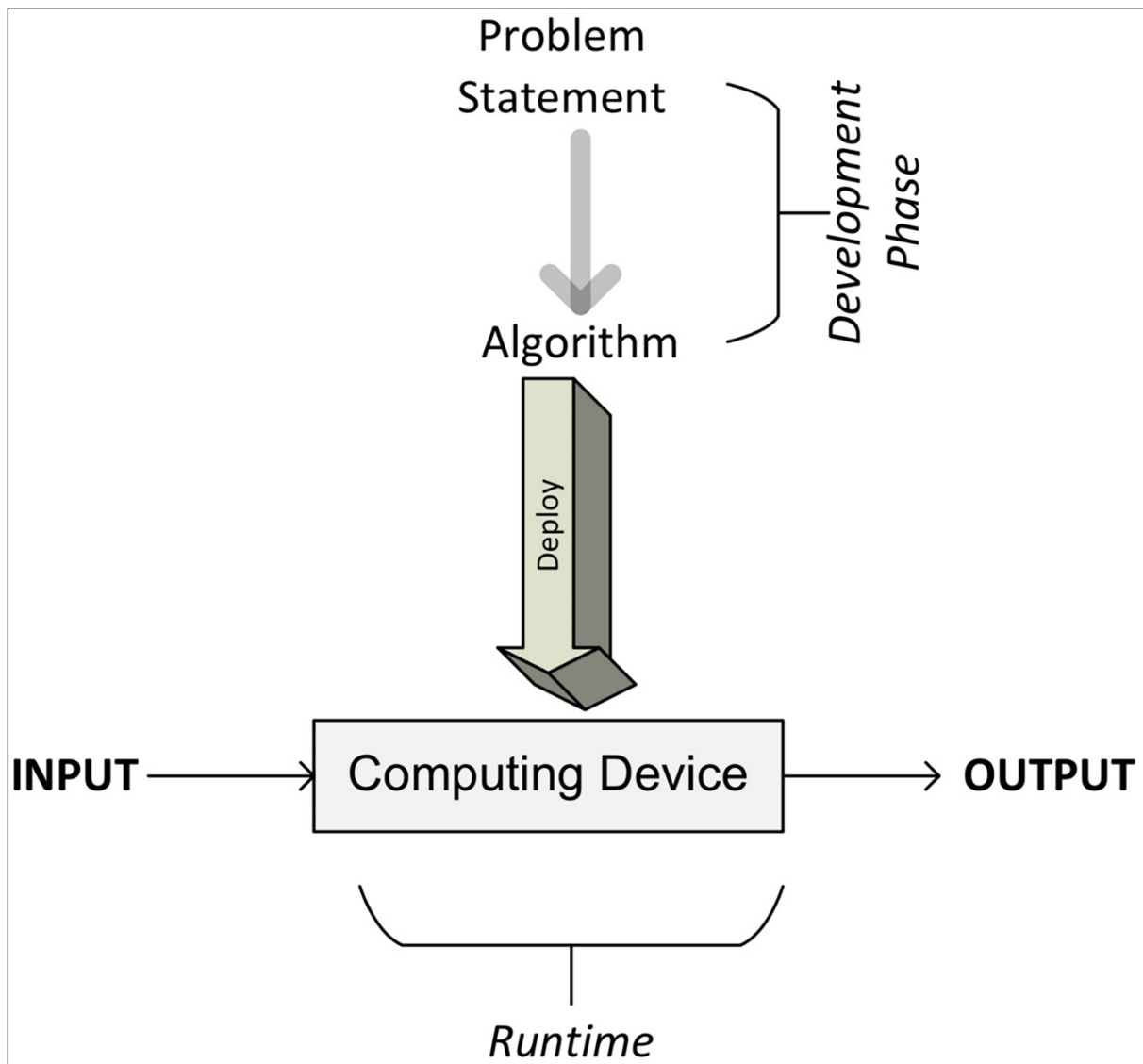
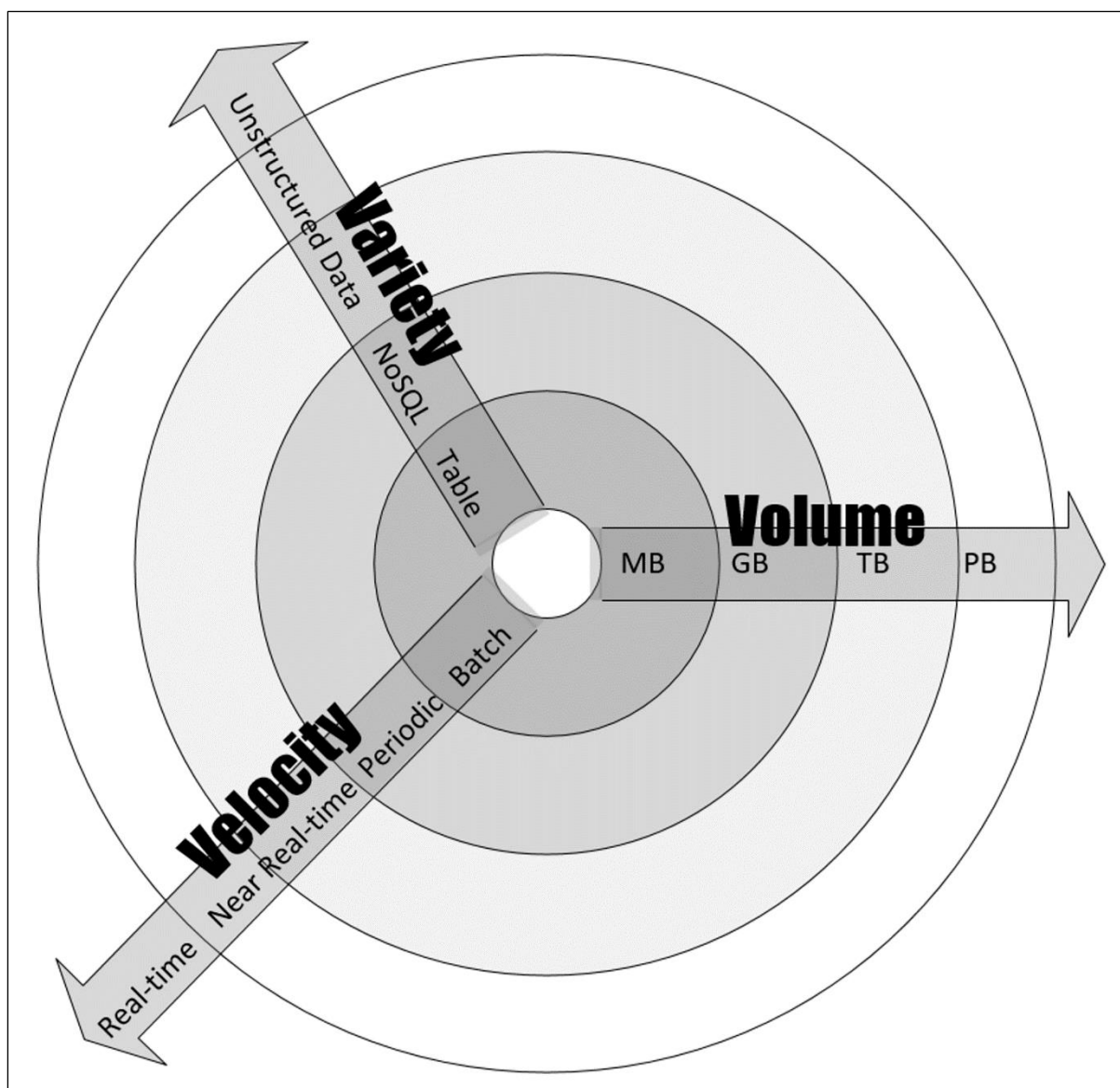
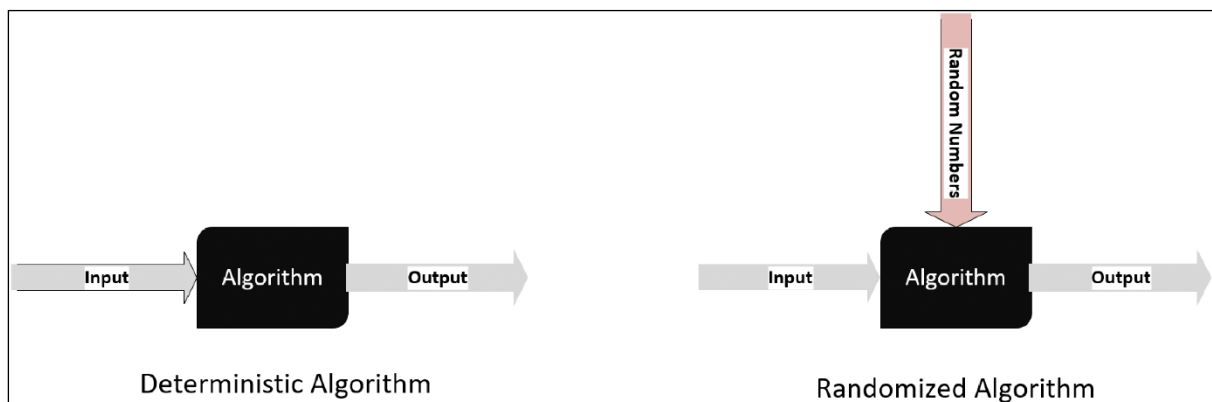
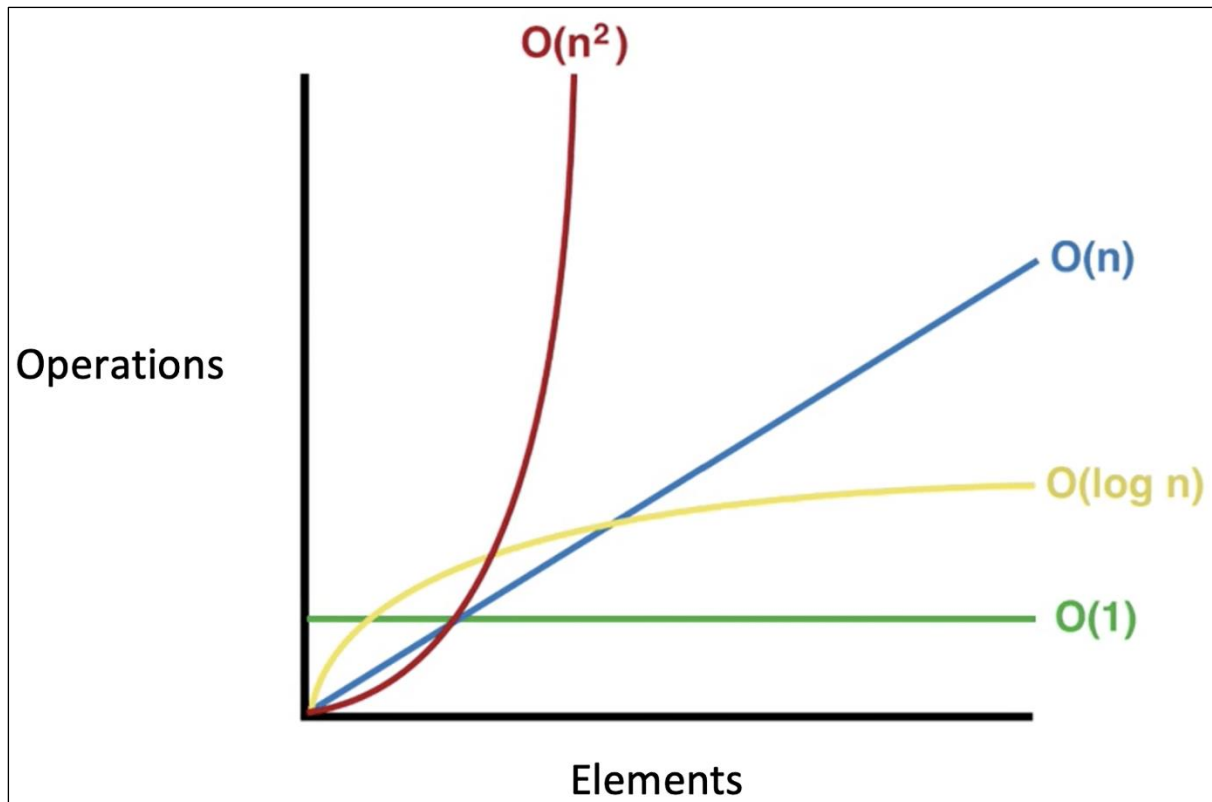


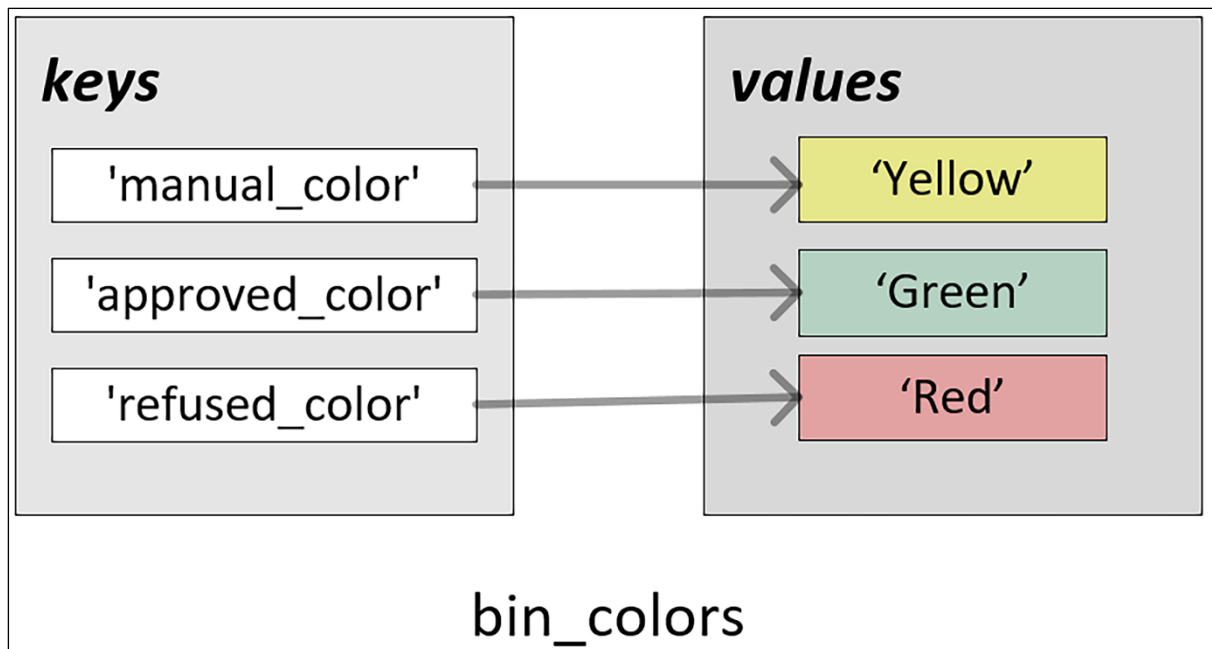
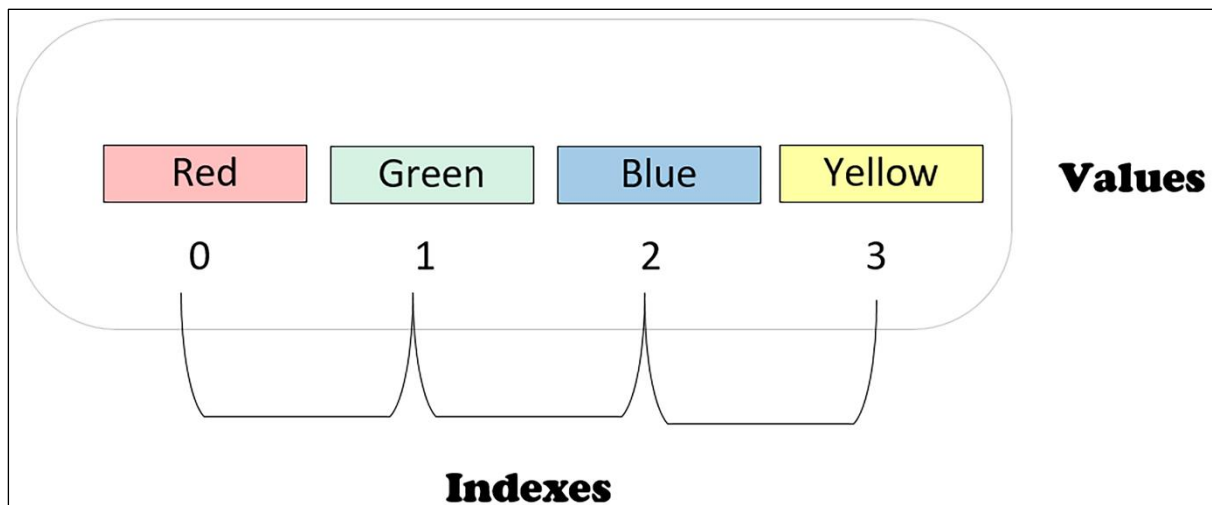
Chapter 1: Overview of Algorithms

