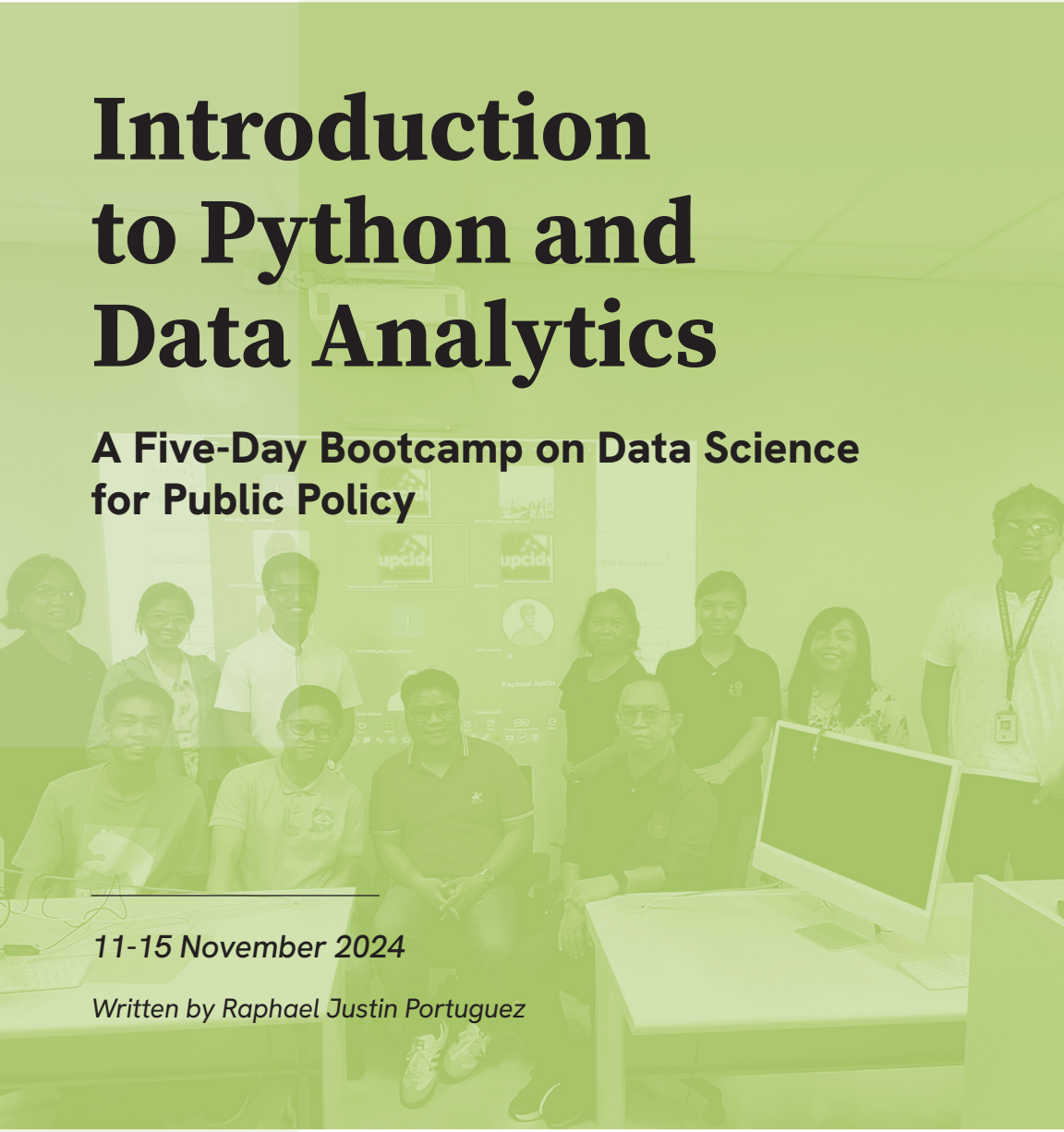
Proceedings 2025-34

Introduction to Python and Data Analytics

A Five-Day Bootcamp on Data Science for Public Policy



11-15 November 2024

Written by Raphael Justin Portuguez

upcids Data Science for Public Policy

UNIVERSITY OF THE PHILIPPINES
CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES

