, Reed, Leiting, Chiang, & Stone, 2014](#)). The mastery of fundamental motor ability relates tightly to motor ability ([Sutirta & Karim, 2020](#)). [Sutirta and Karim \(2020\)](#) add that motor ability is a foundation for ability development, while many skills depend on the basic ability then this basic ability will role conducting several abilities in a sport.

Each child's motor ability is different because this case is looked at from the basic motor that he/she masters. Motor ability is influenced by experience and activity of motor training, this case will influence the motor ability of someone. There are elements in motor ability like agility, coordination, balance, speed ([Setiawan & Muhammad, 2017](#)), and flexibility ([Hanel & Rifki, 2020](#)). In reaching a good basic skill, it should be supported by a motor ability. As explained, if someone's general motor ability level is higher, the person will be easier and faster to master one skill ([Sutirta & Karim, 2020](#)). The same case also is delivered by [Semarayasa \(2016\)](#) that someone who has a high motor ability, the person will be influential in doing all kinds of sports skills.

This motor ability is essential because it is needed on all numbers and branches of sport, and motor ability is not regardless of physic condition element. This case is appropriate with [Supriadi \(2017\)](#) opinion that motor ability contributes to students' physical freshness. Furthermore, [Dermawan \(2016\)](#) also states that there is an interaction between giving feedback and motor ability towards the learning result shooting. Based on the background in this research, this study aims to determine students' motor ability level of physical education, Universitas Islam Riau.

METHODS

Thus research is conducted in Universitas Islam Riau on Physical Education Study Program for three months. This research uses the quantitative description method that explains the existing fact in the field and describes the present situation in the field. According to [Arikunto \(2019\)](#), descriptive research investigated case and condition in the area and explained based on motor ability test conducted towards students of physical education of 2019/2020. The population used in this research is all students of physical education in semester 1 2019/2020 academic year, with the number of students being 224 people. At the same time, the sample is 144 people that were chosen in random sampling. An instrument that is used is the motor ability test from Harol M. Barrow, such test battery with validity coefficient 0,92 with the test sequences; wall pass, basketball throw, broad jump, and 4.sec. ([Barrow, 1954](#)). All of each test result is looked at and compared with a table of t-score. Furthermore, the category of students' motor ability of physical education Universitas Islam Riau uses the categorizing formulation.

Table 1. Category of Motor Ability

Category	Score Interval
Very high	$X \geq M + 1.5 SD$
High	$M + 0,5 \leq X < M + 1,5 SD$
Medium	$M - 0,5 SD \leq X < M + 0,5 SD$
Low	$M - 1,5 SD \leq X < M - 0,5 SD$
Very Low	$X < M - 1,5 SD$

Furthermore, analysis of data is conducted using quantitative descriptive research with a percentage using SPSS 23.

RESULTS AND DISCUSSIONS

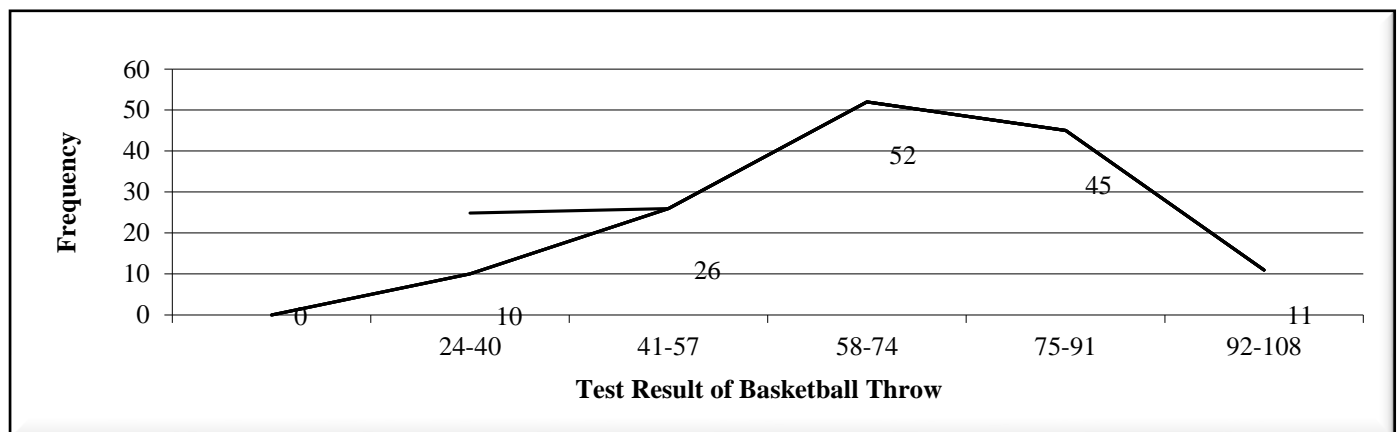
Description of data that showed in this research regards students' motor ability of physical education in 2019/2020 academic year described from each motor ability test that conducted those are; data about basketball throw, standing board jump, wall pass, and run during four seconds. Description of data from each of test in the research can be expressed as follows:

1. Data of Test Result of Students' Basketball Throw in Physical Education Universitas Islam Riau

The research result shows that the score distribution of basketball throw in appropriate measure spreads from the maximum score amount of 108 and the lowest score amount of 25,42. Based on the score distribution data finds the mean amount of 68,11, and dan standard deviation amount of 17,22. More explicit about the spreading of basketball throw score can be seen in table 2 and picture of histogram 1.

Table 2. Distribution of Test Result of Students' Basketball Throw in Physical Education Universitas Islam Riau

Test Data Result	Frequency	Percentage
92 – 108	11	7.64
75 – 91	45	31.25
68 – 74	52	36.11
41 – 57	26	18.06
24 – 40	10	6.94
Total	144	100



Picture 1. Histogram of Test Result of Students' Basketball Throw in Physical Education Universitas Islam Riau

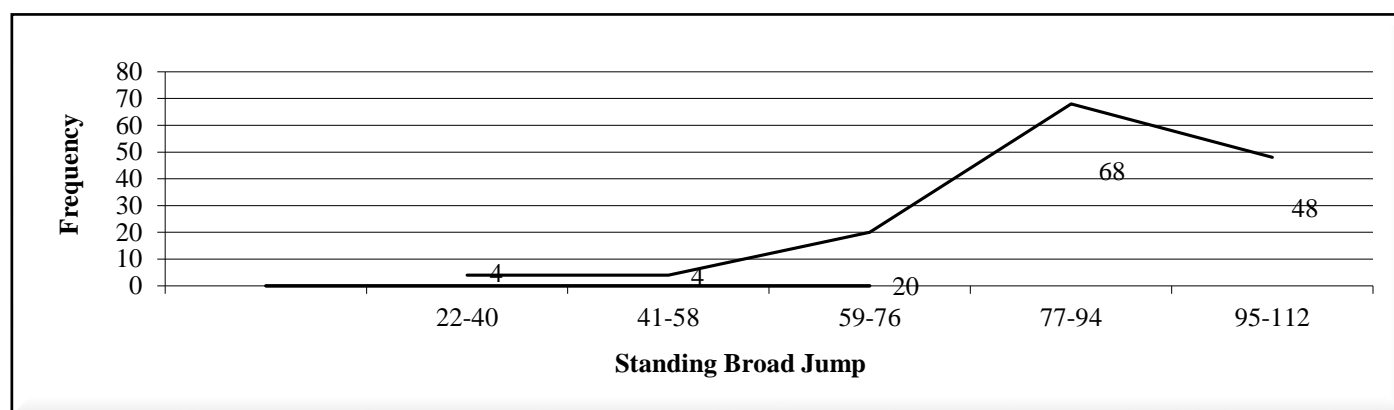
Data of frequency distribution on table 2 and histogram on picture 1 can be known that students that own the test result from 24-40 there are 10 people (6.4 from %), the test result from 45-57 there are 26 people or 18,06 % from respondents, score value 58-74 there are 52 people or 36.11 % from students response, that own the test result 75-91 there are 45 people or 21,25 % from response, and from 11 students that own the resulting test 92-108 or 7,04% from response of students that follow test of basketball throw.

2. Data of Test Result of Students' Standing Broad Jump in Physical Education Universitas Islam Riau

Whole The research result shows that the score distribution of standing broad jump in inch measure spreads from maximum score 112 and the lowest score 22. Based on the score distribution data, it gained a mean of 88,67, median and standard deviation of 13,47. To get a clearer description of the score spread of standing broad jump can be seen in table 3 and picture of histogram 2.