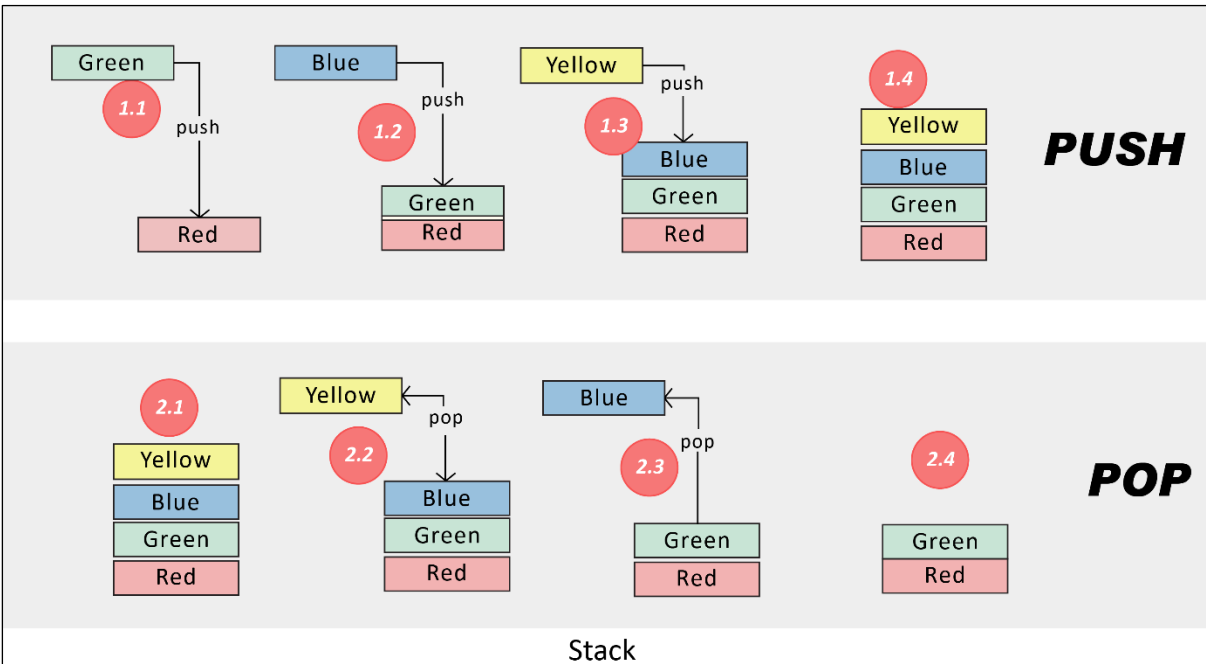
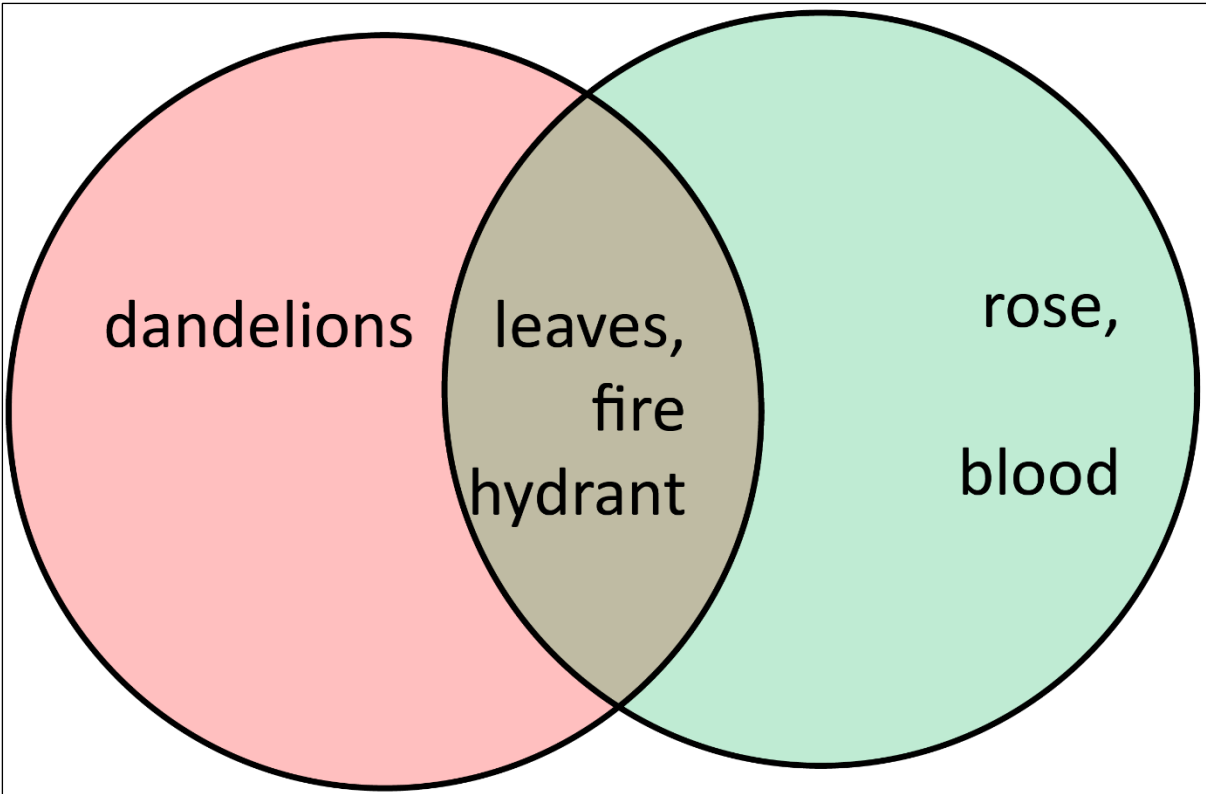


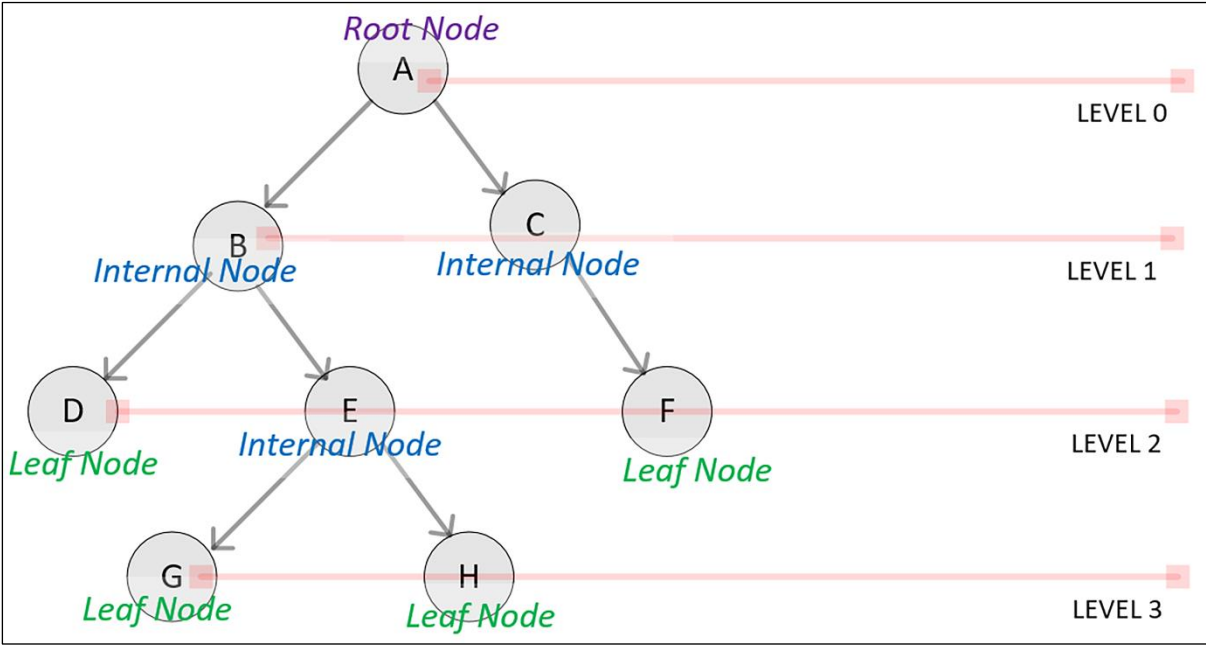
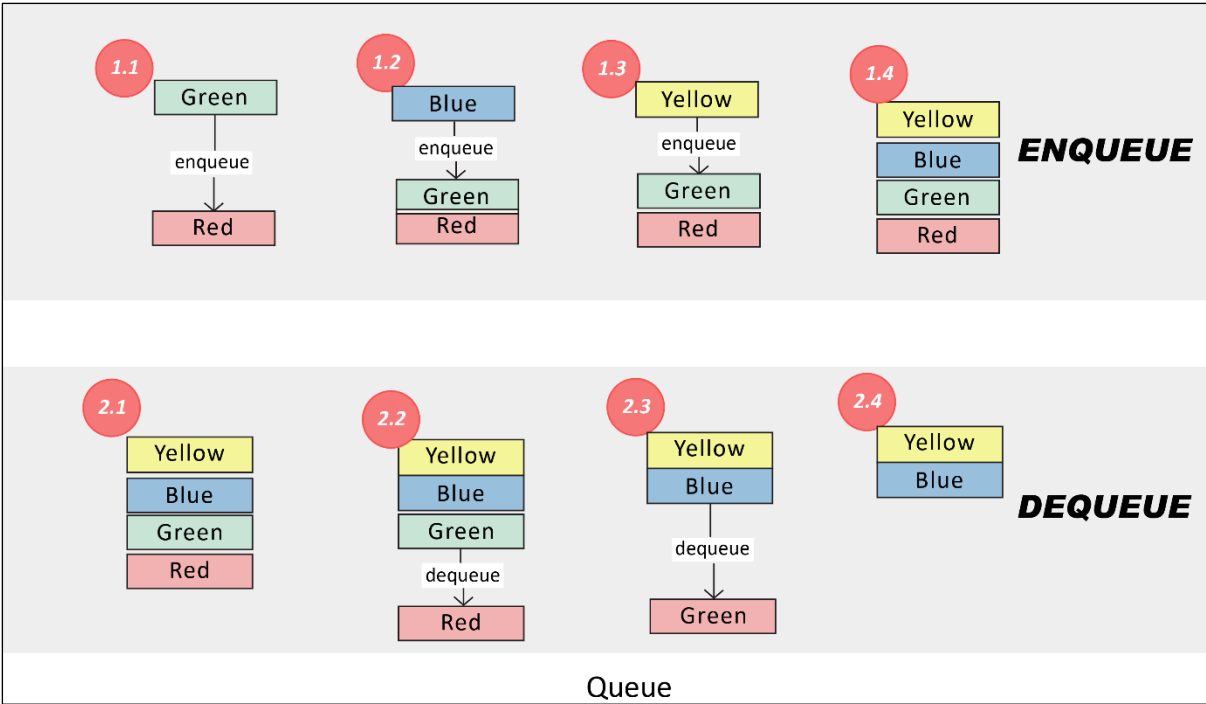


