

MODULE PORTOFOLIO
ODD SEMESTER JULY-DESEMBER 2019/2020

MODULE NAME	Psychology of Mathematical Instructions	LECTURER NurulAfifahRusyda, M.Pd
MODULE CODE	MAT1.61.3303	
CLASS	2018	
SEMESTER	III	
DATE	08 January 2020	
COURSE LEARNING OUTCOMES	<p>Programme Learning Outcome (PLO)</p> <p>PLO 5 : Graduates are able to use general knowledge concepts to support professional teacher competencies.</p> <p>PLO 10 : Able to show a responsible attitude in their own work and can be given responsibility for the achievement of group works</p> <p>Course Learning Outcome (CO)</p> <p>CO 1 : Able to Explain the notion of psychology, learning psychology, mathematics learning psychology, character education in mathematics learning; individual characteristics based on learning styles, gender, heredity, and environment; the nature of mathematics, the characteristics of mathematics, and the objectives of learning mathematics; the characteristics of constructivist-based learning, procedures for forming mathematical concepts and schema ideas in understanding mathematical concepts; the meaning of each noticing, anxiety, authoritarian, democratic, in mathematics learning; interpersonal and emotional factors, various types of imagery; the ability to relate to the school environment</p> <p>CO 2 : Able to Distinguishing various learning theories based on cognitive psychology, behavior, and its application in mathematics; between intuitive and reflective intelligence, short term memory, long term memory, and metacognition</p> <p>CO 3 : Showing the responsibility attitude in own works</p>	

CO 4 : Maintaining the responsibility attitude in team works.

Correlation Between PLO and CO

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11
CO 1					√						
CO 2					√						
CO 3										√	
CO 4										√	

LEARNING STRATEGIES

Lectures, Expository, and Group Discussion

ASSESSMENT

The assessment carried out during the lecture includes the following three components.

(1) Assignment, (2) Midterm Exam (UTS), (3) Final Exam (UAS) and Class Activities

1. Assignment

- ✓ Assignments are given as group task and it is in form paper and presentation and it is assessed by rubric assessment
- ✓ Assignments was carried out to see the achievements of the PLO and CLO which are in accordance with the characteristics of the evaluation of mathematics learning module

2. Midterm Exam (UTS)

- ✓ UTS was held at the 9th meeting
- ✓ UTS was carried out in the classroom with an implementation time of 100 minutes according to the module schedule
- ✓ The UTS was carried out to see the achievements of the PLO and CLO which are in accordance with the characteristics of the

evaluation of mathematics learning module

3. Final Exam (UAS)

✓ UAS was held at the 16th meeting

✓ UAS was carried out in the classroom with an implementation time of 100 minutes which follows the UAS implementation schedule of the department

✓ The UAS was carried out to see the achievements of the PLO and CLO which are in accordance with the characteristics of the evaluation of mathematics learning module.

4. Class Activities

Assessment Plan

	PLO 5	PLO 10
CO 1	Mid Test (1,2,3,4a,4b) Final Test (1a, 1b, 1c, 2) assignment	
CO 2	Mid Test (5a, 5b, 5c, 6a,6b) Final Test (3a, 3b, 4a, 4b, 5a, 5b) assignment	
CO 3		Affective Assessment
CO 4		Affective Assessment

Weight of Test Ability

	Weight Value	Weight of Test Ability			
		PLO 5		PLO 10	
		CO 1	CO 2	CO 3	CO 4
Midterm Exam	0,35	0,5	0,5		
Final Exam	0,35	0,4	0,6		
Assignment	0,2	0,5	0,5		
Activities	0,1			0,6	0,4

The Calculation of PLO's Weight

Total of PLO's Weight			
PLO 5		PLO 10	
CO1	CO 2	CO 3	CO 4
0,18	0,18	0,00	0,00
0,14	0,21	0,00	0,00
0,10	0,10	0,00	0,00
0,00	0,00	0,06	0,04
0,42	0,49	0,06	0,04