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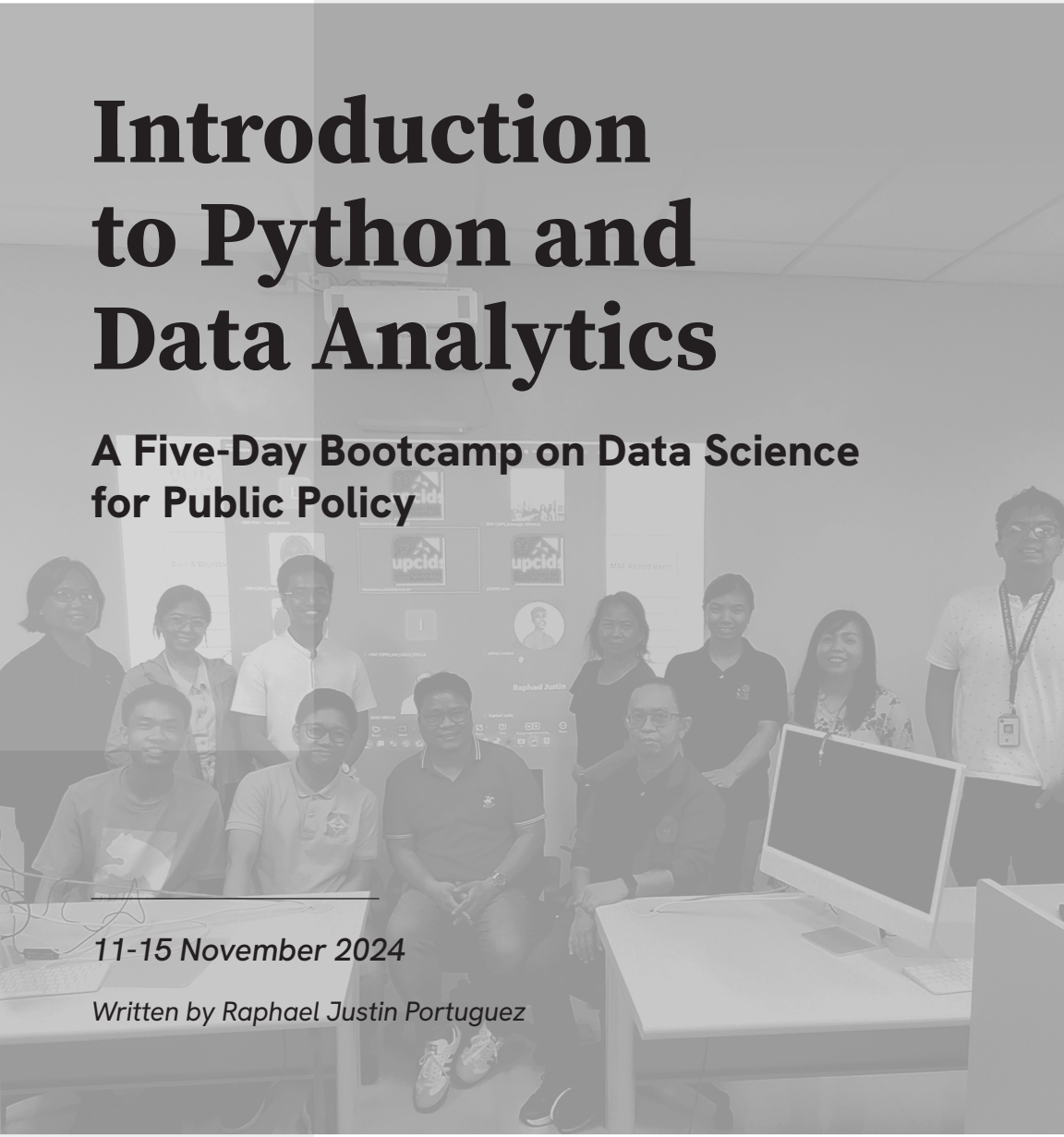

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"DSPPP convenor and staff, Asst. Prof. Jonathan B. Mamplata, his training assistants, and participants after the events of the 2nd day of the Five-Day Boot Camp held in UP Los Baños"

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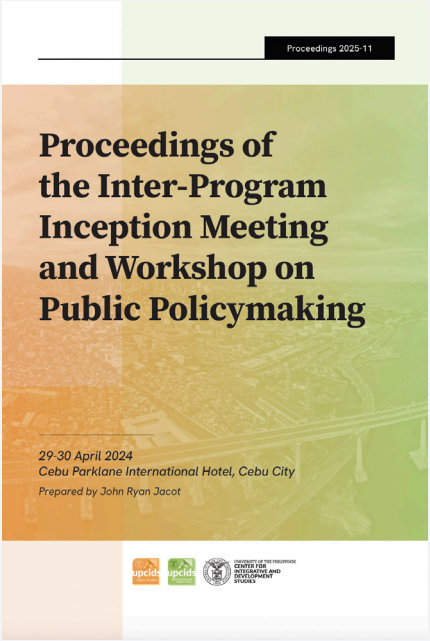

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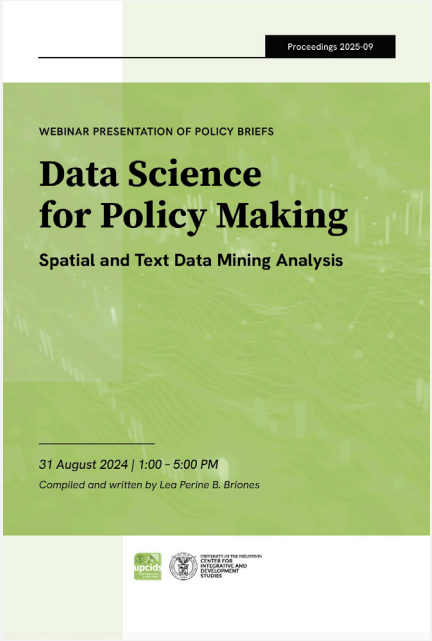

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About the Proceedings

The Program on Data Science for Public Policy of the U.P. Center for Integrative and Development Studies (CIDS) piloted the first ever five-day bootcamp for 2024 with the theme: "Intro to Python and Data Analytics." The bootcamp, designed to foster learning, was conducted for the participants to learn policy making and Python concepts. In this bootcamp, the presentation of the freshly-developed Policy Analytics 1.0 was shared to the participants for utilization and feedback.

Two distinguished UP Faculty members served as lecturers and brought their skills, knowledge, and experiences to the capacity-building program: (1) Dr. Ebinezer Florano, the current convenor of the Data Science for Public Policy Program (DSPPP) focused on the public policy brief making for first two days, and (2) Prof. Jonathan Mamplata of the Institute of Mathematical Sciences, University of the Philippines Los Baños, provided the three days of theories and practicum on data science applications, such as Python Programming, Machine Learning, and Data Visualization.

Mr. Raphael Portuguez delivered a lecture and a mini-tutorial on the Policy Analytics 1.0 program, which he developed.

DAY ONE

Lecture on Policy Briefs

Dr. Ebinezer Florano

Dr. Florano delivered a lecture on policy briefs. According to him, "A policy brief presents a concise, summary, concise summary of information that can help readers understand and likely make decisions about government policies." He described a policy brief as "a concise summary of what you have studied, or you will be studying so that we can influence decision and policy making in government. No policy briefs may give objective summaries of relevant research."

Dr. Florano emphasized that policy briefs should be accessible. Accessible policy briefs are helpful especially when talking to policy makers. He also raised the importance of being specific on"what type of policy we want to be achieved or not."

He also used the slide below as an example of a policy brief:

He emphasized to ask one's self "What is the problem being tackled?" Moreover, he expects that there will be high-level quantitative or qualitative analyses involved in the creation of the policy brief.

Dr. Florano mentioned the importance of conclusions and policy recommendations in a policy brief. Examples of policy recommendations include: (1) amending Republic Act no. 7941, (2) crafting and passing a law to strengthen political parties, and (3) passing a law to implement the provisions on sectoral representation at the local level.