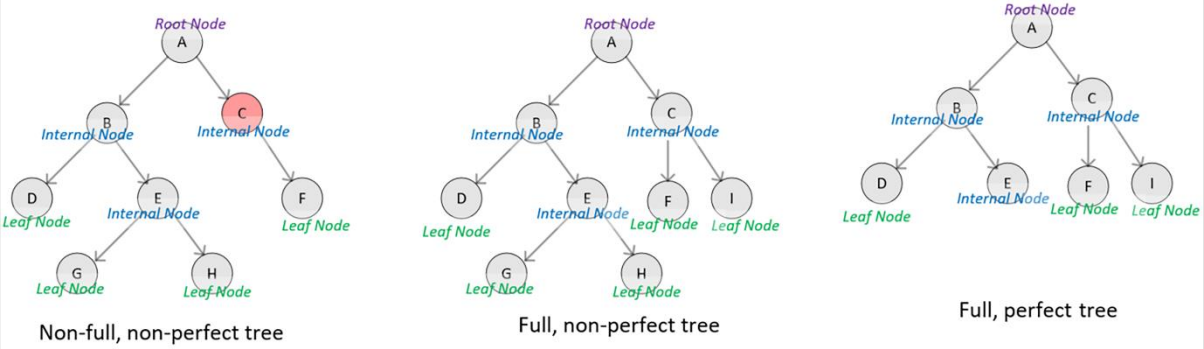


Chapter 2: Data Structures Used in Algorithms









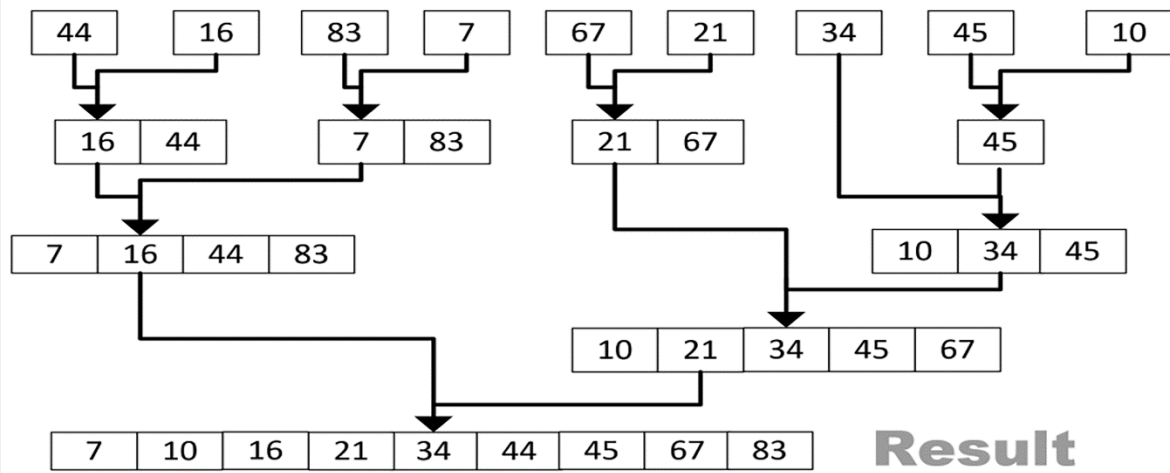
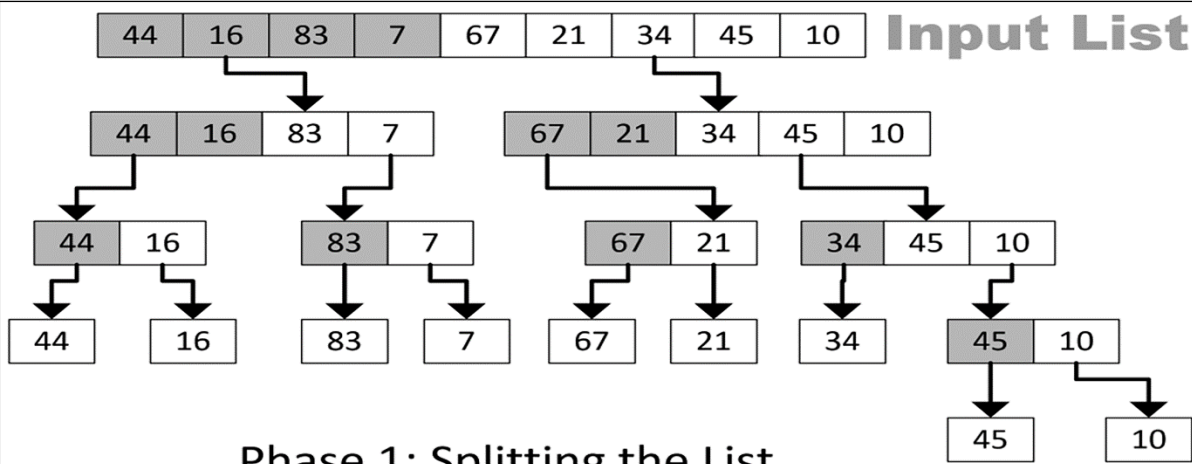
Chapter 3: Sorting and Searching Algorithms

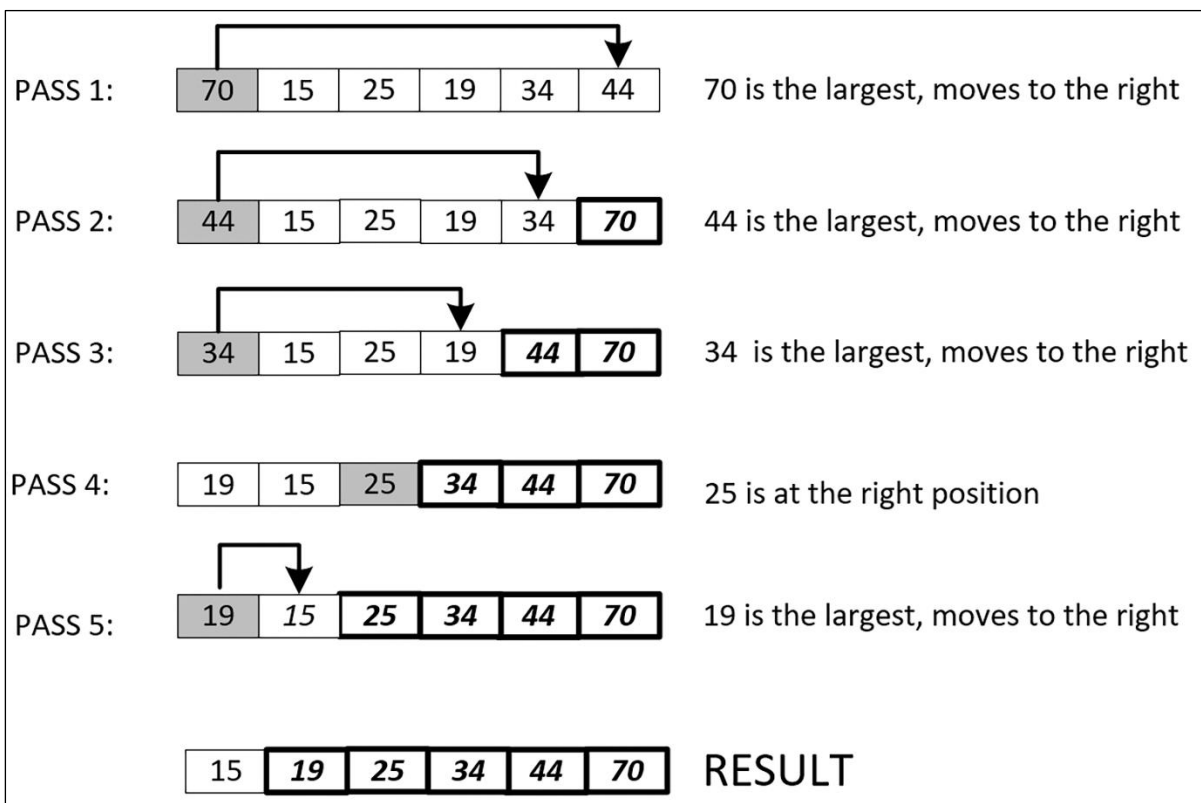
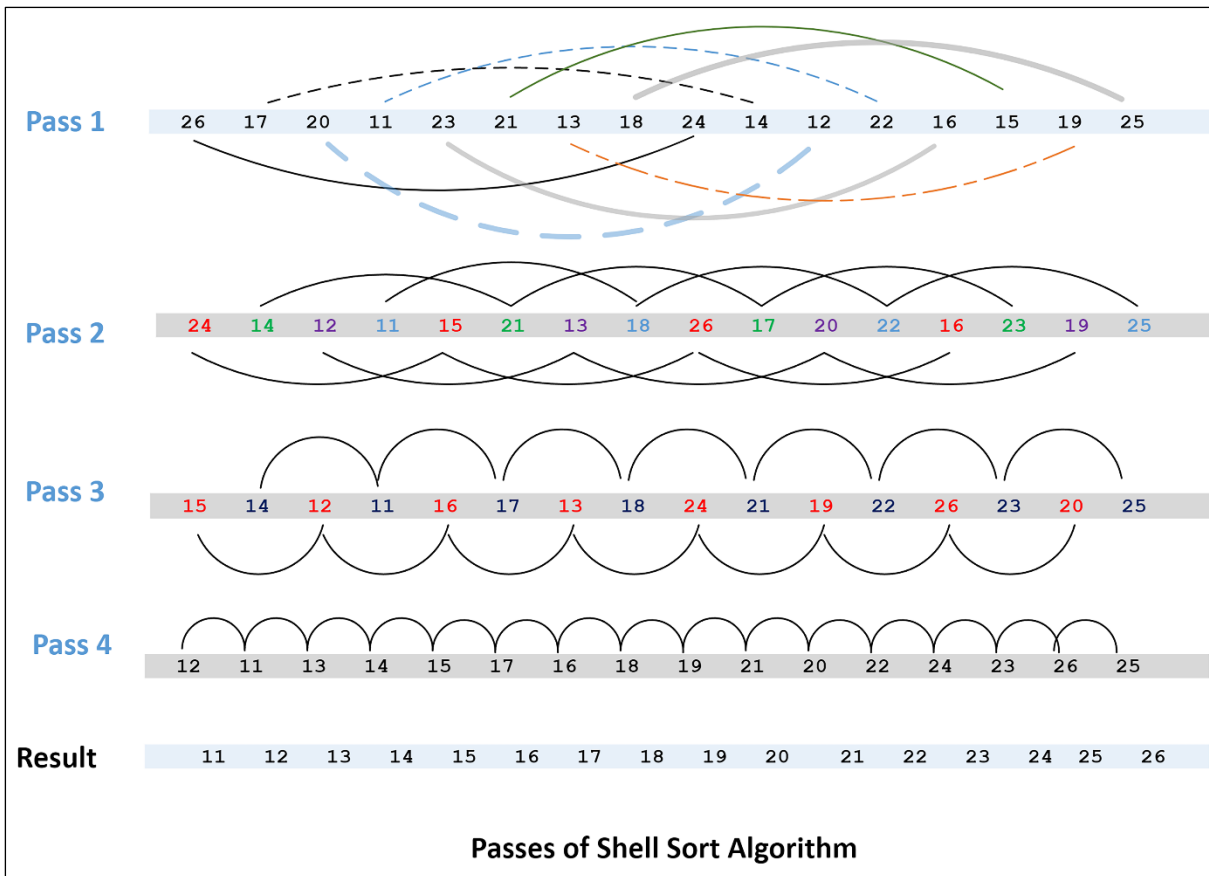
The diagram shows the first pass of Bubble Sort. A vertical green arrow on the left is labeled "1st Pass". The array is represented as a 7x7 grid. The first column contains the numbers 25, 21, 21, 21, 21, 21, 21. The second column contains 21, 25, 22, 22, 22, 22, 22. The third column contains 22, 22, 25, 24, 24, 24, 24. The fourth column contains 24, 24, 24, 25, 23, 23, 23. The fifth column contains 23, 23, 23, 23, 25, 25, 25. The sixth column contains 27, 27, 27, 27, 27, 27, 26. The seventh column contains 26, 26, 26, 26, 26, 26, 27. To the right of the grid, the actions for each row are listed: "Exchange", "Exchange", "Exchange", "Exchange", "No Exchange", "Exchange", and "No Exchange".

25	21	22	24	23	27	26	Exchange
21	25	22	24	23	27	26	Exchange
21	22	25	24	23	27	26	Exchange
21	22	24	25	23	27	26	Exchange
21	22	24	23	25	27	26	No Exchange
21	22	24	23	25	27	26	Exchange
21	22	24	23	25	26	27	No Exchange

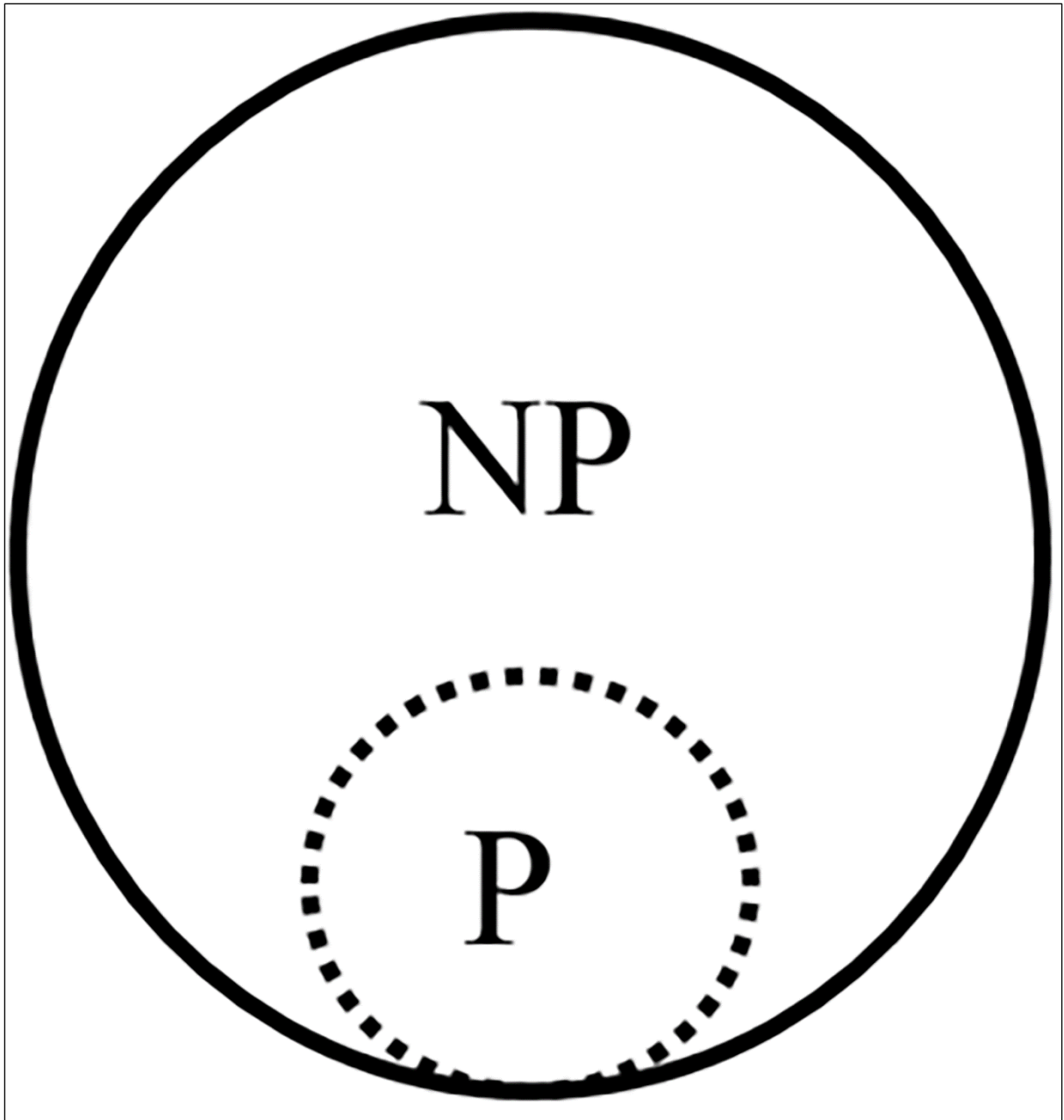
Bubble Sort

25	26	22	24	27	23	21	Insert 25				
25	26	22	24	27	23	21		Insert 26			
22	25	26	24	27	23	21			Insert 22		
22	24	25	26	27	23	21				Insert 24	
22	24	25	26	27	23	21					Insert 27
22	23	24	25	26	27	21					
21	22	23	24	25	26	27	Insert 21				
Insertion Sort											