LEARNING

The Calculation PLO of Each Students

OUTCOMES	Students	PLO 5			PLO 10		
		CO 1	CO 2	Average	CO 3	CO 4	Average
	GITA FITRI MUZELLA	69.28	69.38	69.33	86	86	86
	AinayLizana	91.69	91.44	91.57	90	90	90
	DitriWilymandayanti	86.28	86.38	86.33	90	90	90
	PutriAsifa	89.77	90.09	89.93	90	90	90
	RafikaUlfaHasanah	79.05	79.47	79.26	90	90	90
	Tiara Anggraini	85.92	86.07	85.99	90	90	90
	EgiWahyuniFentri	78.72	79.34	79.03	90	90	90
	Nursifah	84.52	85.31	84.91	90	90	90
	PutriMayang Sari	85.02	85.60	85.31	90	90	90
	UciDesrika	73.45	73.96	73.70	90	90	90
	Nakhwanisa	86.48	86.41	86.45	86	86	86
	PARFI AGUSFINDA	74.92	75.07	74.99	88	88	88
	ALFARINI OCTALIANA	72.39	72.91	72.65	90	90	90
	FEBY KRISTINA	87.47	87.84	87.65	90	90	90
	MELISA TRI AMIZA	84.12	84.82	84.47	90	90	90
	NIAKMATUL HUSNI	85.19	85.45	85.32	90	90	90
	RIZKA AULYANI VERNELLI	78.98	80.57	79.77	90	90	90
	AINA NOVITA IRKA	67.71	68.04	67.88	90	90	90
	ALWIS FITRI NANDA	73.11	73.53	73.32	90	90	90
	AULIA FATMAWATI	68.27	69.53	68.90	90	90	90
	AZIZAH ADRIS	87.05	87.47	87.26	90	90	90

CHANTIKA ENZA SUHENDRI	89.89	90.20	90.04	90	90	90
DINDA AGUSTIN SUHARDI	87.23	87.63	87.43	88	88	88
DONI PRATIWI	76.78	77.39	77.09	90	90	90
FAISAL AMRI TANJUNG	79.82	80.57	80.19	90	90	90
FAUZIAH ANNISA RAHMA	94.70	94.74	94.72	90	90	90
HAIRUNISA JEFLIN	87.71	88.04	87.88	90	90	90
LIDIYA PUSPITA SARI	84.20	84.75	84.48	90	90	90
MUHANDISAMUS KHIR	78.53	79.61	79.07	88	88	88
RAHMATUL FAUZIAH AKMAL	73.19	73.45	73.32	90	90	90
REGITA NURRAHMADANI	73.98	74.12	74.05	90	90	90
TASHA AURA ASYINANDANI	86.04	86.18	86.11	90	90	90
WIRANTI HADISTA PURI	84.89	85.20	85.04	90	90	90
Maharani Pratiwi	85.19	85.45	85.32	90	90	90
			81.73			89.59

The Predicate of PLO for Each Students

Students	PLO 5	PLO 10
GITA FITRI MUZELLA	G	E
AinayLizana	E	E
DitriWilymandayanti	E	E

PutriAsifa	E	E
RafikaUlfaHasanah	G	E
Tiara Anggraini	E	E
EgiWahyuniFentri	G	E
Nursifah	E	E
PutriMayang Sari	E	E
UciDesrika	G	E
Nakhwanisa	E	E
PARFI AGUSFINDA	G	E
ALFARINI OCTALIANA	G	E
FEBY KRISTINA	E	E
MELISA TRI AMIZA	E	E
NIAKMATUL HUSNI	E	E
RIZKA AULYANI VERNELLI	G	E
AINA NOVITA IRKA	G	E
ALWIS FITRI NANDA	G	E
AULIA FATMAWATI	G	E
AZIZAH ADRIS	E	E
CHANTIKA ENZA SUHENDRI	E	E
DINDA AGUSTIN SUHARDI	E	E
DONI PRATIWI	G	E
FAISAL AMRI TANJUNG	E	E
FAUZIAH ANNISA RAHMA	E	E
HAIRUNISA JEFLIN	E	E
LIDIYA PUSPITA SARI	E	E
MUHANDISAMUSKHIR	G	E
RAHMATUL FAUZIAH AKMAL	G	E
REGITA NURRAHMADANI	G	E
TASHA AURA ASYINANDANI	E	E
WIRANTI HADISTA PURI	E	E
Maharani Pratiwi	E	E