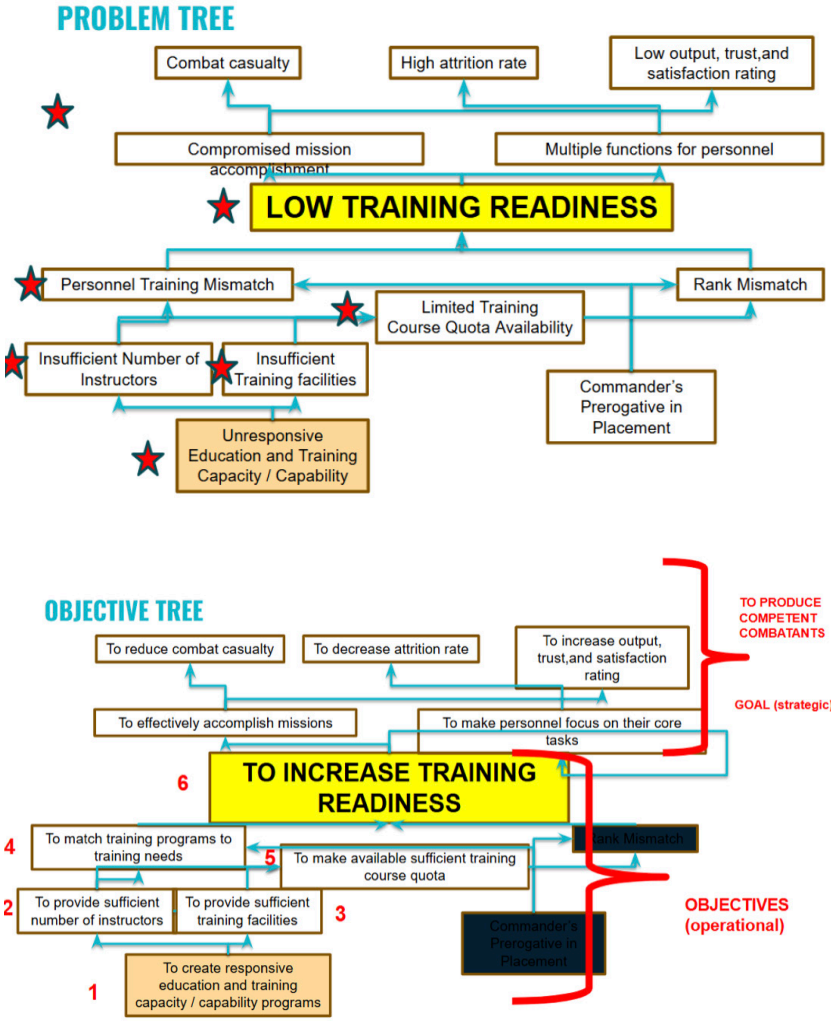
Dr. Florano also spoke about root causes and policy alternatives. He underscored that there has to be at least three policy alternatives to solve a problem. According to him, effectiveness, efficiency, and acceptability are important criteria in determining the ideal policy alternative. Dr. Florano demonstrated the benefit of using problem trees and solution trees.