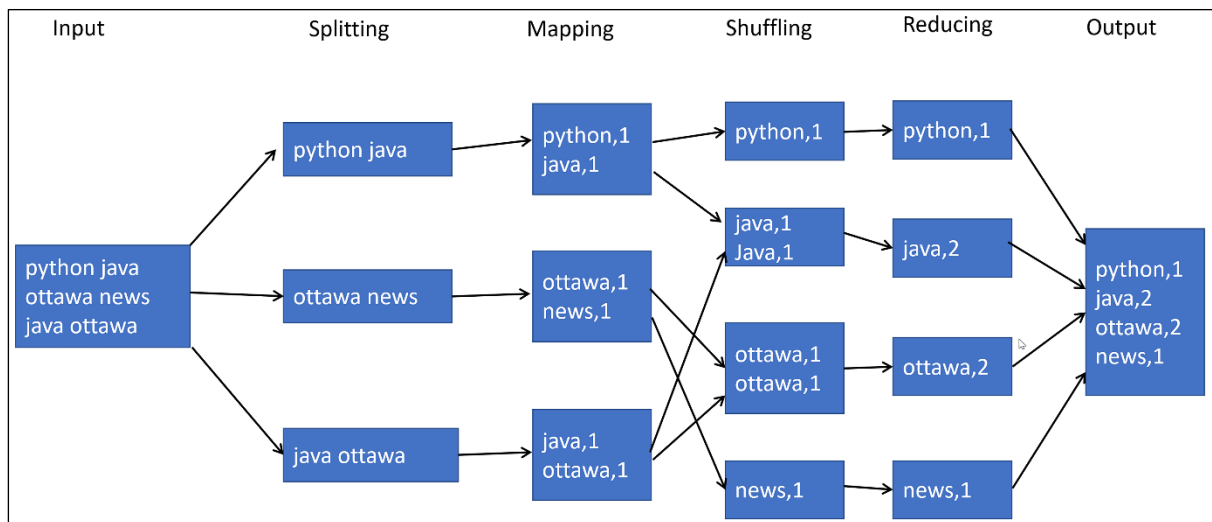
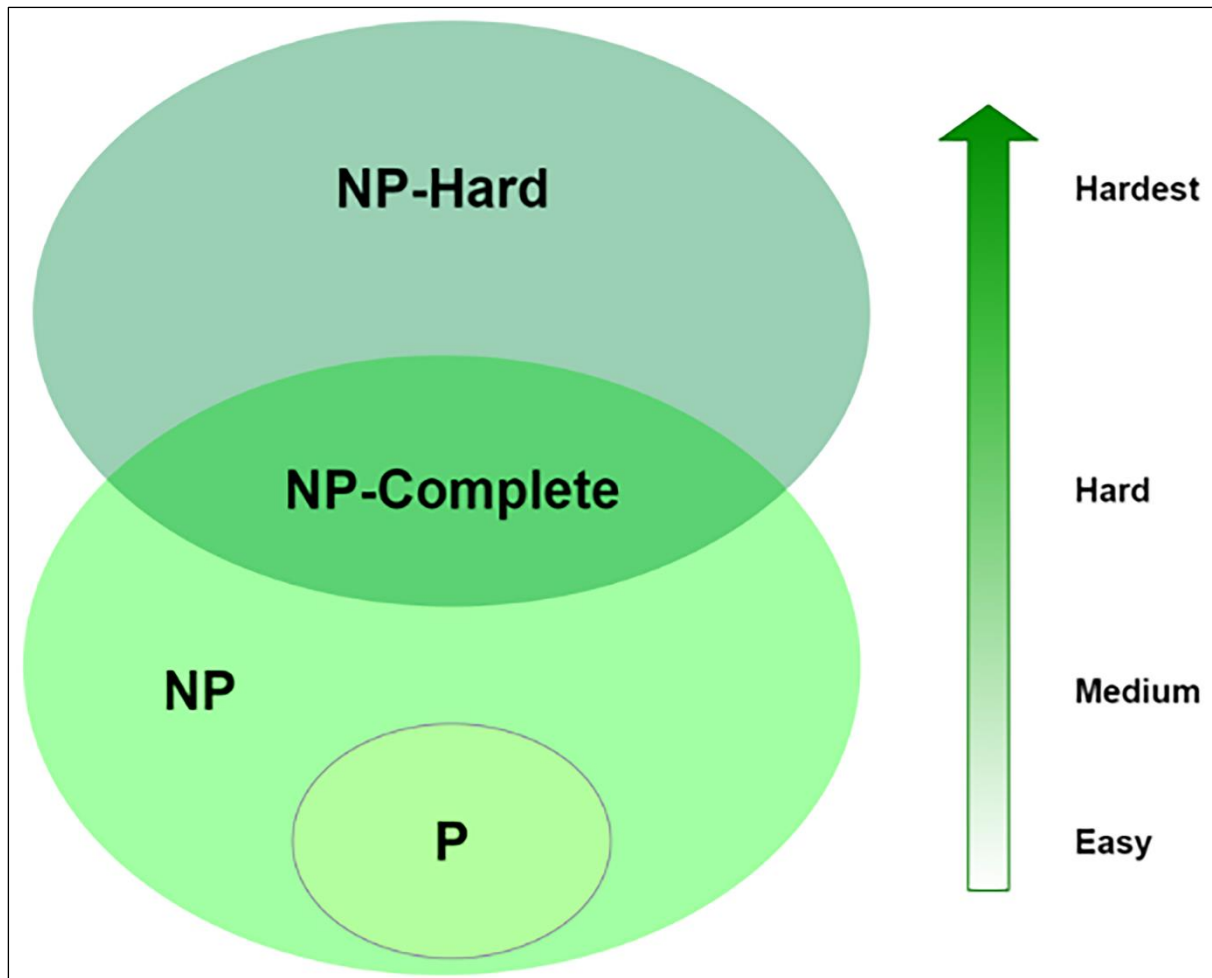