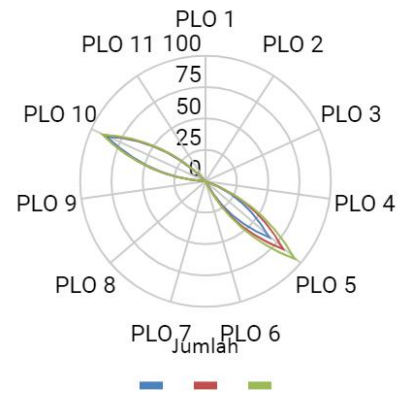
LEARNING OUTCOMES ANALYSIS	PLO Assessment Rubric																									
	PLO	Description	Excellent	Good	Satisfy	Fail																				
	5	Able to use general knowledge concepts to support professional teacher competencies	Students can mention, explain and apply general knowledge concepts with an error rate of <20%	Students can mention, explain and apply general knowledge concepts with an error rate of <35%	Students can mention, explain and apply general knowledge concepts with an error rate of <50%	Students can mention, explain and apply general knowledge concepts with an error rate of > 50%																				
10	Able to show a responsible attitude in their own work and can be given responsibility for the achievement of group works (S1)	Students are able to meet / show the PLO 10 (S1) indicator with a percentage $80\% \leq S1 \leq 100\%$	Students are able to meet / show the PLO 10 (S1) indicator with a percentage $65\% \leq S1 < 80\%$	Students are able to meet / show the PLO 10 (S1) indicator with a percentage $50\% \leq S1 < 65\%$	Students are able to meet / show the PLO 10 (S1) indicator with a percentage $S1 < 50\%$																					
<table border="1" data-bbox="862 895 1727 1412"> <thead> <tr> <th colspan="3" data-bbox="1048 895 1727 970"> Classical Value of PLO </th> </tr> <tr> <th data-bbox="1048 970 1294 1045"></th> <th data-bbox="1048 970 1294 1045"> PLO 5 </th> <th data-bbox="1294 970 1727 1045"> PLO 10 </th> </tr> </thead> <tbody> <tr> <td data-bbox="862 1045 1048 1120"> Max </td> <td data-bbox="1048 1045 1294 1120"> 94.72 </td> <td data-bbox="1294 1045 1727 1120"> 90.00 </td> </tr> <tr> <td data-bbox="862 1120 1048 1195"> Average </td> <td data-bbox="1048 1120 1294 1195"> 81.73 </td> <td data-bbox="1294 1120 1727 1195"> 89.59 </td> </tr> <tr> <td data-bbox="862 1195 1048 1270"> Min </td> <td data-bbox="1048 1195 1294 1270"> 67.88 </td> <td data-bbox="1294 1195 1727 1270"> 86.00 </td> </tr> <tr> <th colspan="3" data-bbox="1048 1270 1727 1345"> Achievement Number of PLO </th> </tr> <tr> <td data-bbox="862 1345 1048 1412"> E </td> <td data-bbox="1048 1345 1294 1412"> 20 </td> <td data-bbox="1294 1345 1727 1412"> 34 </td> </tr> </tbody> </table>						Classical Value of PLO				PLO 5	PLO 10	Max	94.72	90.00	Average	81.73	89.59	Min	67.88	86.00	Achievement Number of PLO			E	20	34
Classical Value of PLO																										
	PLO 5	PLO 10																								
Max	94.72	90.00																								
Average	81.73	89.59																								
Min	67.88	86.00																								
Achievement Number of PLO																										
E	20	34																								

G	14	0
S	0	0
F	0	0
	Achievement Percentage of PLO (%)	
E	58.82	100.00
G	41.18	0.00
S	0.00	0.00
F	0.00	0.00
	100	100

Achievement PLO



Classical Value of PLO



STUDENTS'

Based on PLO analysis of each student in the Psychology of Mathematics Instructions course shows that students can master the