P

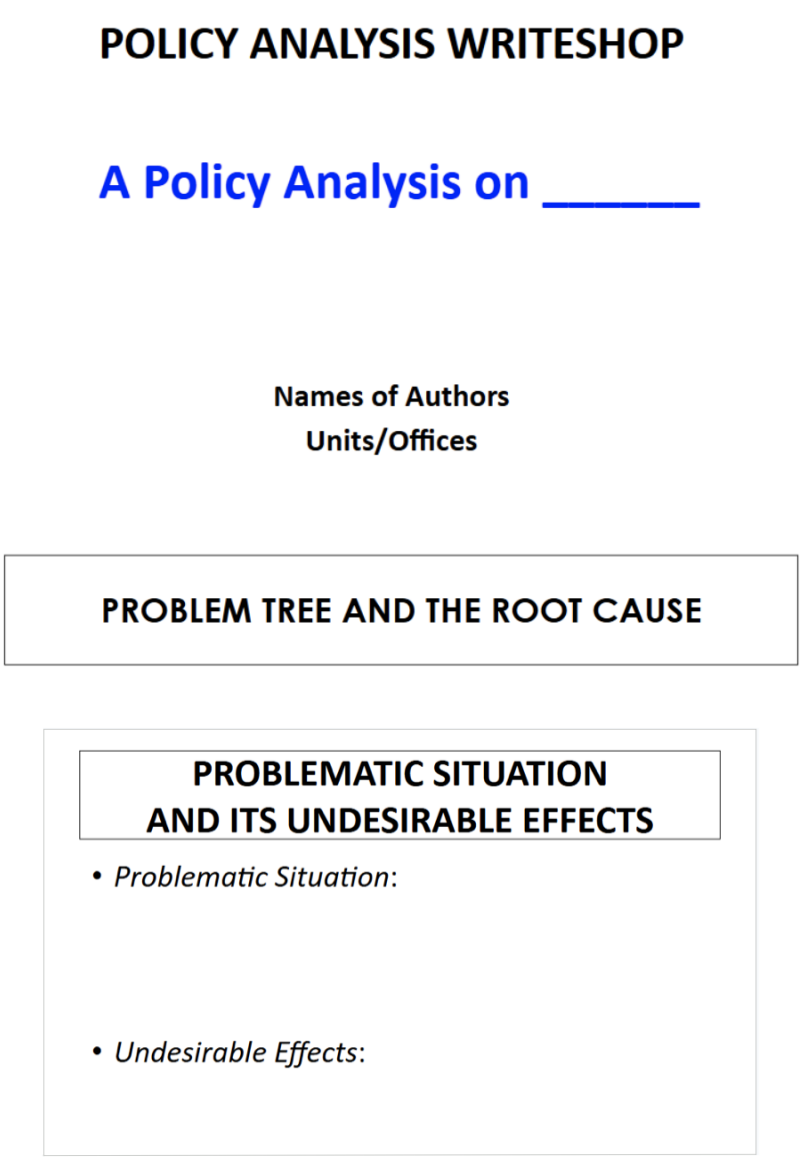
A

S

ELEMENTS OF POLICY ISSUE PAPER	POLICY-INFORMATIONAL COMPONENT	POLICY-ANALYTIC METHOD
Letter of transmittal Executive summary I. Background of the problem A. Description of the problem B. Outcomes of prior efforts to solve problem	**Observed Outcomes**	**Monitoring**
II. Scope and severity of problem A. Assessment of past policy performance B. Significance of problem situation C. Need for analysis	**Policy Performance**	**Evaluation**
III. Problem statement A. Definition of the problem B. Major stakeholders C. Goals and objectives D. Measures of effectiveness E. Potential solutions	**Policy Problems**	**Problem Structuring**
IV. Policy alternatives A. Description of alternatives B. Comparison of future consequences C. Spillovers and externalites D. Constraints and political feasibility	**Expected Outcomes**	**Forecasting**
V. Policy recommendations A. Criteria for recommending alternatives B. Description of preferred alternative(s) C. Outline of implementation strategy D. Provisions for monitoring and evaluation E. Limitations and unanticipated consequences	**Preferred Policy**	**Prescription**
References Appendices		



In the Policy Analysis Writeshop, Dr. Florano also gave tips on writing a title. He underscored that a title can be positive or neutral, but never in the negative.



He also emphasized that the focus must be on the problem of the stakeholders and mentioned that it is every policy analyst's duty to figure out if the government is presently doing something to solve the situational problem. Relating this to his discussion on problem and solution trees, Dr. Florano highlighted the importance of a multi-stakeholder consultation.

CURRENT EFFORTS/MEASURES OF THE GOVERNMENT TO SOLVE THE SITUATIONAL PROBLEM		
EFFORT/MEASURE	**ACCOMPLISHMENT(S)**	**ASSESSMENT**

Lecture on Communicating and Advocating for Policy Reforms

Dhanicca Amor M. Domingo

Ms. Domingo first introduced the newly institutionalized policy lab: the Development Innovations and Policy Laboratory (DIP Lab). She specified its aim to link science and research with policy.

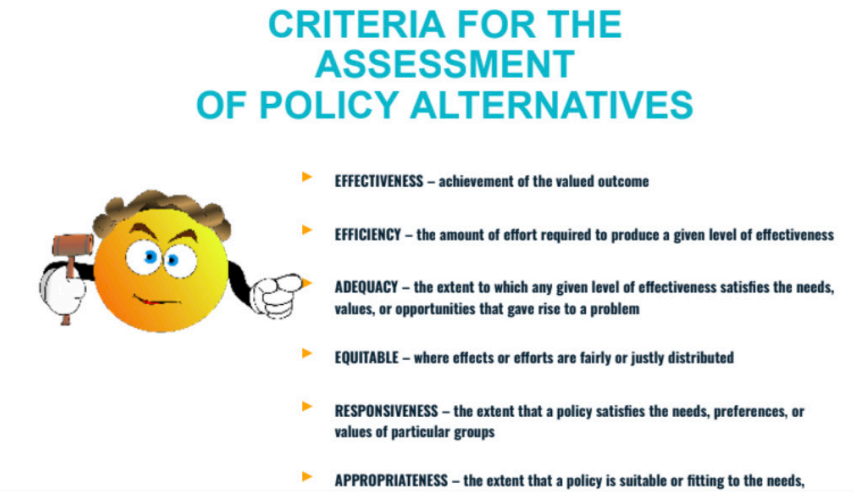
In her lecture she reminded the participants that researchers' and analysts' jobs do not end immediately with research but must be able to relay the results to stakeholders. Moreover, she added that "Anyone can be a researcher but not all researchers can be effective communicators." She also included a mini-exercise to test the translation skills of the participants.

DAY TWO

Morning Lecture

Dr. Ebinezer Florano

Dr. Florano started the lecture with the criteria for the assessment of policy alternatives. He explained six: Effectiveness, Efficiency, Adequacy, Equitableness, Responsiveness, and Appropriateness. Effectiveness is based on the goals and objectives. Efficiency deals with input versus output. Adequacy is mentioned to be a difficult criterion to discuss.



The effectiveness, efficiency, and acceptability criteria can be measured qualitatively and quantitatively in the following ways:

SELECTED QUALITATIVE AND QUANTITATIVE METHODS FOR THE ASSESSMENT OF POLICY ALTERNATIVES

CRITERION	QUALITATIVE METHOD	QUANTITATIVE METHOD
Effectiveness	Policy Delphi	Effectiveness-Cost Ratio
Efficiency	Intangible Cost-Benefit Analysis	Tangible Cost-Benefit Analysis
Acceptability	Stakeholder Analysis	PRINCE Political Accounting System

Source: Florano, 2004-2018

ASSESSMENTS OF THE POLICY ALTERNATIVES: QUALITATIVE

ALTERNATIVE	EFFECTIVE-NESS (Policy Delphi)	EFFICIENCY (Intangible Cost-Benefit Analysis: Cost-Benefit Ratio)		ACCEPTABILITY TO POLICY STAKEHOLDERS (Stakeholder Analysis)		
		BENEFITS	COSTS	SUPPORTERS	NEUT-RAL	OPPOSITORS
Alt. 1: Status quo	***	Ben1	Cost1 Cosy2 Cost3	Sup1	Neu1	Opp1 Opp2 Opp3
Alt. 2: Abolish X by repealing RA 123	*****	Ben1 Ben2 Ben3 Ben4	Cost1 Cosy2 Cost3	Sup1 Sup2 Sup3 Sup4	Neu1	Opp1 Opp2 Opp3
Alt. 3: Modify X by amending RA 123	****	Ben1 Ben2 Ben3 Ben4	Cost1	Sup1 Sup2 Sup3 Sup4	Neu1	Opp1

Source: Florano, 2004-2018

ASSESSMENTS OF THE POLICY ALTERNATIVES: QUANTITATIVE

ALTERNATIVE	EFFECTIVENESS (Effectiveness-Cost Ratio)	EFFICIENCY (Tangible Cost-Benefit Analysis: Cost-Benefit Ratio)	ACCEPTABILITY TO POLICY STAKEHOLDERS (PRINCE Political Accounting System)
Alt. 1: Status quo	ECR = 0.5	BCR = 1.5	POS =95%
Alt. 2: Abolish X by repealing RA 123	ECR = 3.0	BCR = 2.0	POS = 95%
Alt. 3: Modify X by amending RA 123	ECR = 1.50	BCR = 3.0	POS = 90%

Source: Florano, 2004-2018

Dr. Florano also gave a spotlight on Forecasting and Interrupted Time-Series Forecasting. Policy Delphi was explained even further. He also mentioned that simple regression will be the main focus for forecasting.