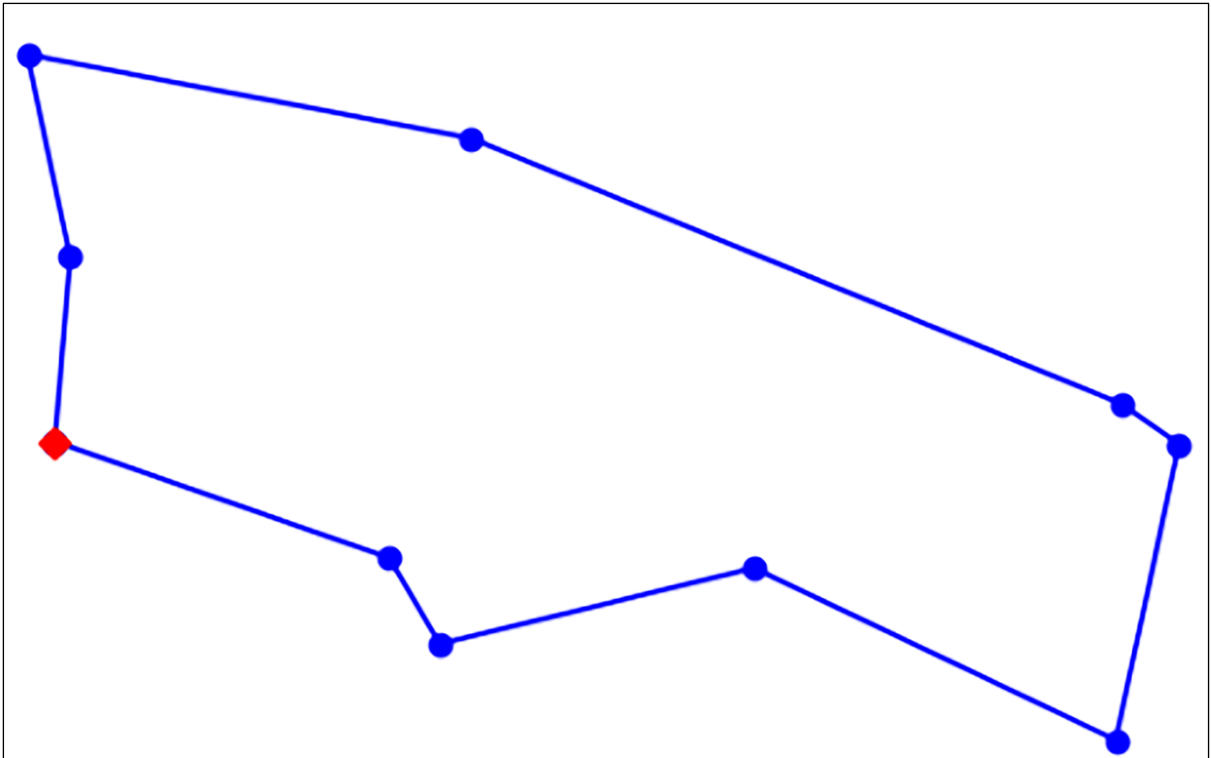
Chapter 4: Designing Algorithms



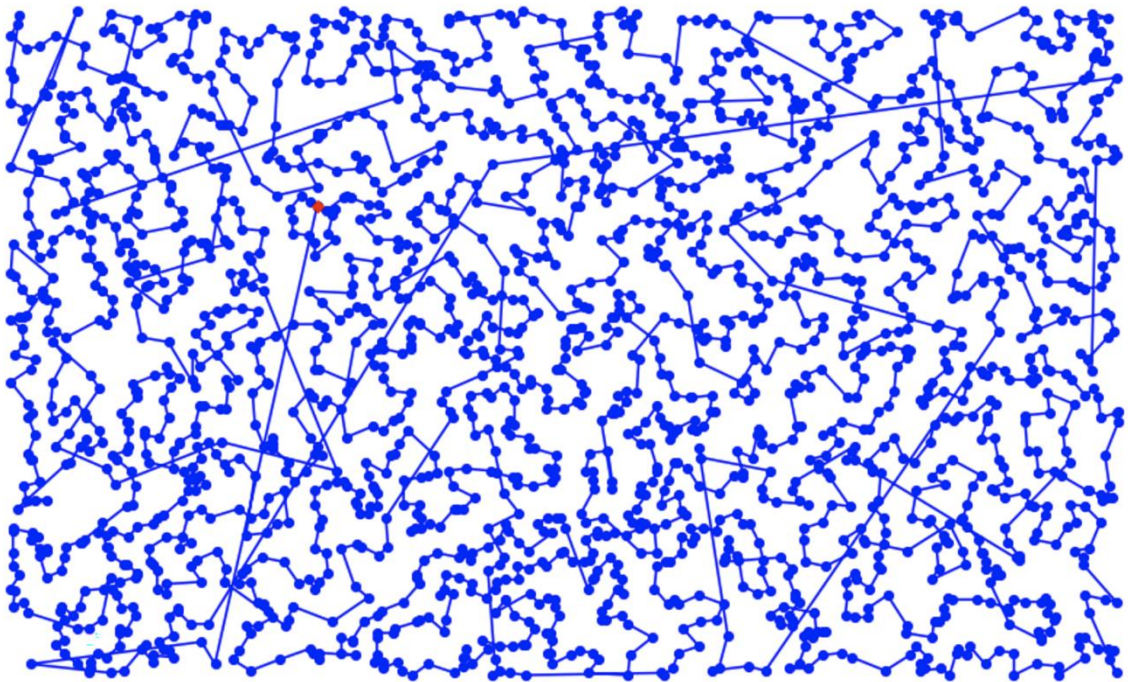
$P = NP$

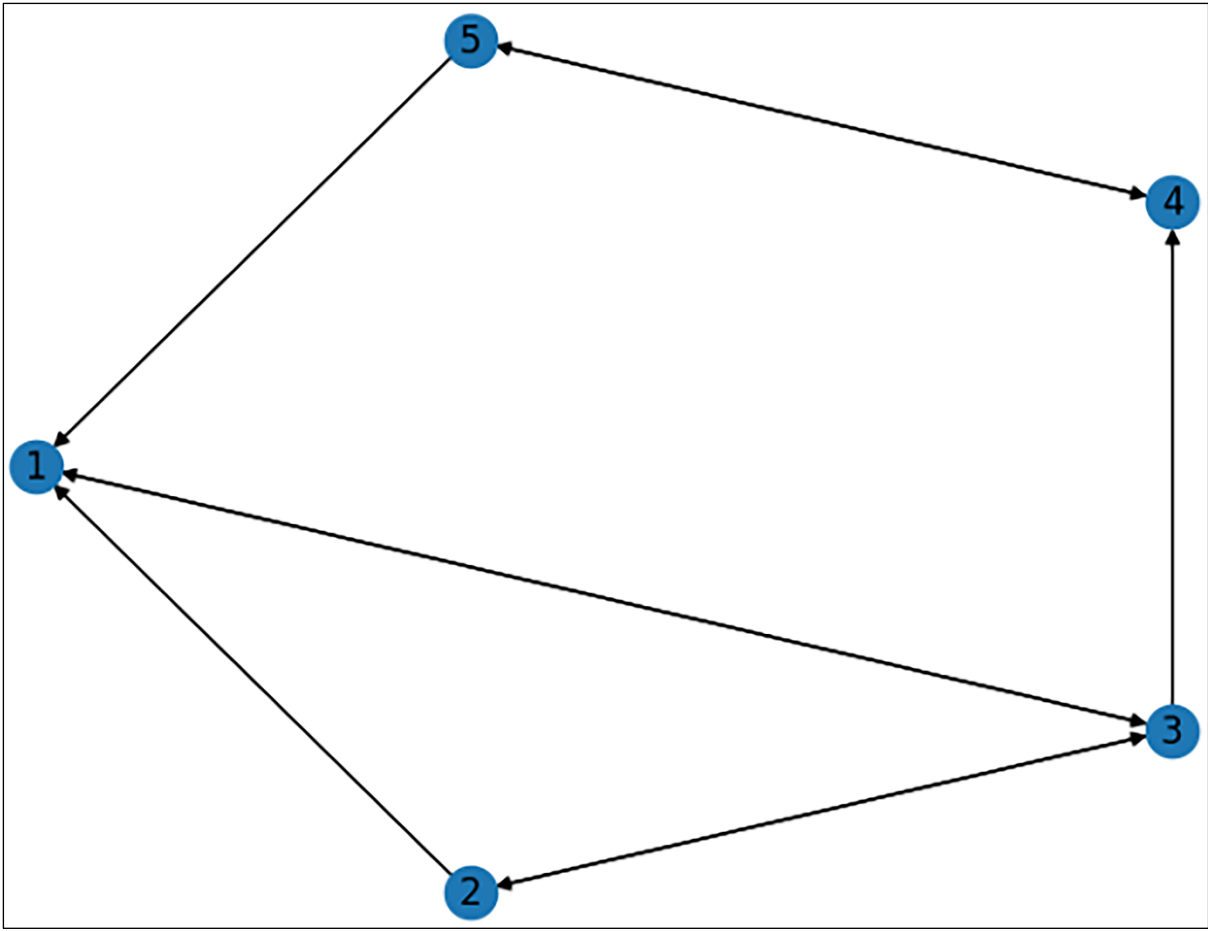






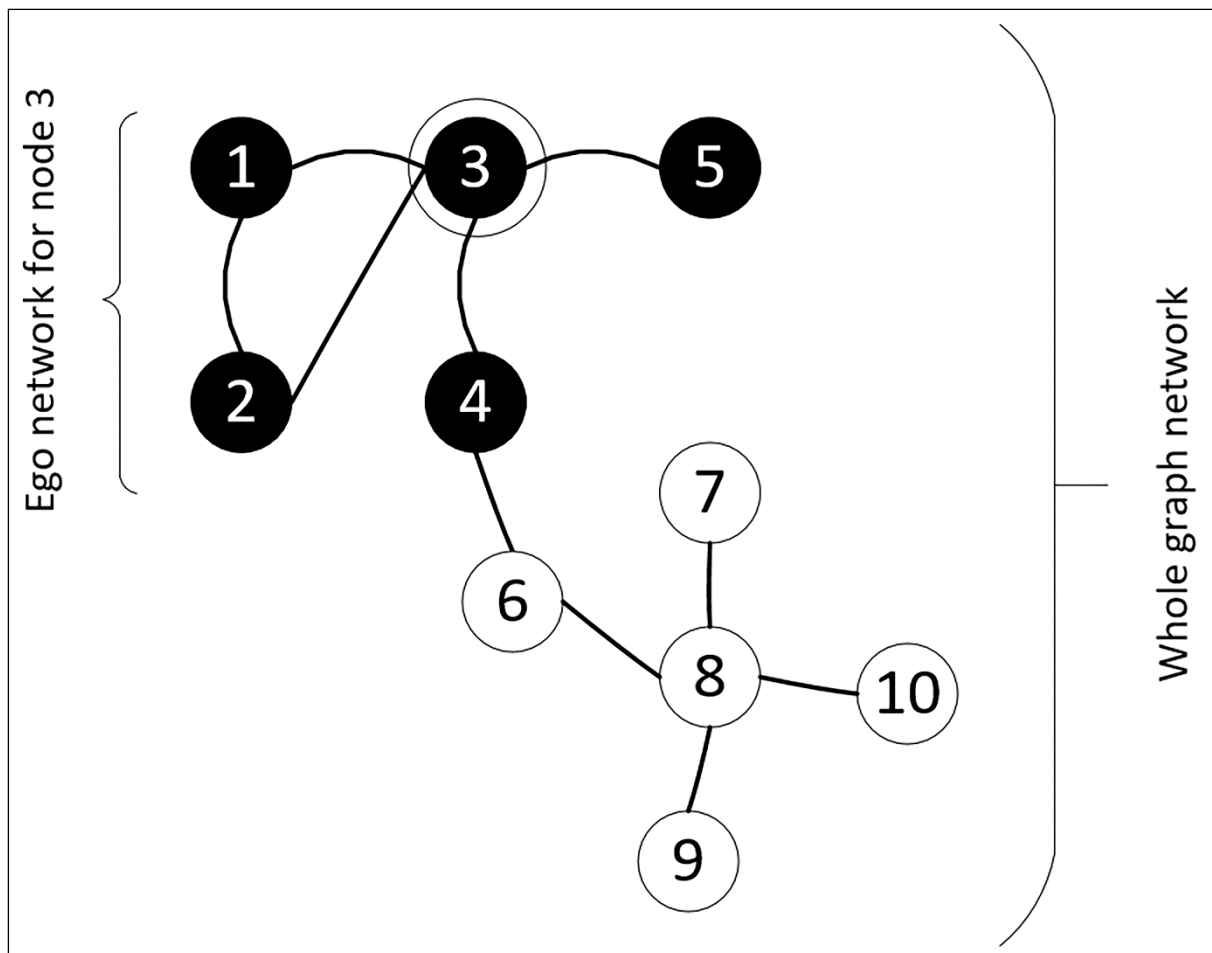
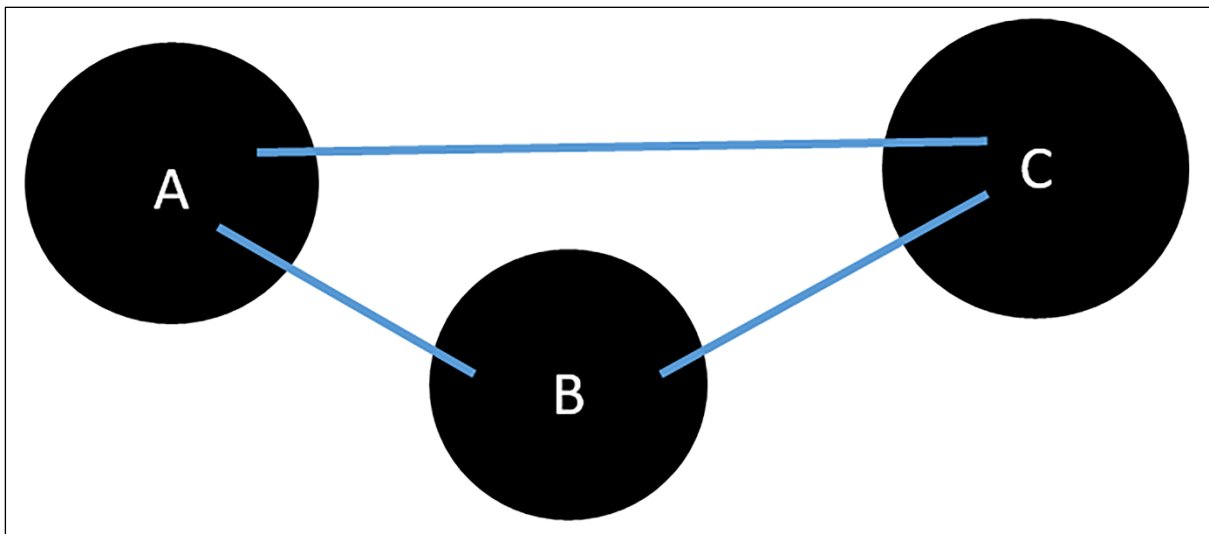
nn: 1991 cities \Rightarrow tour length 15846 (in 0.514 sec)