LEARNING PERFORMANCE ANALYSIS	<p>material in the course. From 34 students, it was obtained that the average value of PLO 5 is 81.73 and the average value of PLO 10 is 89.59.</p> <p>Students' achievement in this course can be seen based on percentage of PLO achievement criteria, that is 58.82% Excellent, 41.18% Good for PLO 5 and in PLO 10, it was obtained 100% Excellent.</p>
RECOMMENDATION FOR FUTURE LEARNING	<p>There are several things that are recommended for improvement for the next lecture, namely:</p> <p>Maintain a learning pattern that activates students through group discussions and presentations so that students are better prepared to learn any material given.</p>
RECOMMENDATION FOR INSTITUTION	<p>No recommendation</p>

Dosen : Tim Dosen
Hari/Tanggal :
Waktu : 100 menit

Soal:

1. As a prospective mathematics teacher, what do you think are the goals and benefits of studying the psychology of learning mathematics, and how is the psychology of learning related to the nature of mathematics. Give a detailed explanation for each of your answers! (CO1)
2. Based on the 2013 curriculum in learning, teachers need to develop character education for students. Explain the relationship between the character of students and the characteristics of mathematics in character education, give an example! (CO1)
3. Each individual has a different learning style. Explain the meaning of the types of learning styles that you have studied, and state the characteristics of each of these learning styles! (CO1)
4. During your education at the elementary school level and high school level, you must have experienced obstacles in learning mathematics, especially in solving problems, which resulted in failure or at least made a disturbance in the progress of learning mathematics. Put forward:(CO1)
 - a. The cause of the math learning difficulties you are facing! What steps did you take to overcome the learning difficulties you faced!
 - b. As a prospective teacher who will go directly to the world of education.
5. Explain: (CO2)
 - a. the difference between cognitive learning theory and behavioral learning theory, and what are the benefits of studying these theories for mathematics teachers!
 - b. From the experts in each of these theories, explain whose theory can be used in learning mathematics, explain your answers and include examples!
 - c. strengths and weaknesses of behavioral psychology-based learning theory and cognitive psychology-based learning theory when applied in learning mathematics!
6. The principles and characteristics of learning according to Aisubel are meaningful learning and rote learning. (CO2)
 - a. What is the difference between meaningful learning and rote learning? Which is better to apply in learning mathematics? Give reasons!
 - b. Give an example of implementing meaningful learning in mathematics learning materials?

Dosen : Tim Dosen
Hari/Tanggal :
Waktu : 100 menit

Soal:

1. Mathematics is a subject that according to some students is a difficult subject so that it often creates anxiety, for that, noticing is needed. Explain

- a. what is meant by anxiety and noticing? Give an example based on your experience in learning mathematics regarding these two concepts
- b. Why are these two issues important for all teacher candidates to understand?
- c. how to overcome anxiety and increase awareness in learning mathematics?, Include examples!

(CO1)

2. Explain about the authoritarian teacher and the democratic teacher, what are their strengths and weaknesses, what is the impact on learning mathematics!

Give an example! (CO1)

3. a. What is the difference between intuitive and reflective intelligence?

b. can this intelligence be developed through learning mathematics?, give an example!

(CO2)

4. a. What is the difference between short term memory and long term memory? (CO2)

b. Learning can be said to be effective if the information received by students can be stored properly in Long Term Memory. Explain what you can do so that the material you learn can be remembered for a long time! (CO2)

5. a. Explain your understanding of metacognition, how important is it for prospective teachers?

b. Give an example in learning mathematics!

ASSIGNMENT

1. Please discuss in your group .
2. Make a group paper and slide presentation with the topics below (CO 1 for a-e) and (CO 2 for f-j).
 - a. Explain the notion of psychology, learning psychology, mathematics learning psychology, ; the nature of mathematics, the characteristics of mathematics, and the objectives of learning mathematics
 - b. character education in mathematics learning, individual characteristics based on learning styles, gender, heredity, and environment
 - c. procedures for forming mathematical concepts and schema ideas in understanding mathematical concepts
 - d. the meaning of each noticing, anxiety, authoritarian, democratic, in mathematics learning; interpersonal and emotional factors, various types of imagery
 - e. the ability to relate to the school environment
 - f. Distinguishing various learning theories based on cognitive psychology
 - g. Distinguishing various learning theories based on behavior psychology
 - h. Distinguishing learning theories based on cognitive psychology and behavior psychology, and its application in mathematics
 - i. Distinguishing its application in mathematics
 - j. Distinguishing short term memory, long term memory, and metacognition