Table 3. Distribution of Result Frequency of Students' Standing Broad Jump in Physical Education Universitas Islam Riau

Data of Test Result	Frequency	Percentage
95 – 112	48	33.33
77 – 94	68	47.22
59 – 76	20	13.89
41 – 58	4	2.78
22 – 40	4	2.78
Total	144	100



Picture 2. Histogram of Test Result of Students' Standing Broad Jump in Physical Education Universitas Islam Riau

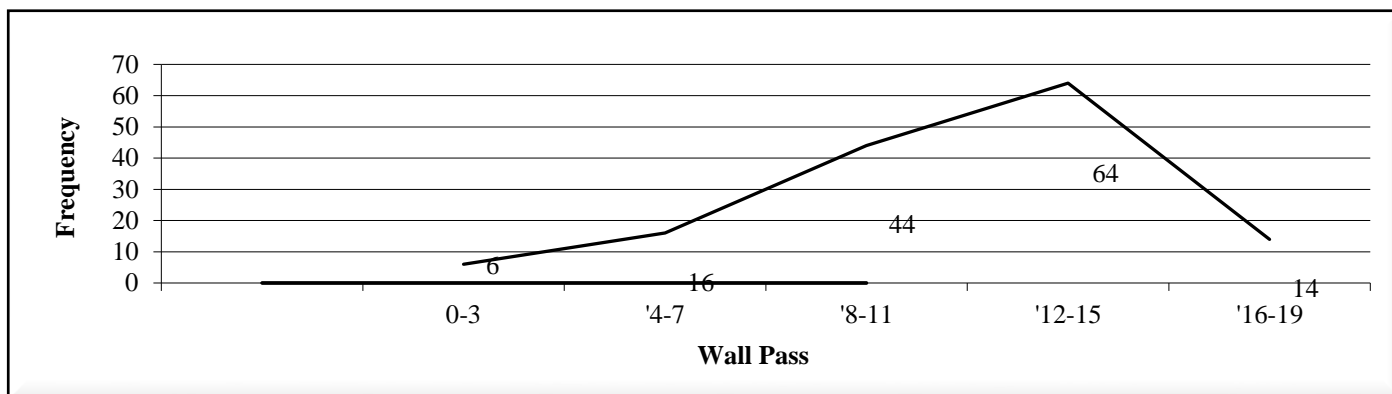
Data of frequency distribution on table 3 and histogram on picture 2 can be determined that students have a test result of standing broad jump from 22-40 there are 4 people (2,78%), test result 41-58 amount 4 people or 2,78 % from response, score 59-76 there are 20 people or 13,89 % from students as respondents, that have a score of test result amount 68 people or 47,22 % from response, and 48 students that have a score of result test 95-112 or 33,33 % from students as response that follow test of standing broad jump.

3. Data of Test Result of Students' Wall Pass in Physical Education Universitas Islam Riau

Whole the research result shows that the score distribution of wall pass from maximum score amount 19 and the lowest score is 0. Based on score distribution, it can gain a mean amount of 11,26 and a standard deviation amount of 3,62. A clearer description of the spread of wall pass score can be seen in table 4 and the picture of histogram 3.

Table 4. Distribution of Result Frequency of Students' Wall Pass in Physical Education Universitas Islam Riau

Test Data Result	Frequency	Percentage
16 – 19	14	9,72
12 – 15	64	44.44
9 – 11	44	30,56
4 – 7	16	11,11
0 – 3	6	4,17
Total	144	100



Picture 3. Histogram of Test Result of Students' Wall Pass in Physical Education Universitas Islam Riau