THREE APPROACHES IN THE FORECASTING OF POLICY FUTURES/EXPECTED OUTCOMES IN POLICY ANALYSIS

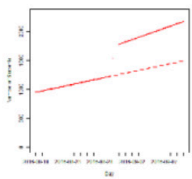
Approach	Basis	Methods
Extrapolative forecasting – forecasts of future societal states based on past, current, and historical data; inductive	Trend extrapolation	Classical time-series analysis Linear trend estimation Exponential weighting Data transformation Catastrophe methodology
Theoretical forecasting – predictions of future societal states on the basis of theoretical propositions and current and historical data; deductive	Theoretical laws and propositions	Theory mapping Causal modelling Regression analysis Correlation analysis
Judgmental forecasting – attempts to elicit and synthesize informed judgments from experts and other "knowledgeables"	Expert judgment	Classical Delphi Policy Delphi Cross-impact analysis Feasibility forecasting

On discussing the purpose of forecasting the policy futures, Dr. Florano set the spotlight on the possibility of policy interventions and how year-time frames are common in performing regression analysis; this method was also used in the Policy Analytics 1.0 program.

PURPOSE OF FORECASTING THE POLICY FUTURES

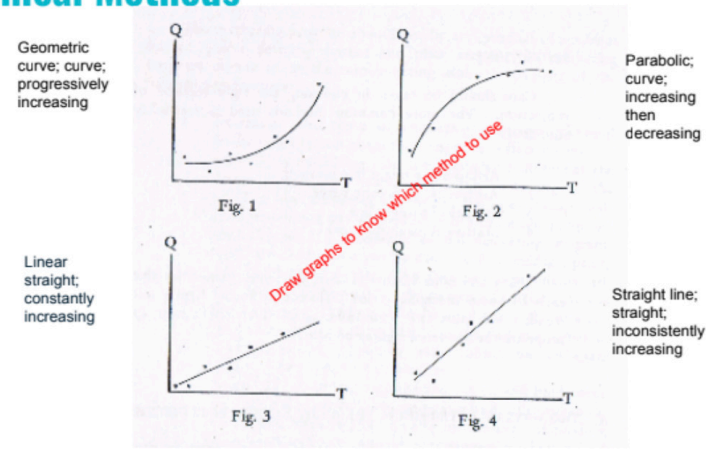
1. To determine the trajectory of the problem with or without the policy intervention; and

2. To forecast the possible outcomes of the policy alternatives based on a criterion or a set of criteria.



He also mentioned how different regression analyses and different kinds of data can also produce different equations and lines.

FORECASTING: Graphical Methods



Dr. Florano also highlighted the technical difficulties in using Interrupted time series analysis (ITSA), particularly the data to use and the establishment of causality between variables in each policy alternative.

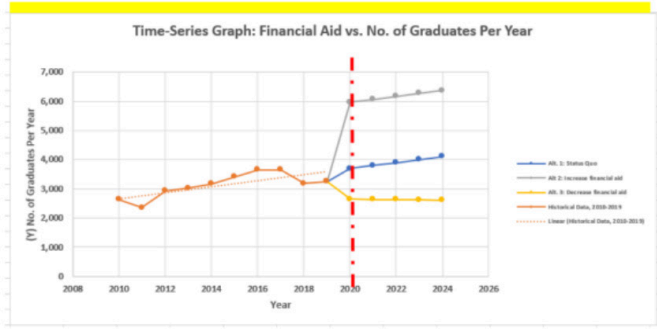
TECHNICAL DIFFICULTIES IN USING ITSA

1. Data, data, data – historical data for the status quo and the policy alternatives
2. Establishing causality between the dependent variable of the scenario and the independent variables of each of the policy alternatives

To perform simple linear regression, one must master the slope-intercept form of the linear equation (y = mx + b) where m is the slope and b is the intercept. He also mentioned that this is best done in Excel. This is important in determining the y-values for all policy alternatives. He also showed that all lines can be displayed in one graph; hence, this would encompass all policy alternatives.

Step 4: Create a Time-Series graph with all the forecasted values of Variable Y in the horizontal axis for all Policy Alternatives with the Year in the vertical axis. Draw the line for the year of policy intervention.

(1) Place the cursor where you want to put your graph. (2) Click/check: Insert - Scatter - Scatter with Smooth Lines & Markers - Select Data - Input Label, X Values range, and Y values range - OK



Dr. Florano also presented Policy Delphi, which he explains is done by the policy decision makers themselves. Here, all options are presented. He mentioned that anything can happen in a Policy Delphi session. There is also a template in creating a Policy Delphi session. Finally, there are also methodological requirements in order for a Policy Delphi session to occur.

POLICY DELPHI

A tool for the **analysis of policy issues**

Rests on the premise that the decision maker is interested in having an informed group **present all the options** and **supporting evidence for his consideration**.

He then moved on to Intangible Cost-Benefit Analysis which involves mainly monetary value. Dr. Florano defined what “cost” and “benefit” are and how they differ from each other. There are also different types of costs and benefits.