AFECTIVE/ATTITUDE ASSESSMENT FORMAT

Section :
 Course Name :
 Course Code :
 Lecturer :
 Students :
 NIM :

Instructions :

- a) This assessment is carried out based on observations / observations of students carried out while attending lectures in 1 semester .
- b) The assessment is carried out by giving a checklist (√) in the appropriate column.

No	Attitude Assessment Indicators	4	3	2	1	0	Score
1.	Students follow the instructions given by the lecturer						
2.	Students participate in class discussions						
3.	Students complete each assignment given by the lecturer						
4.	Students maintain attendance rates above 80% in 1 semester						
5.	Students demonstrate punctuality when attending lectures						
6.	Students demonstrate punctuality when submitting each personal assignment						
7.	Students follow the instructions given in group work						
8.	Students participate in group discussions						
9.	Students fulfill / complete the assignments / responsibilities given by the group						
10.	Students organize tasks for each group member (leadership)						
11.	Students demonstrate punctuality when collecting each group assignment						
SCORE TOTAL							
AVERAGE SCORE							

AFFECTIVE ASSESSMENT ANALYSIS

Assessment of the Affective Value / Attitude of Subjects

$$AffectiveValue = \frac{ScoreTotal \times 100}{44}$$

Percentage of Achievement PLO 10 (Affective / Attitude) (symbolized by S1)

$$S1 = \frac{ScoreTotal}{44} \times 100\%$$

Conclusion on the PLO 10 Achievement Assessment (affective) can use the interval from the Mean Affective Score (RS1) or the interval from the percentage of achievement of PLO 10 (S1)

Range/Interval	Percentage	Conclusion
$0 \leq RS1 < 1,5$	$0\% \leq S1 < 37,5\%$	Fail
$1,5 \leq RS1 < 2,5$	$37,5\% \leq S1 < 62,5\%$	Satisfy
$2,5 \leq RS1 < 3,5$	$62,5\% \leq S1 < 87,5\%$	Good
$3,5 \leq RS1 \leq 4$	$87,5\% \leq S1 \leq 100\%$	Excellent

RUBRIC TO DETERMINE AFFECTIVE ASSESSMENT SCORES

No.	Affective Indicators	Score 4	Score 3	Score 2	Score 1	Score 0

1.	Students follow the instructions given by the lecturer	Students follow instructions given by the lecturer, both in class and outside the classroom with a relatively fast response (direct instruction is carried out)	Students follow instructions given by the lecturer, both in class and outside the classroom with a fairly fast response (instructions are carried out but with a time lag)	Students follow the instructions given by the lecturer, both in class and outside the class, but the response is carried out after the instructions are reminded again to the students.	Students follow the instructions given by the lecturer, but only instructions are given in the classroom. Instructions outside the classroom, are not carried out.	Students never follow instructions given by lecturers, both inside and outside the classroom.
2.	Students participate in class discussions	Students participate in class discussions, by showing 4 attitudes: 1) Pay attention to class discussions well 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in maintaining class conditions so that it	Students participate in class discussions, by showing 3 attitudes from: 1) Pay attention to class discussions well 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in maintaining class	Students participate in class discussions, by showing 2 attitudes: 1) Pay close attention to class discussions 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in maintaining class conditions so that it	Students participate in class discussions, by showing 1 attitude: 1) Pay close attention to class discussions 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in maintaining class conditions so that it	Students do not participate in class discussions, by not showing these four attitudes.