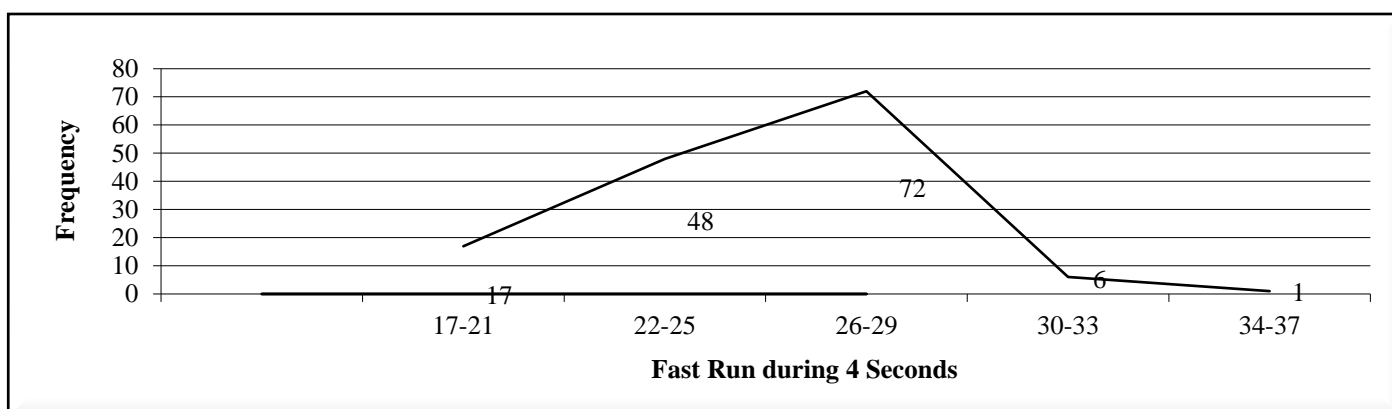
Data of frequency distribution on table 4 and histogram on picture 3 can be known that students that have a test result of Wall Pass from 0-3 there 6 people (4.17%), test result 4-7 amount 16 people or 11.11% from response, score 8-11 there are 44 people or 30,56 % from students as correspondence, that have test result score 12-15 there are 64 people or 44,44 % from response and 14 students that have test result score 16-19 or 9,72% from students as response that follow Wall Pass test.

4. Data of Result Test of Students' Fast Run during 4 Seconds in Physical Education Universitas Islam Riau

Whole the research result shows that the distribution of test scores of a fast run during 4 seconds in yard size spreads from a maximum score amount of 37 and the lowest score is 17,71. Based on the data of score distribution gains mean 25,43, and standard deviation amount 3,05. To get a clearer description about the spread of test result score of fas run during 4 seconds, it can be seen in table 5 and picture of histogram 4.

Table 5. Distribution of Test Result Frequency of Students' Fast Run during 4 Seconds in Physical Education Universitas Islam Riau

Test Data Result	Frequency	Percentage
34 – 37	1	0,69
30 – 33	6	4,17
26 – 29	72	50
22 – 25	48	33,33
17 – 21	17	11,81
Total	144	100



Picture 4. Histogram of Test Result of Students' Fast Run during 4 Seconds in Physical Education Universitas Islam Riau

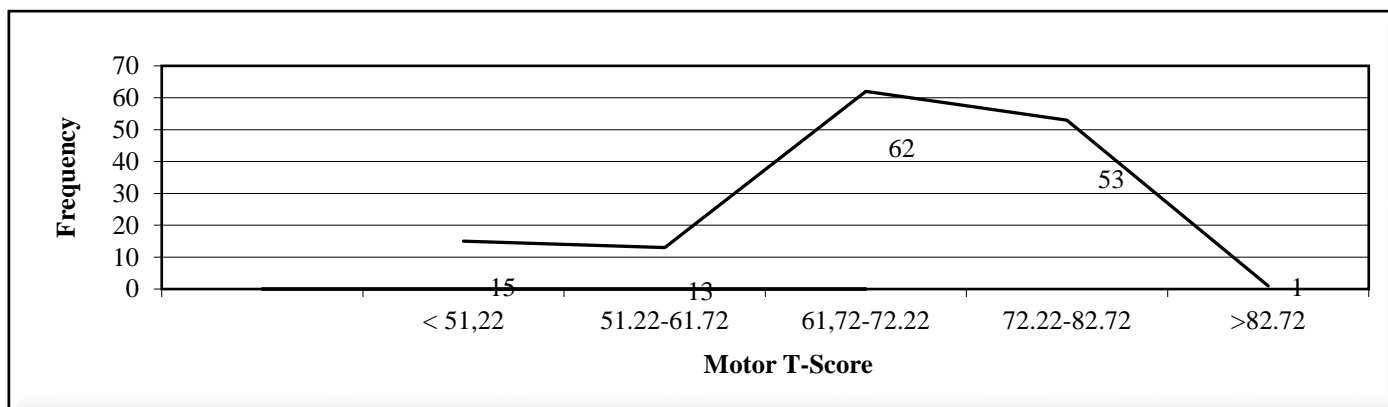
Data of frequency distribution on table 5 and histogram on picture 4 can be determined that students that own test result from 17-21 there are 17 people (11,81%), test result 22-25 amount 48 people or 33,33 % from response, score 26-29 there are 72 people or 50 % from students as response, that own test result score 30-33 there are 6 people or 4,17 % from response and 1 student that owns test result score dan 34-37 or 0,69 % from students as response that follow run speed test during 4 seconds.