The steps in performing this analysis were also discussed, from identifying stakeholders and beneficiaries to making a final recommendation. An example of this was the Dolomite White Sand Beach by the Manila Bay, where participants are asked to enumerate the intangible costs and benefits and to answer whether which outweighs which. Dr. Florano would go on to discuss the Stakeholder Analysis method which involves looking at the perspectives of the stakeholders which could be positively or negatively affected by the policy once it is declared. He also mentioned that stakeholders could also refer to the actors. The steps were also defined, from identifying and investigating the stakeholders to assessing their powers and making a political judgement. He then used the following as an example:

EXERCISE- Alternative 1: Stock distribution option under CARP

Player (Stakeholder + Actor)	Position/ Stand	Motivations/ Values/Beliefs	Sources of Power
Farmers			
Landlords			
House of Representatives			
Department of Agrarian Reform			

Will Alternative 1 be adopted? Why or why not?

The participants were also asked to answer the following exercise regarding computations for Benefit-Cost Ratio, Cost-Effectiveness Analysis, and PRINCE Score:

EXERCISE: B-C Ratio Alternative 2

Instruction: Compute the B-C Ratio with r = 10%. .

YEAR	BENEFITS (A)	COSTS (B)
2018	0	3,000,000
2019	1,000,000	100,000
2020	1,000,000	100,000
2021	1,000,000	100,000
2022	1,000,000	100,000
2023	1,000,000	100,000
Total	5,000,000	3,500,000

EXERCISE: COST-EFFECTIVENESS ANALYSIS

Instructions: Compute the C-E and E-C Ratios. Answer the questions below.

Alt.	(Discounted) Costs	Estimated No. of Passengers	E-C Ratio	C-E Ratio
1	50,000	75,000		
2	200,000	584,000		
3	500,000	753,000		
4	250,000	638,000		

Questions:

A. If the management decides to choose a new route, which do you think is the best route that can serve at least 500,000 passengers? What type of a problem is this? What type of analysis is this? Which ratio is needed?

B. If the management decides to choose a new route, which do you think is the best route that can fall within the budget limit of not more than P400,000? What type of a problem is this? What type of analysis is this? Which ratio is needed?

C. Which alternative is the best according to E-C Ratio and C-E Ratio?

Source: Florano, 2004-2018

EXERCISE: PRINCE

Instruction: Compute the Probability of Support (POS).

Alternative 1: Create a law mandating high school students to learn *Baybayin*.

Players	Issue Position	x	Power	x	Priority	=	Prince Score
Congress	1		5		2		
DepEd	3		4		4		
NHC	5		3		5		
HS students	(0)		1		1		
Teachers	1		1		1		
Parents	-5		1		5		

Calculation 2:

Calculation 3:

Calculation 4 (POS):

Interpretation:

Afternoon Lecture: Policy Analytics 1.0

Raphael Justin Portuguez

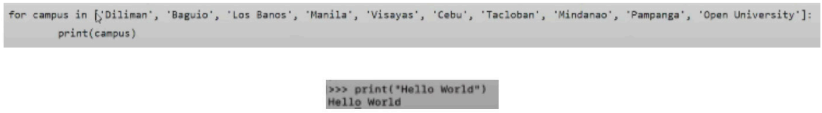
After Dr. Florano's lecture, Mr. Portuguez led the tutorial on how to install the Policy Analytics 1.0 program. While some people were able to install the program, others had problems. It is recommended that an installer for Mac and Linux users be created in order not to limit the program for Windows users.

DAY THREE

Morning Lecture: Installation of Python

Raphael Justin Portuguez

Mr. Portuguez gave a lecture on open-source software and the installation of Python. It is important to take note here that Python may have been installed already in the devices of some of the participants. However, it is even more important to make sure that the same version is being used to minimize confusion and disorder among the programs of the participants. Mr. Portuguez demonstrated sample beginner codes to make sure that the program works.

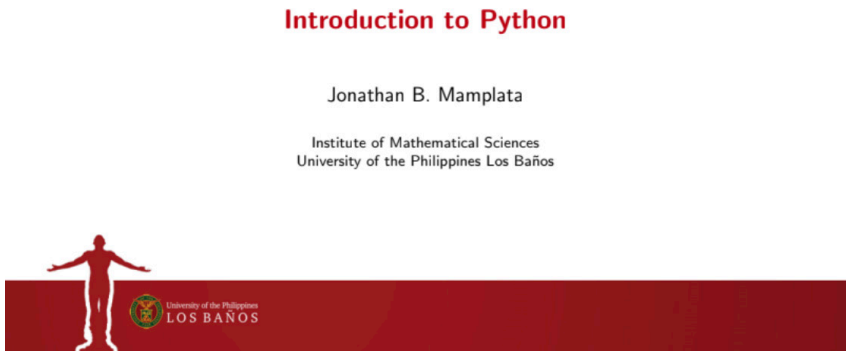


■ **Figure 21.**

Morning Lecture: Machine Learning

Jonathan B. Mamplata

Prof. Jonathan B. Mamplata delivered his lecture focusing on the introduction to Python, covering topics on variables and data types, looping constructs, functions, and reading files.



■ **Figure 22.**

He explained Python as a good tool since it is both open source and easier to use, compared to Java and C.

He also mentioned the six variables and data types: numeric, string, list, tuple, set, and dictionary. He also demonstrated how these variables are used through the following examples in the lecture:

```
a = 2
print( a, "is of type" , type(a) )

b = 1.5
print( b, "is of type" , type(b) )

c = 8 +3j
print( c, "is a type" , type(c) )

string1 = "Hello World"
print( string1 )

String1 = "Hello"
String2 = "World"
print( String1 + String2 )

List1[3] = "World"
print( List1 )

Tuple = ( 25,10,12.5,"Hello" )
print( "Tuple[1] =" , Tuple[1] )

print( "Tuple[0:3] =" , Tuple[0:3] )
```

```
Set = 4,3,6.6, "Hello"
print(Set)

Set[1] = 12
```

The next part of the lecture was control statements. Prof. Mamplata described the while loop as the following:

> While loop: It continually executes the statements (code) as long as the given condition is TRUE. It first checks the condition and then jumps into the instructions. While loops can be used inside python functions also.