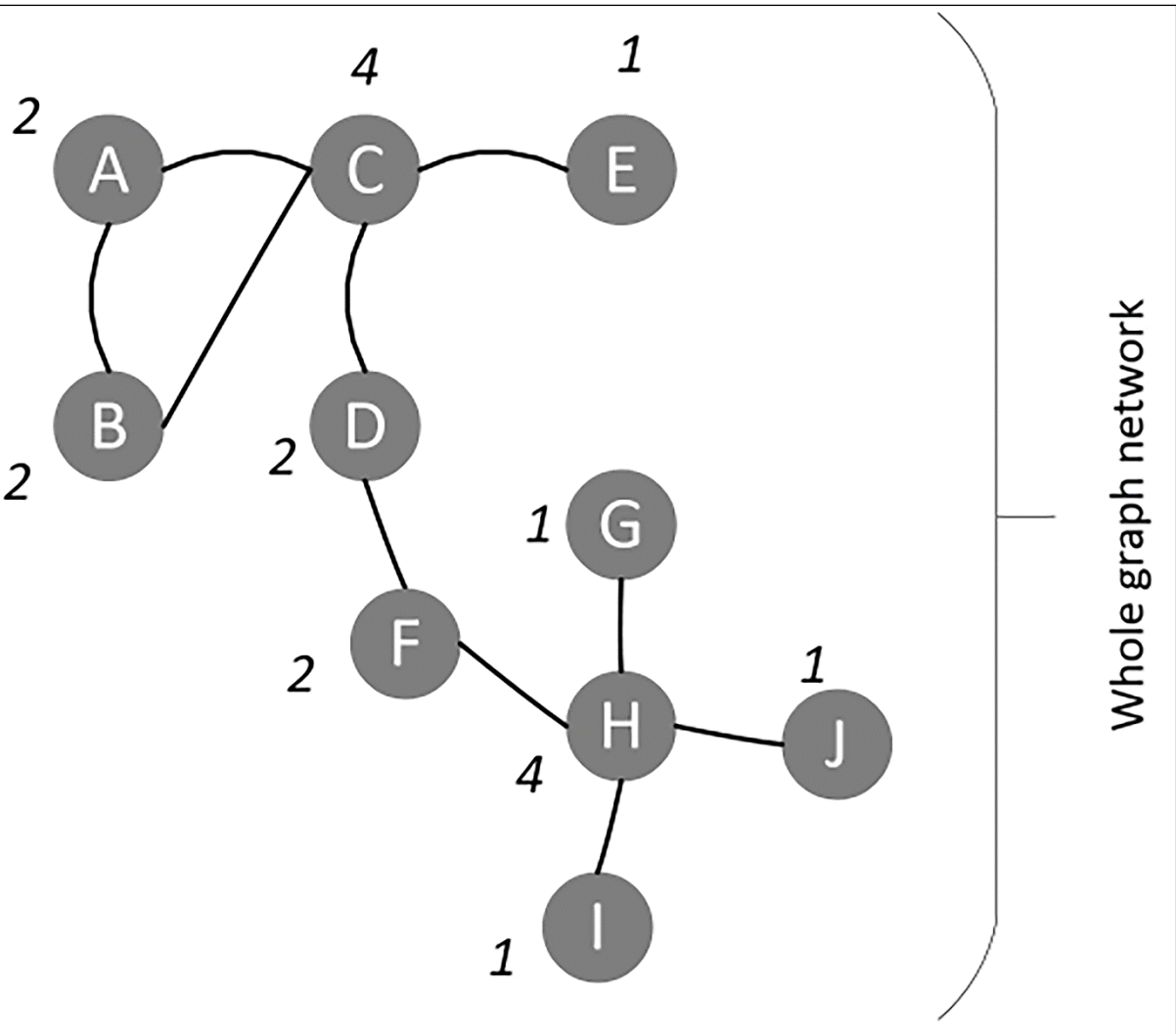


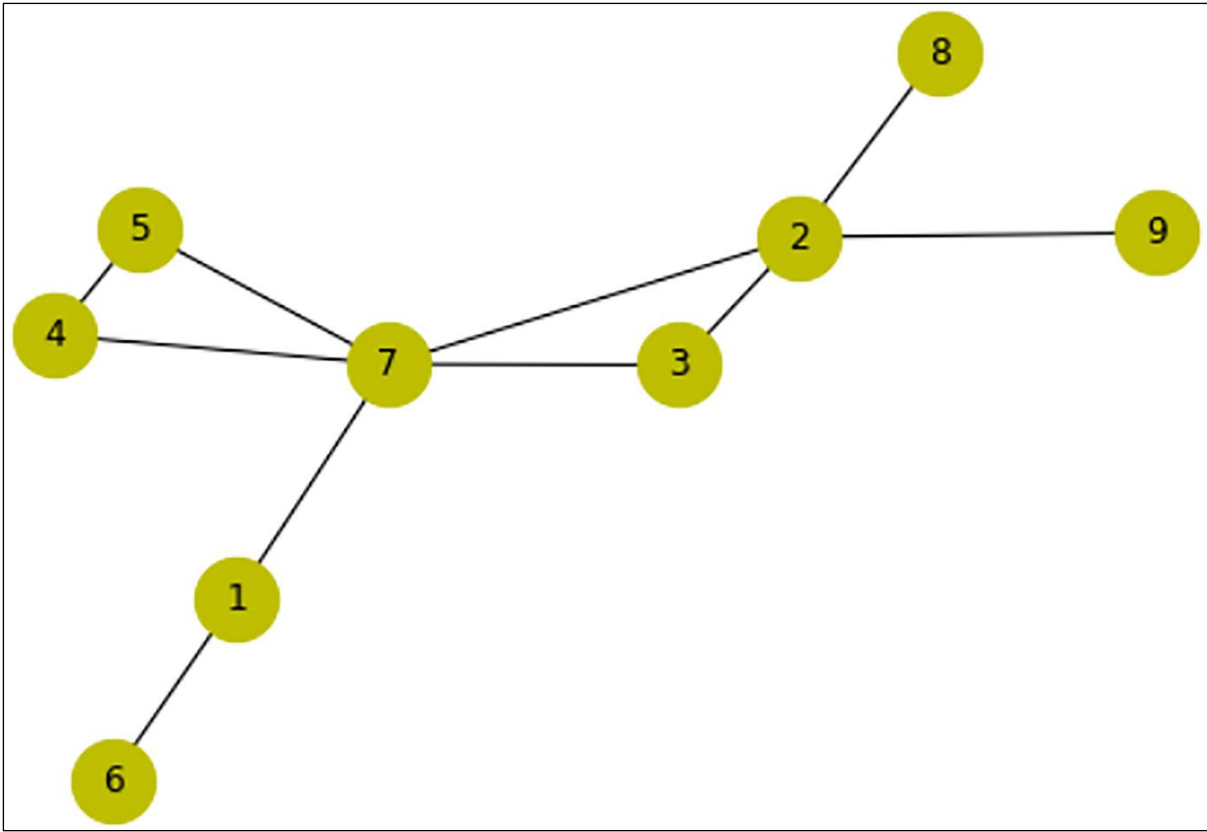


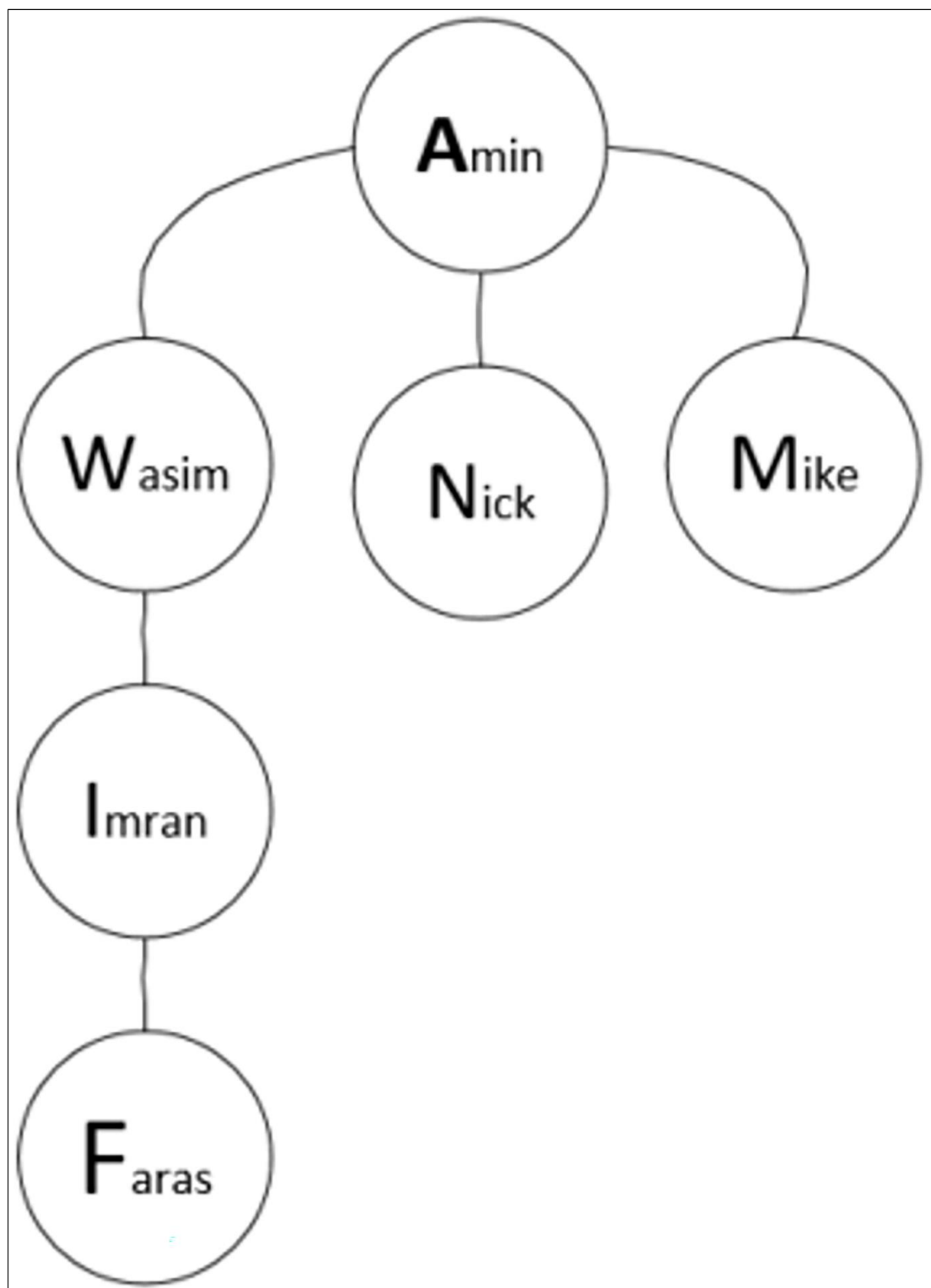
1	2	3	4	5	
[0.	0.5	0.33333333	0.	0.5]
[0.	0.	0.33333333	0.	0.	
[1.	0.5	0.	0.	0.	
[0.	0.	0.33333333	0.	0.5	
[0.	0.	0.	1.	0.	
]]

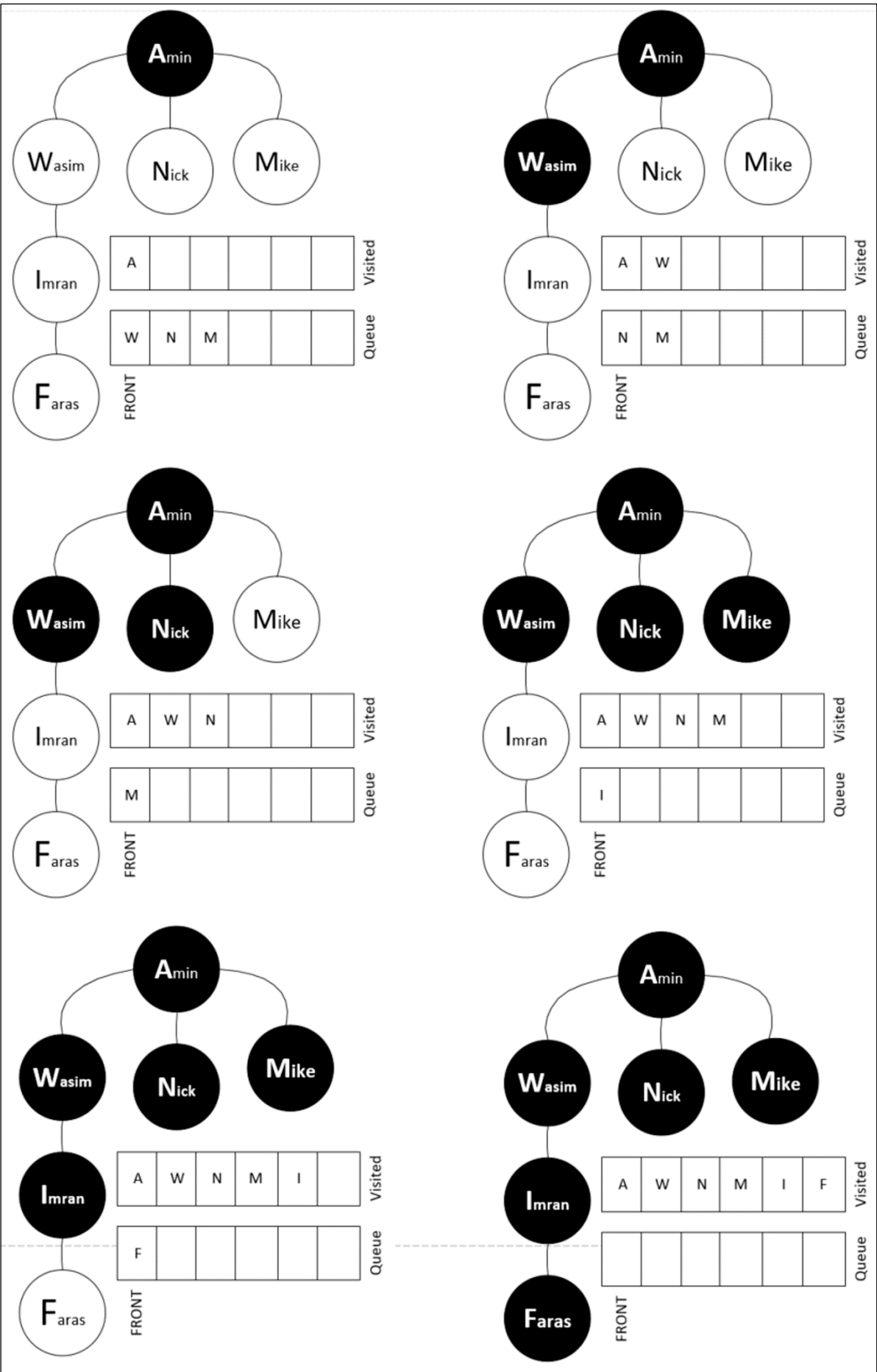
Chapter 5: Graph Algorithms

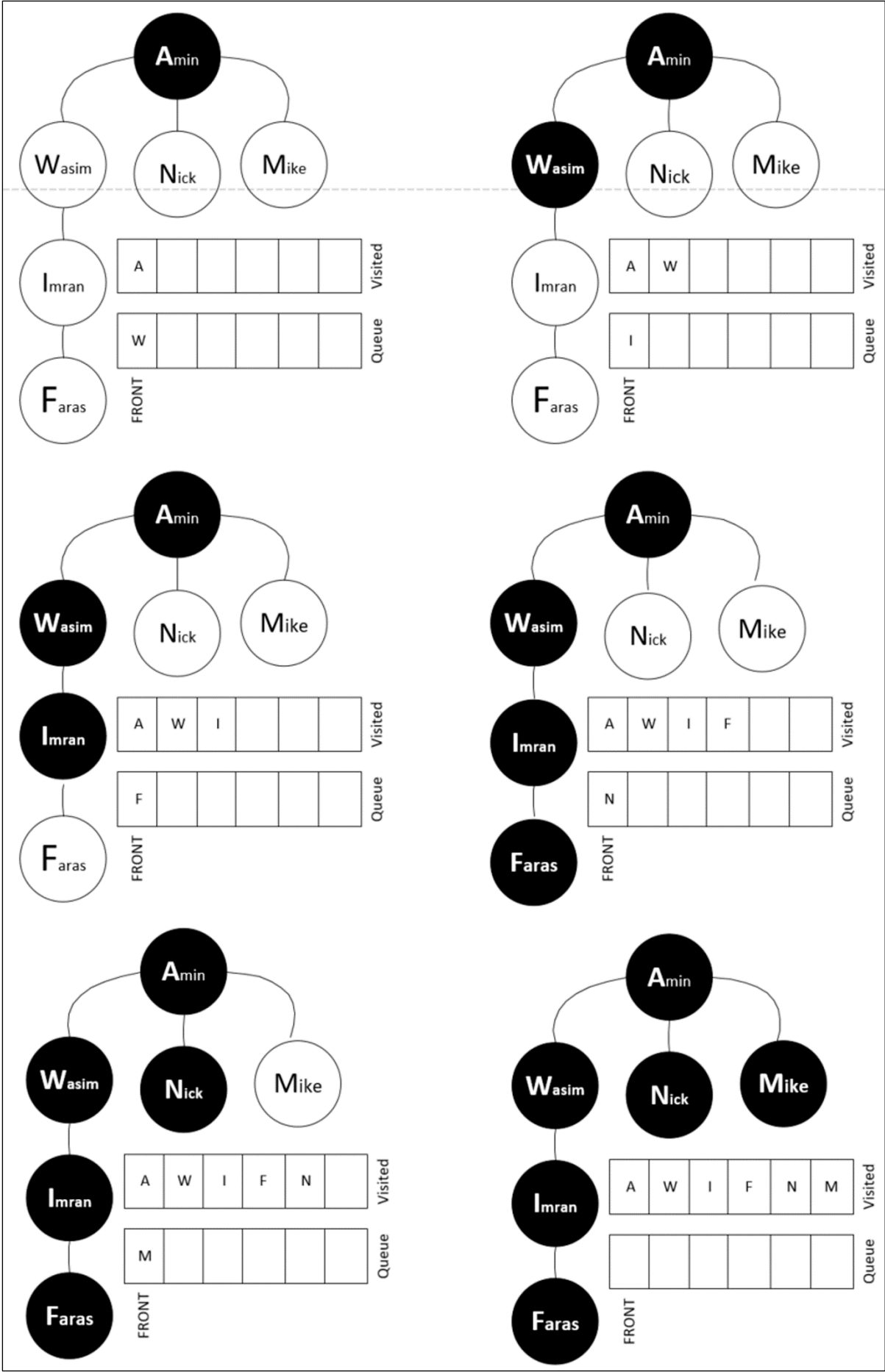


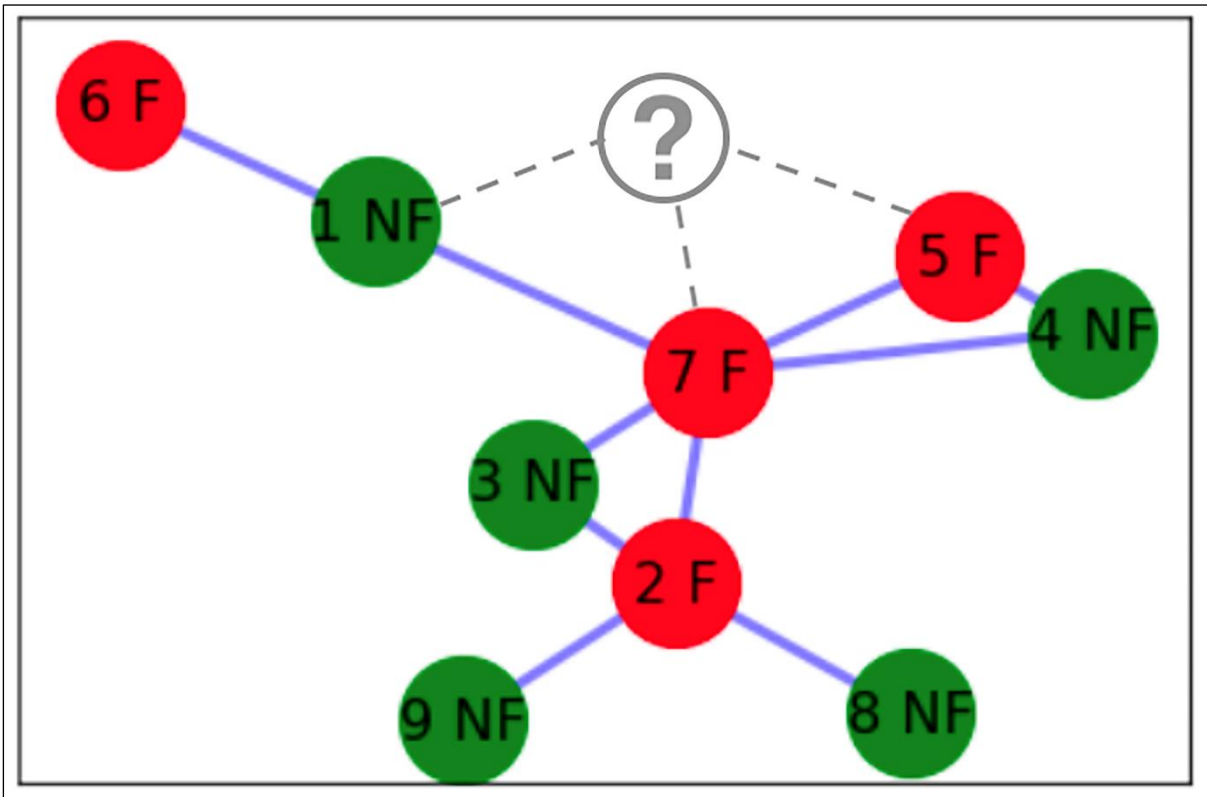
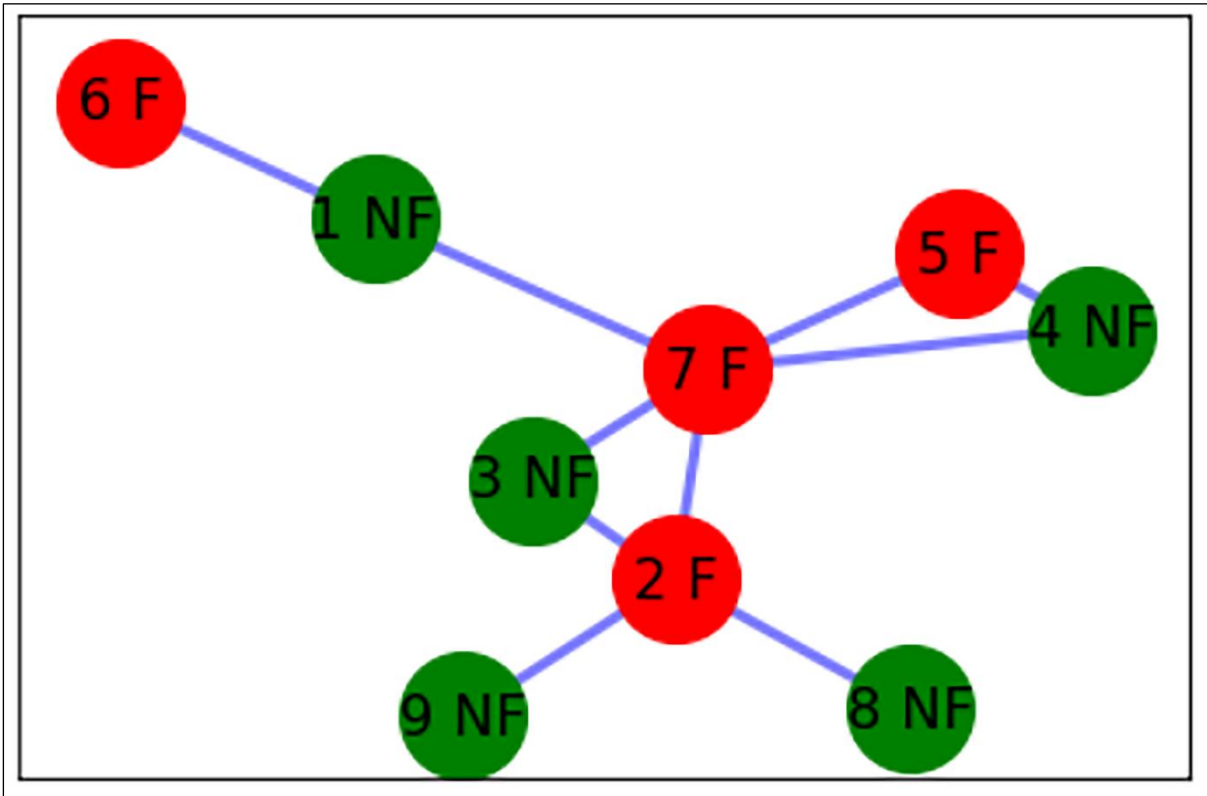