5. Data of Students' Motor Ability Level in Physical Education Universitas Islam Riau

Whole test result and motor ability measure from 4 test items that were conducted and after seeing each of t-score gained in the research shows that result distribution of t-score of students' motor ability in physical education FKIP Universitas Islam Riau 2019/2020 academic year. T-score spreads from the maximum score amount of 85,75 and the lowest score is 32,50. Based on the score distribution data is gained mean 66,97, and standard deviation 10,50. T-score results of students' motor ability in physical education FKIP Universitas Islam Riau can be seen in table 6 and the picture of histogram 5.

Table 6. Distribution of T-Score Result Frequency of Students' Motor Ability in Physical Education Universitas Islam Riau

Interval	Frequency	Percentage	Category
$\geq 82,72$	1	0,69	Very high
$72,22 \leq X < 82,72$	53	36,81	High
$61,72 \leq X < 72,22$	62	43,05	Medium
$51,22 \leq X < 61,72$	13	9,03	Low
$X < 51,22$	15	10,42	Very Low
Total	144	100	100



Picture 5. Histogram of T-Score Result of Students' Motor Ability in Physical Education Universitas Islam Riau

Data of frequency distribution on table 6 and histogram on picture 5 can be determined that students that have lack of T-score result from 51.22 there 15 people (310.42%), t-score result 51.22-61.72 there are 13 people or 9,03% from response, T-score 61.72-72.22 there are 62 people or 43.05 % from students as response, that have the result of t-score 72.22-82.72 there are 53 people or 36.81 % from response and 1 student that has t-score result above 82.72 or 0.69 % from students as response. Furthermore, based on the distribution of t-score frequency distribution of students' motor ability in physical education FKIP Universitas Islam Riau, it can be concluded that the average of t-score is 66,97 categorized that students motor level in physical education FKIP Universitas Islam Riau is medium.

Based on data gained from the t-score result of students' motor ability in physical education FKIP Universitas Islam Riau 2019/2020 academic year by using barorrw motor ability test consisting of wallpass, broad jump, basketball throw, and fast run during 4 seconds. It is gained that students' motor test in physical education is categorized medium with an average of t-score 66,97, so it needs to be paid attention and increased more students' motor ability in physical education because for follow course that the most the subjects are practice and to require an excellent physical condition, so it needs to enhance the movement

ability. One of the elements or components is speed, efficacy, agility, power, reaction speed, balance, and flexibility.

This research aims to determine students' motor ability level in physical education Universitas Islam Riau. The research found that students' motor level in physical education FKIP Universitas Islam Riau included medium. Several things that influence someone's motor ability level are environment stimulus, nutrition status, gender, mature step, heredity, and genetic (Wahyudi, Saharullah, & Muhammadong, 2018).

Quality of motor ability describes someone's ability to learn a sport branch motor ability (Abidin, 2014). A good or high motor ability supports students' readiness to conduct movement or sports skills and can fasten the process of motor ability mastery that trained and learned (Darmawan, 2013). Febrianty (2020) states in her research that a good motor ability will influence toward life quality, while Suriantoso, Suryaningsih and Endah (2016) state that skill and motor ability develop with neuro maturity. The motor ability of someone will enhance if there are motivation and sustainable training. As like delivered by Maslesa, Vidamsek, and Karpljuk (2012), they state that after conducting the training, there will be a positive change towards motor ability and motor skill.

Motor ability is one of the basic skills needed and important to do several skills in sport (Lutan, 1988). This motor ability is also one of a person's general skills related to several skills or movement tasks (Febrianty, 2020). Component of this motor ability consists of speed, efficacy, endurance, power, hand-eye coordination, agility, and flexibility (Lacy & Williams, 2018). Based on the opinion above, it is clear that components of the basic motor ability that consists of speed, efficacy, power, endurance, agility, motor coordination, flexibility, and balance are factors that can influence a person's motor ability influence motor performance of someone.

CONCLUSION

Based on analysis and discussion of students' motor ability level in physical education FKIP Universitas Islam Riau, it can be concluded that students' motor ability level in physical education Universitas Islam Riau is categorized medium. Furthermore, from this research, it needs to be paid attention more specific on students' motor ability of physical education. Because with good motor ability, someone can conduct various kinds of movement in sport and has the bravery to conduct multiple sports activities.

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