While and for loops are included. Instances where the program produces the wrong output have arisen. It is also important to note that the particular piece of code shown below can also be run in the console and not just in Jupyter Notebook, considering that the console is widely used in college lectures:

```
num = 1
while num <= 5:
print( "Athan" )
num += 1
```

Prof. Mamplata also included an example which involves even numbers. A for-loop, however, can lessen the number of lines used if the following code is to be modified:

```
num = 1
even_numbers = []
while num <= 10:
if num % 2 == 0:
even_numbers .append(num)
num += 1
print( "Even Numbers list:" , even_numbers )
```

He also made use of dictionaries in the lecture. Dictionaries are good data types especially when fast access to elements is a priority.

```
example = { 'iterator' : 'dictionary' , 'loop' : 'for' ,
'operation' : 'display dictionary elements' }
for key in example:
print( f" key : example[key]" }
```

Prof. Mamplata made use of the variable x many times.

```
Example 6:
{x² : is a natural number less than 10.}
[x ** 2 for x in range(0,10)]

Example 7:
{x: x is a whole number less than 20, x is even}
[x for x in range(1,20) if x%2==0]

Example 8:
{x: x is an alphabet in word 'PUBLIC POLICY' , x is a vowel}
[x for x in 'PUBLIC POLICY' if x in ['A','E','I','O','U'] ]
```

In the modules part of the lecture, the first module he imported was the math module. He also imported the statistics module for the purpose of getting the mean, the median, the mode, and the standard deviation of different lists of integers.

```
import statistics
statistics.mean( [5,2,4,7,9] )
statistics.median( [5,2,4,7,9] )
statistics.mode( [5,2,4,7,9,2,4,4] )
statistics.stdev( [5,2,4,7,9,2,4,4] )
```

Prof. Mamplata also shared numpy to the participants. He cited it as “one of the most useful scientific libraries in Python programming.”

```
import numpy as np
Array
np.array( [1,2,3,4] , dtype=np.float32 )
np.array( [1,2.0,3,4] )
np.array( [[1,2,3,4] , [5,6,7,8]] )
```

DAY FOUR

Day Lecture: Data Analysis and Visualization

Jonathan B. Mamplata

Just like Prof. Mamplata did on the previous day, both he and the participants used Jupyter Notebook for the whole duration of the lecture. One highlight of this was the emphasis on data visualization methods, particularly the histogram. Moreover, before going into the histogram, Prof. Mamplata first taught the participants how to create dataframes. This skill is vital, since dataFrames contain the data collected from CSV files. These dataframes can have different dimensions of columns and rows depending on the number of classifications and number of datarows. It is from these dataframes that a data scientist can analyze and share information.

It is, however, important to note that histograms are not the only ways one can present data.

DAY FIVE

Morning Lecture: Machine Learning

Jonathan B. Mamplata

Prof. Mamplata gave the participants one machine learning lecture that can be used for their data. He machine learning "as a branch of artificial intelligence (AI) in computer science that focuses on using data and algorithms to enable AI to imitate the way that humans work, gradually improving its accuracy." He mentioned methods such as regression, classification, clustering, dimensionality reduction, deep learning, and reinforcement learning. He also enumerated the three types of machine learning algorithms: supervised learning, unsupervised learning, and reinforcement learning.

APPENDIX

Participants

November 11, 2024

Timestamp	Email Address	Full Name	College/Unit/Department	Designation
11/11/2024 10:21:22	kgcatapang1@up.edu.ph	Kabzeel Sheba G. Catapang	UPLB College of Development Communication	Assistant Professor
11/11/2024 10:21:38	ecvillaverde@up.edu.ph	ELEANOR VILLAVERDE	IBS, CAS	Assistant Professor
11/11/2024 10:22:42	mjgloria@up.edu.ph	Mac Ardy J. Gloria	UP Manila - College of Pharmacy - Department of Clinical, Social and Administrative Pharmacy	Associate Professor and Department Chair
11/11/2024 10:24:58	tacollantes@up.edu.ph	Therese Marie A Collantes	College of Veterinary Medicine	Associate Professor
11/11/2024 10:30:34	vcnesperos@up.edu.ph	Venice Jiezzelle C. Nesperos	CAFS/ASI	Asst.Prof.1
11/11/2024 10:31:43	admatanguihan@up.edu.ph	Anna Elaine D. Matanguihan	Department of Chemical Engineering	University Researcher I
11/11/2024 11:22:20	jdlosloso@up.edu.ph	Jeffrey Andrew Losloso	UPLB INREM	PTS
11/11/2024 11:33:08	lmatienza2@up.edu.ph	Lauro M. Atienza	CPAf/KMO	UES1
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11/11/2024 14:21:55	gbgamilla@up.edu.ph	Gimelle Gamilla-Amorosa	CAS/IMSP	Assistant Professor
11/11/2024 14:22:13	rejavier2@alum.up.edu.ph	Regine Joy Javier	UPLB-INREM	PTS1
11/11/2024 14:44:16	dmdomingo@up.edu.ph	Dhanicca Amor M. Domingo	Center for Strategic Planning and Policy Studies, College of Public Affairs and Development	University Researcher I
11/11/2024 14:56:33	agaylon@up.edu.ph	Arra Gaylon	UPLB CAFS NCPC	URA I
11/11/2024 15:45:40	vcnesperos@up.edu.ph	Venice Jiezzelle C. Nesperos	CAFS/ASI	Asst. Prof. 1