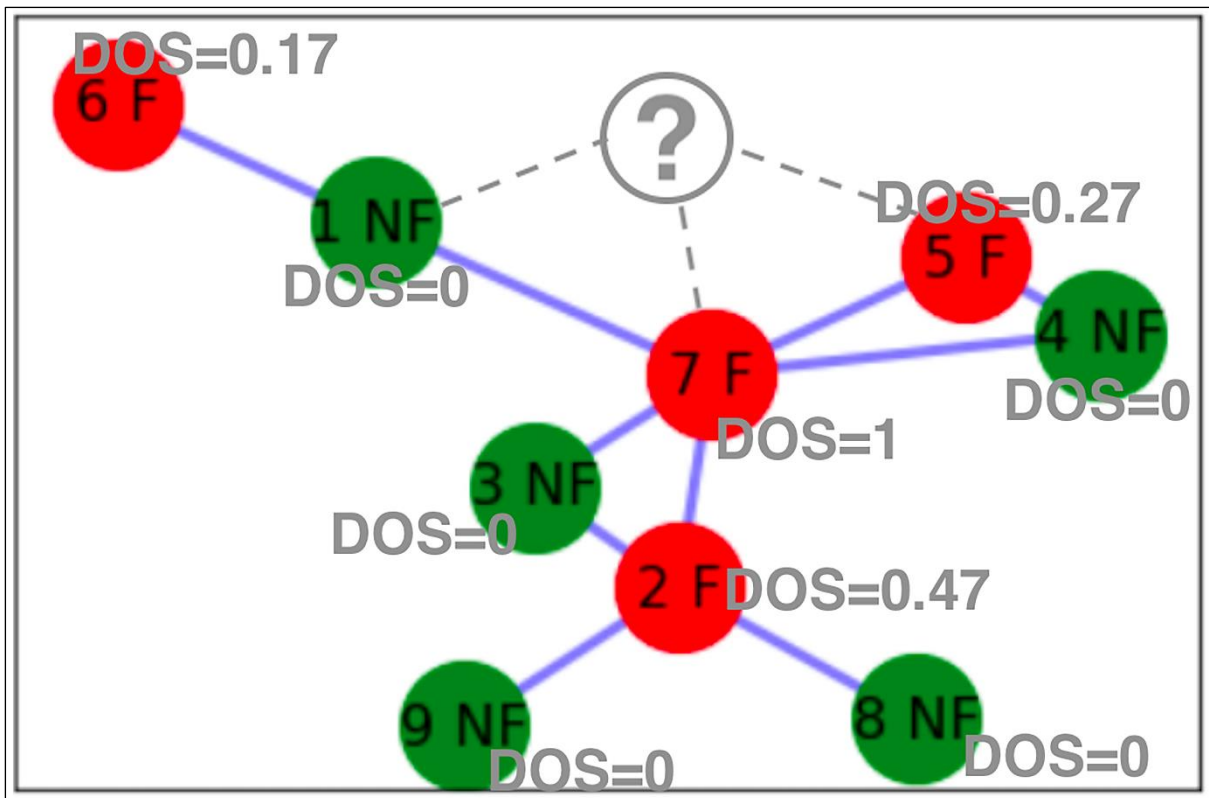




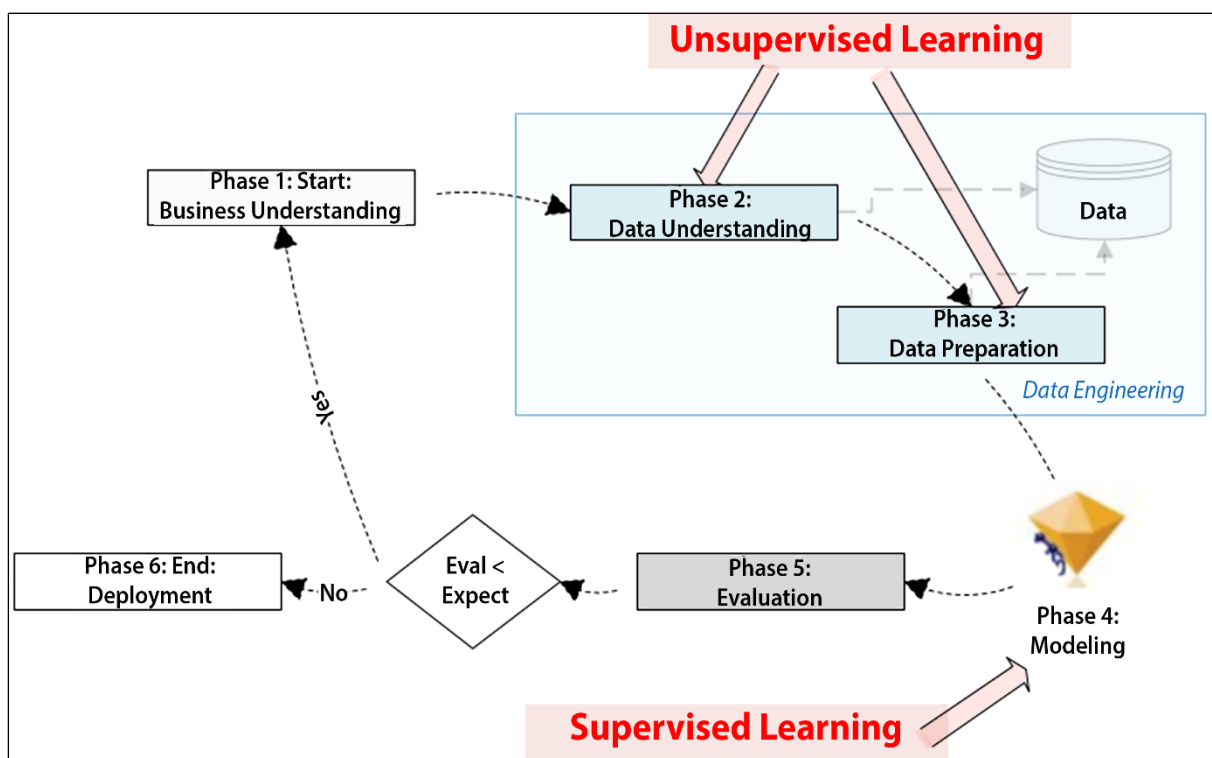
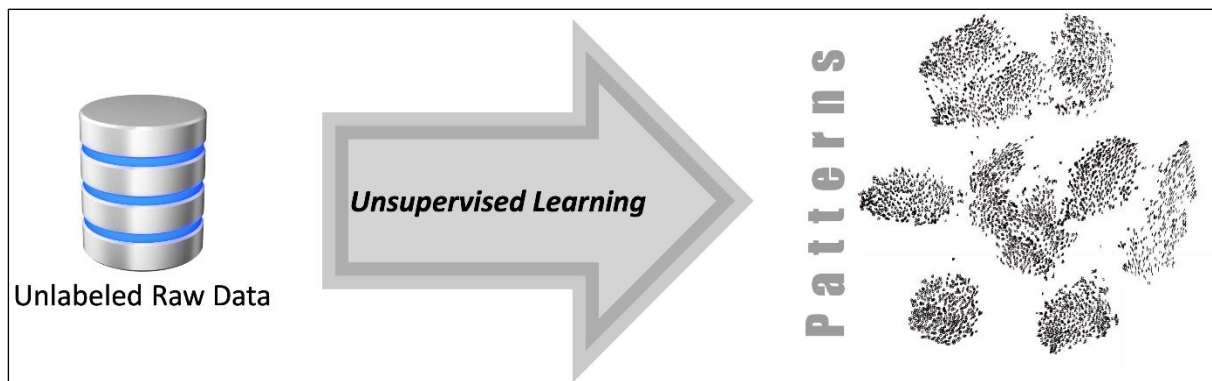