		is conducive to discussion	conditions so that it is conducive to discussion	is conducive to discussion	is conducive to discussion	
3.	Students complete each assignment given by the lecturer	Students complete each assignment given by the lecturer with a 100% percentage of complete files / assignments	Students complete each assignment given by the lecturer with the percentage of completeness of files / assignments > 90%	Students complete each assignment given by the lecturer with the percentage of completeness of files / assignments > 80%	Students complete each assignment given by the lecturer with the percentage of completeness of files / assignments > 70%	Students complete each assignment given by the lecturer with a percentage of completeness of files / assignments < 70%
4.	Students maintain attendance rates above 80% in 1 semester	Students maintain class attendance rates for 1 semester with a percentage of 100%	Students maintain class attendance rates for 1 semester with a percentage of > 90%	Students maintain class attendance rates for 1 semester with a percentage of > 85%	Students maintain class attendance rates for 1 semester with a percentage of > 80%	Students maintain class attendance rates for 1 semester with a percentage of < 80%
5.	Students demonstrate punctuality when attending lectures	Students have been present in class before the lecturer arrives.	Students attend class at the same time as the lecturer.	Students attend class when the lecturer is already in class but is preparing for college.	Students attend class when the lecturer has stood in front of the class but has not delivered a lecture.	Students are present in class when the lecturer has lectured in front of the class.
6.	Students demonstrate punctuality when submitting each personal assignment	The percentage of personal assignments submitted by students before the deadline is 100%.	The percentage of personal assignments submitted by students before the deadline is > 90%.	The percentage of personal assignments submitted by students before the deadline is > 80%.	The percentage of personal assignments submitted by students before the deadline is > 70%.	The percentage of personal assignments submitted by students before the deadline is < 70%.

7.	Students follow the instructions given in group work	Students follow instructions given during group work, both inside and outside the classroom with a relatively fast response (direct instructions are carried out)	Students follow the instructions given during group work, both in class and outside the classroom with a fairly fast response (instructions are carried out but with time lag)	Students follow the instructions given during group work, both in class and outside the classroom, but the response is carried out after the instructions are reminded again to the students.	Students follow the instructions given during group work, but only instructions are given in class. Instructions outside the classroom, are not carried out.	Students never follow the instructions given during group work, both inside and outside the classroom.
8.	Students participate in group discussions	Students participate in group discussions, by showing 4 attitudes: 1) Pay close attention to group discussions 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in work according to their	Students participate in group discussions, by showing 3 attitudes: 1) Pay close attention to group discussions 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in work according to their	Students participate in group discussions, by showing 2 attitudes: 1) Pay close attention to group discussions 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in work according to their	Students participate in group discussions, by showing 1 attitude: 1) Pay close attention to group discussions 2) Participate in submitting suggestions / comments / ideas 3) Do not do other things that have nothing to do with the discussion 4) Participate in work according to their	Students do not participate in group discussions, by not showing these four attitudes.

		role in the group	role in the group	role in the group	role in the group	
9.	Students fulfill / complete the assignments / responsibilities given by the group	Tasks / responsibilities given by the group can be completed properly and help in completing the tasks / responsibilities of other members of the group.	The tasks / responsibilities given by the group cannot be completed properly but they help to complete the tasks / responsibilities of other members of the group.	Tasks / responsibilities given by the group, can be completed properly but do not contribute to completing the tasks / responsibilities of other members of the group.	Tasks / responsibilities given by the group cannot be completed properly and do not contribute to completing the tasks / responsibilities of other members.	Students do not do assignments that are the responsibility of the group.
10.	Students organize tasks for each group member (leadership)	Students show roles such as group leaders, who have the initiative to act, lead discussions, divide roles / tasks among members & maintain group cohesiveness	Students show a role like group leaders, but have not been able to fulfill all of the following attitudes, namely those who have the initiative to act, lead discussions, divide roles / tasks among members & maintain group cohesiveness	Students show a role as members who actively provide responses and ideas in discussions and contribute to the completion of group assignments.	Students show a role as members who are less active in providing responses and ideas in discussions but contributing to the completion of group assignments.	Students do not show a role like chairman and do not show a role as members who contribute to group work
11.	Students demonstrate punctuality when collecting each	The percentage of group assignments submitted by students before the deadline is 100%.	The percentage of group assignments submitted by students before the deadline is > 90%.	The percentage of group assignments collected by students before the deadline is > 80%.	The percentage of group assignments collected by students before the deadline is > 70%.	The percentage of group assignments collected by students before the deadline is <70%.

	group assignment					
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