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Timestamp	Email Address	Full Name	College/Unit/Department	Designation
11/12/2024 8:39:43	abvillancio@up.edu.ph	Arnel B. Villancio Jr.	CAFS	Instructor
11/12/2024 8:39:55	admatanguihan@up.edu.ph	Anna Elaine D. Matanguihan	Department of Chemical Engineering	University Researcher I
11/12/2024 8:40:15	lmatienza2@up.edu.ph	Lauro M. Atienza	CPAf/KMO	UES1
11/12/2024 8:53:17	jdlosloso@up.edu.ph	Jeffrey Losloso	UPLB	PTS
11/12/2024 8:53:45	aialonte@up.edu.ph	Allen Jethro Alonte	College of Arts and Sciences/ Institute of Biological Sciences	Assistant Professor
11/12/2024 9:00:30	rejavier2@alum.up.edu.ph	Regine Joy Javier	UPLB-INREM	PTS1
11/12/2024 9:31:44	mjgloria@up.edu.ph	Mac Ardy J. Gloria	Department of Clinical, Social a	Associate Professor
11/12/2024 9:42:39	jvalonzo@up.edu.ph	John Carlo Alonzo	College of Agriculture and Foo	University Research Associate 2
11/12/2024 9:49:25	irperilla@up.edu.ph	Ian Carlo R. Perilla	CPAf/CSPPS/ DIP Lab	Project Technical Assistant
11/12/2024 14:29:57	abvillancio@up.edu.ph	Arnel B. Villancio Jr.	CAFS	Instructor
11/12/2024 14:30:34	rejavier2@alum.up.edu.ph	Regine Joy Javier	UPLB-INREM	PTS1
11/12/2024 14:35:33	jvalonzo@up.edu.ph	John Carlo Alonzo	College of Agriculture and Foo	University Research Associate 2
11/12/2024 14:35:37	lmatienza2@up.edu.ph	Lauro M. Atienza	CPAf/KMO	UES1
11/12/2024 15:05:19	jdlosloso@up.edu.ph	Jeffrey Andrew Losloso	UPLB	PTS

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Timestamp	Email Address	Full Name	College/Unit/Department	Designation
11/13/2024 8:47:18	pcmontoya@up.edu.ph	Pia Montoya	UPLB-INREM	Staff
11/13/2024 8:57:29	mjgloria@up.edu.ph	Mac Ardy J. Gloria	UPM CP - Department of Clinic	Associate Professor
11/13/2024 9:01:03	jdlosloso@up.edu.ph	Jeffrey Andrew Losloso	UPLB	PTS
11/13/2024 9:07:28	pcmontoya@up.edu.ph	Pia Montoya	UPLB-INREM	Staff
11/13/2024 9:08:40	jvalonzo@up.edu.ph	John Carlo Alonzo	College of Agriculture and Foo	University Research Associate 2
11/13/2024 9:17:50	admatanguihan@up.edu.ph	Anna Elaine D. Matanguihan	Department of Chemical Engin	University Researcher I
11/13/2024 9:32:47	rejavier2@alum.up.edu.ph	Regine Joy Evangelista	UPLB-INREM	PTS1
11/13/2024 10:22:49	jdlosloso@up.edu.ph	Jeffrey Andrew Losloso	UPLB	PTS
11/13/2024 13:22:30	javier-evangelista.r@omlopezce	Regine Joy Javier	UPLB-INREM	PTS1
11/13/2024 13:29:56	abvillancio@up.edu.ph	Arnel B. Villancio Jr.	CAFS	Instructor
11/13/2024 13:42:55	jvalonzo@up.edu.ph	John Carlo Alonzo	College of Agriculture and Foo	University Research Associate 2
11/13/2024 16:07:03	rejavier2@alum.up.edu.ph	Regine Joy Javier	UPLB-INREM	PTS1
11/13/2024 16:39:28	admatanguihan@up.edu.ph	Anna Elaine D. Matanguihan	Department of Chemical Engin	University Researcher I
11/13/2024 16:41:33	pcmontoya@up.edu.ph	Pia Montoya	UPLB-INREM	Staff

November 14, 2024

Timestamp	Email Address	Full Name	College/Unit/Department	Designation
11/14/2024 8:44:12	lmatienza2@up.edu.ph	Lauro Manalo Atienza	CPAf/KMO	UES1
11/14/2024 8:46:48	jdlosloso@up.edu.ph	Jeffrey Andrew Losloso	UPLB	PTS
11/14/2024 9:10:17	pcmontoya@up.edu.ph	Pia Montoya	UPLB-INREM	Staff
11/14/2024 9:30:38	jvalonzo@up.edu.ph	John Carlo V. Alonzo	CAFS	University Research Associate 2
11/14/2024 10:00:07	vcnesperos@up.edu.ph	Venice Jiezzelle C. Nesperos	CAFS-ASI	Asst. Prof. 1
11/14/2024 12:44:44	jdlosloso@up.edu.ph	Jeffrey Andrew Losloso	UPLB	PTS
11/14/2024 12:47:37	dmdomingo@up.edu.ph	Dhanicca Amor M. Domingo	CPAf, UPLB	University Researcher I
11/14/2024 13:02:50	pcmontoya@up.edu.ph	Pia Montoya	UPLB-INREM	Staff

November 15, 2024

Timestamp	Email Address	Full Name	College/Unit/Department	Designation
11/15/2024 9:03:55	lmatienza2@up.edu.ph	Lauro Manalo Atienza	CPAf/KMO	UES1
11/15/2024 9:17:12	jdlosloso@up.edu.ph	Jeffrey Andrew Losloso	UPLB	PTS
11/15/2024 10:57:13	abvillancio@up.edu.ph	Arnel B. Villancio Jr.	CAFS	Instructor
11/15/2024 11:17:00	rejavier2@alum.up.edu.ph	Regine Joy E. Javier	UPLB-INREM	PTS1
11/15/2024 11:35:30	pcmontoya@up.edu.ph	Pia Montoya	UPLB-INREM	Staff

CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES

Established in 1985 by University of the Philippines (UP) President Edgardo J. Angara, the UP Center for Integrative and Development Studies (UP CIDS) is the policy research unit of the University that connects disciplines and scholars across the several units of the UP System. It is mandated to encourage collaborative and rigorous research addressing issues of national significance by supporting scholars and securing funding, enabling them to produce outputs and recommendations for public policy.

The UP CIDS currently has twelve research programs that are clustered under the areas of education and capacity building, development, and social, political, and cultural studies. It publishes policy briefs, monographs, webinar/conference/forum proceedings, and the Philippine Journal for Public Policy, all of which can be downloaded free from the UP CIDS website.

THE PROGRAM

The **Program on Data Science for Public Policy (DSPPP)** aims to build the capacity of UP faculty in data science and apply this learned skill to public policy and governance. It seeks to engage a community of researchers within the university and encourage the pursuit of interdisciplinary problem-oriented research using high-level quantitative analyses.

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