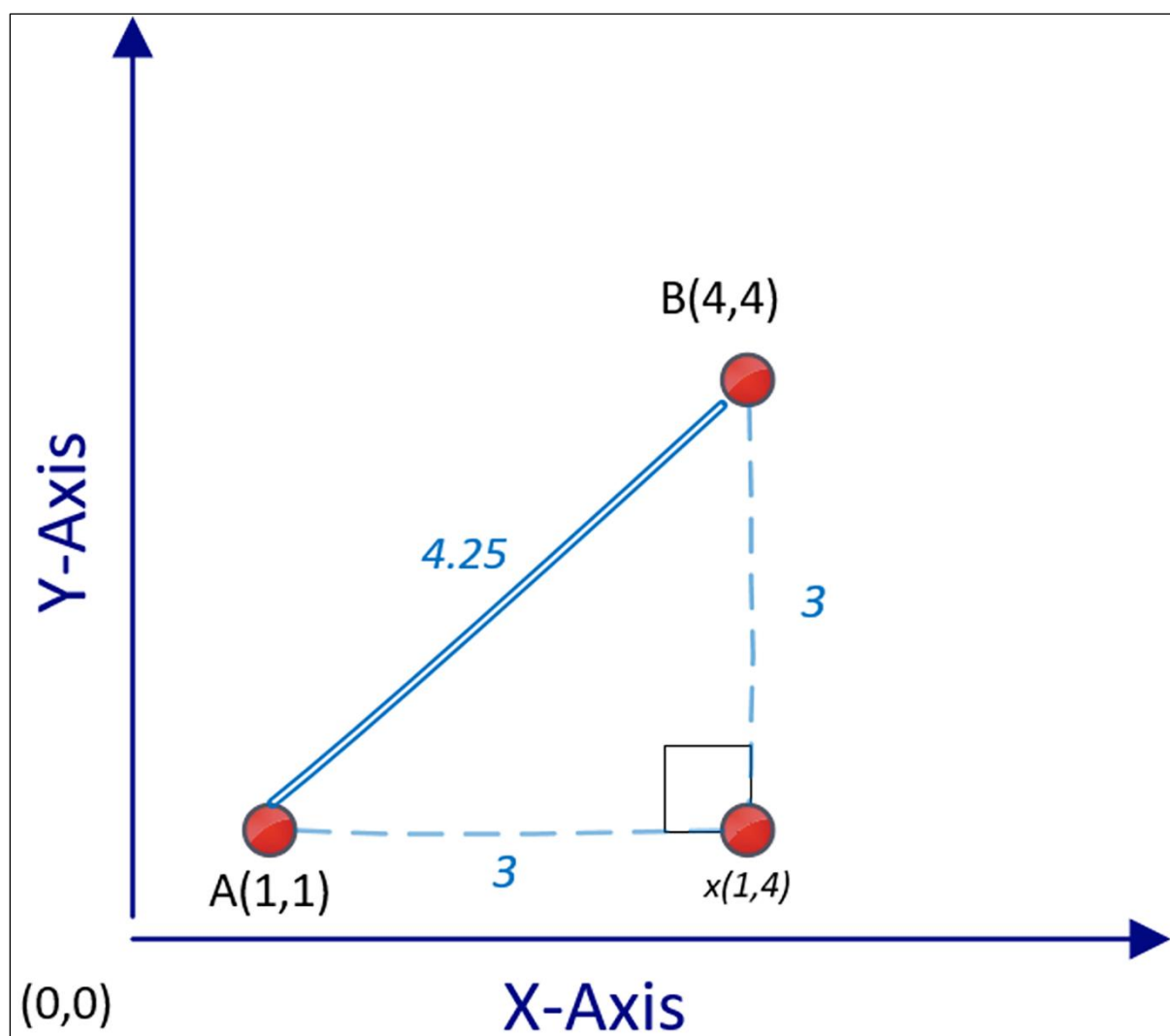


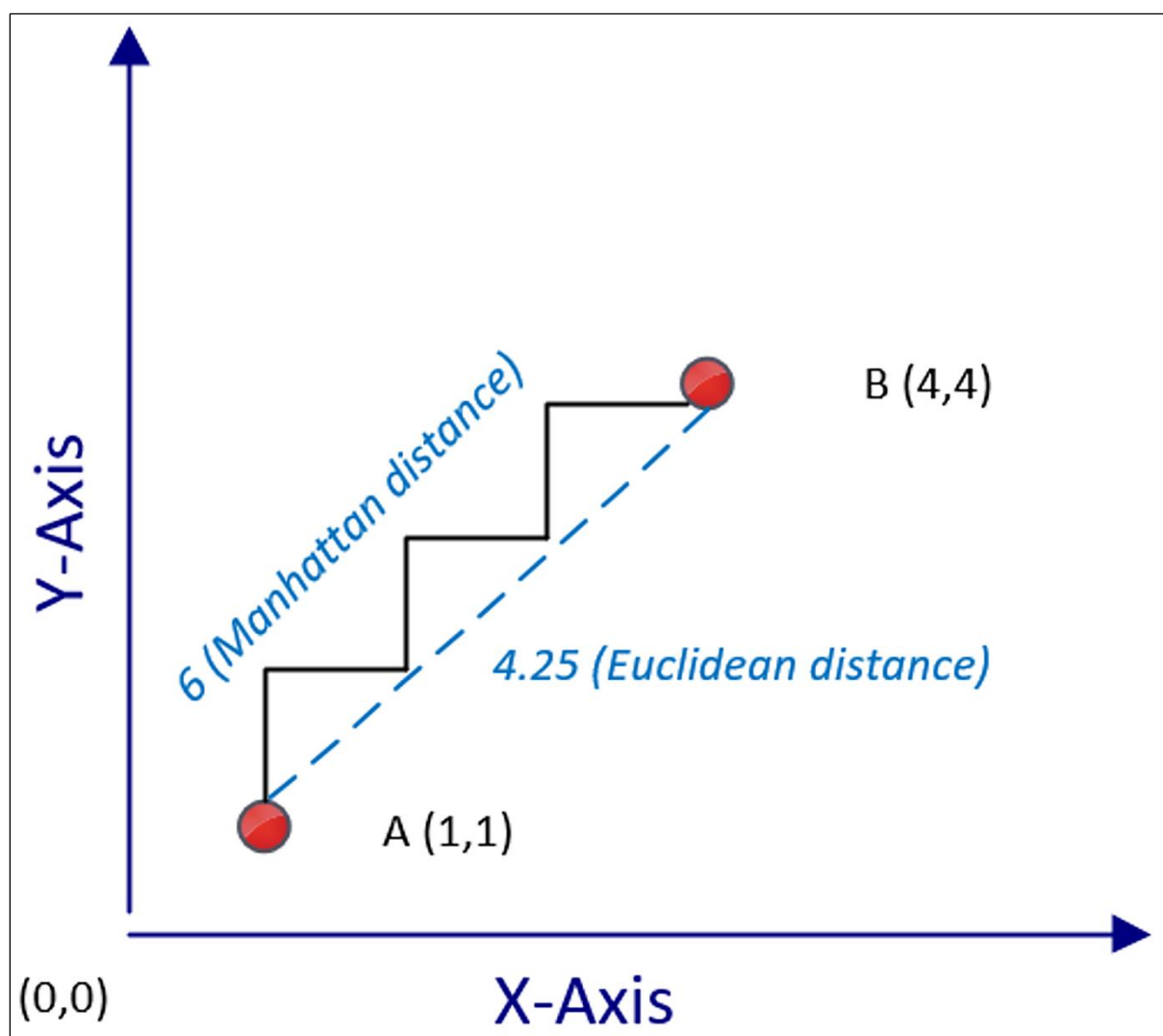


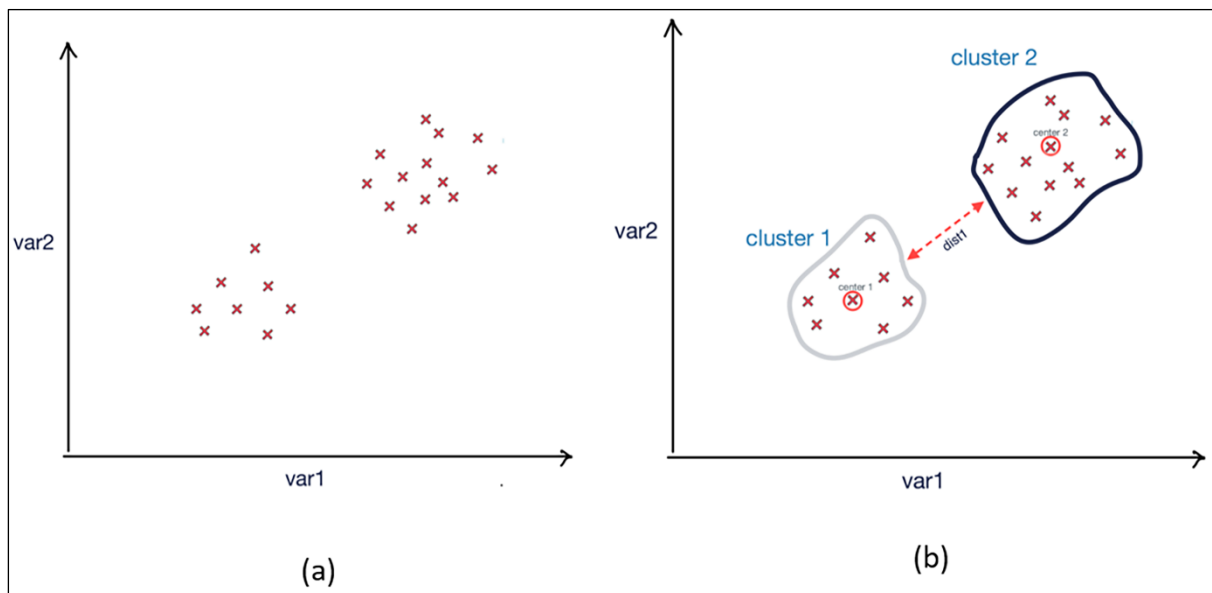
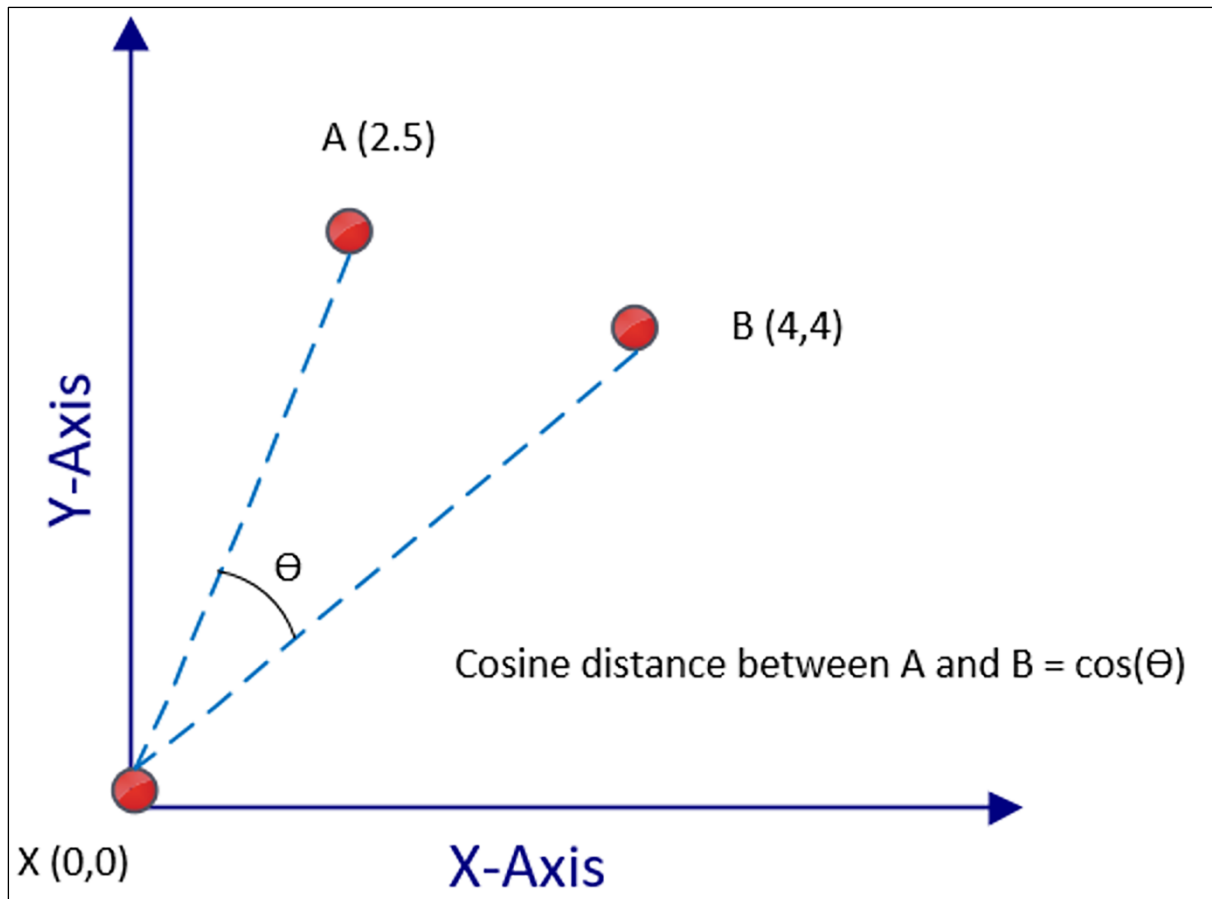


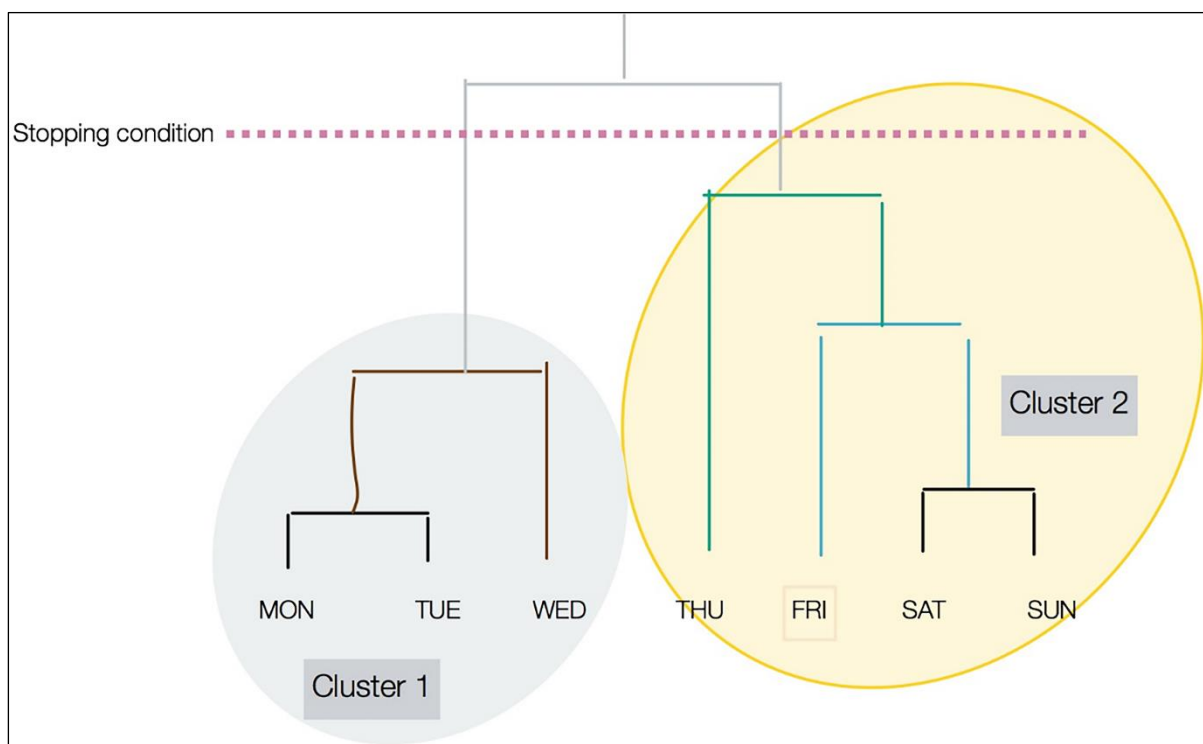
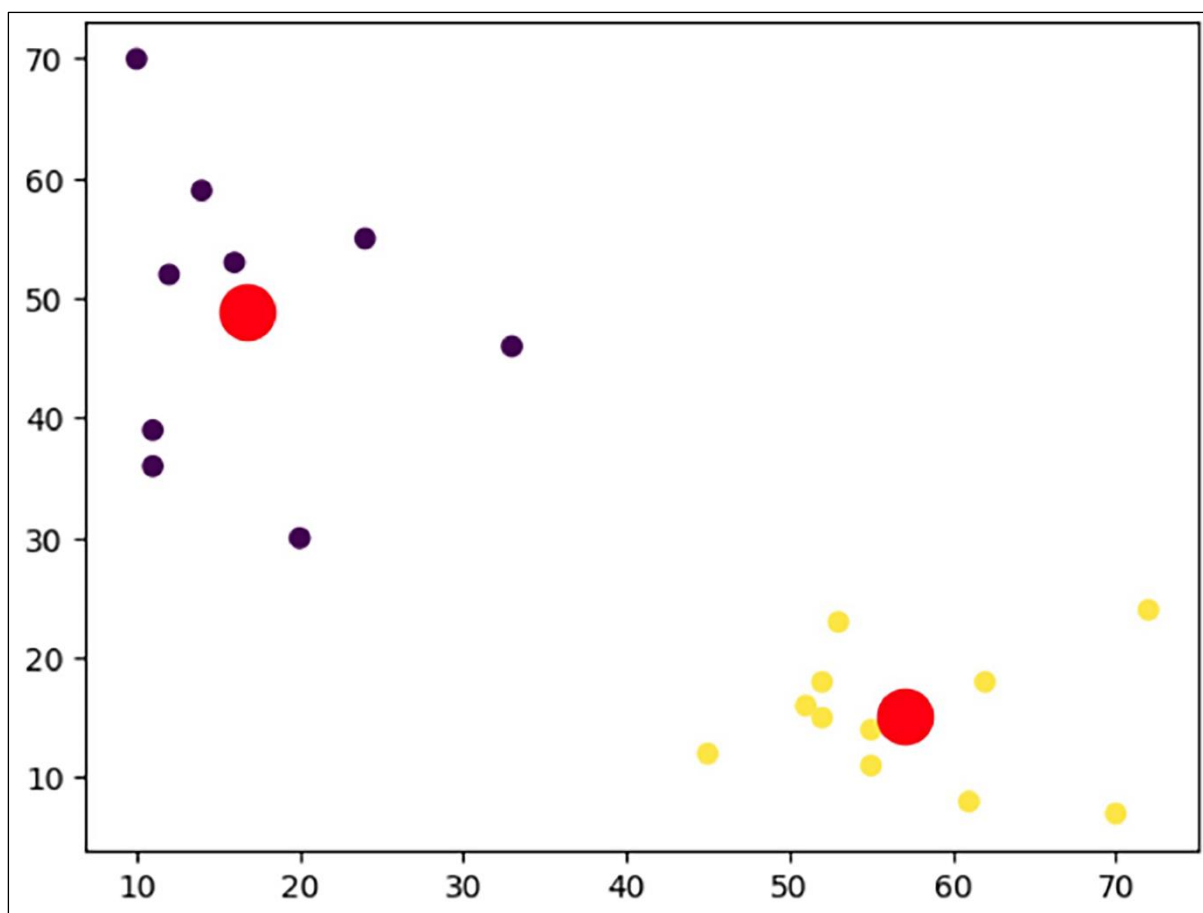
Chapter 6: Unsupervised Machine Learning Algorithms

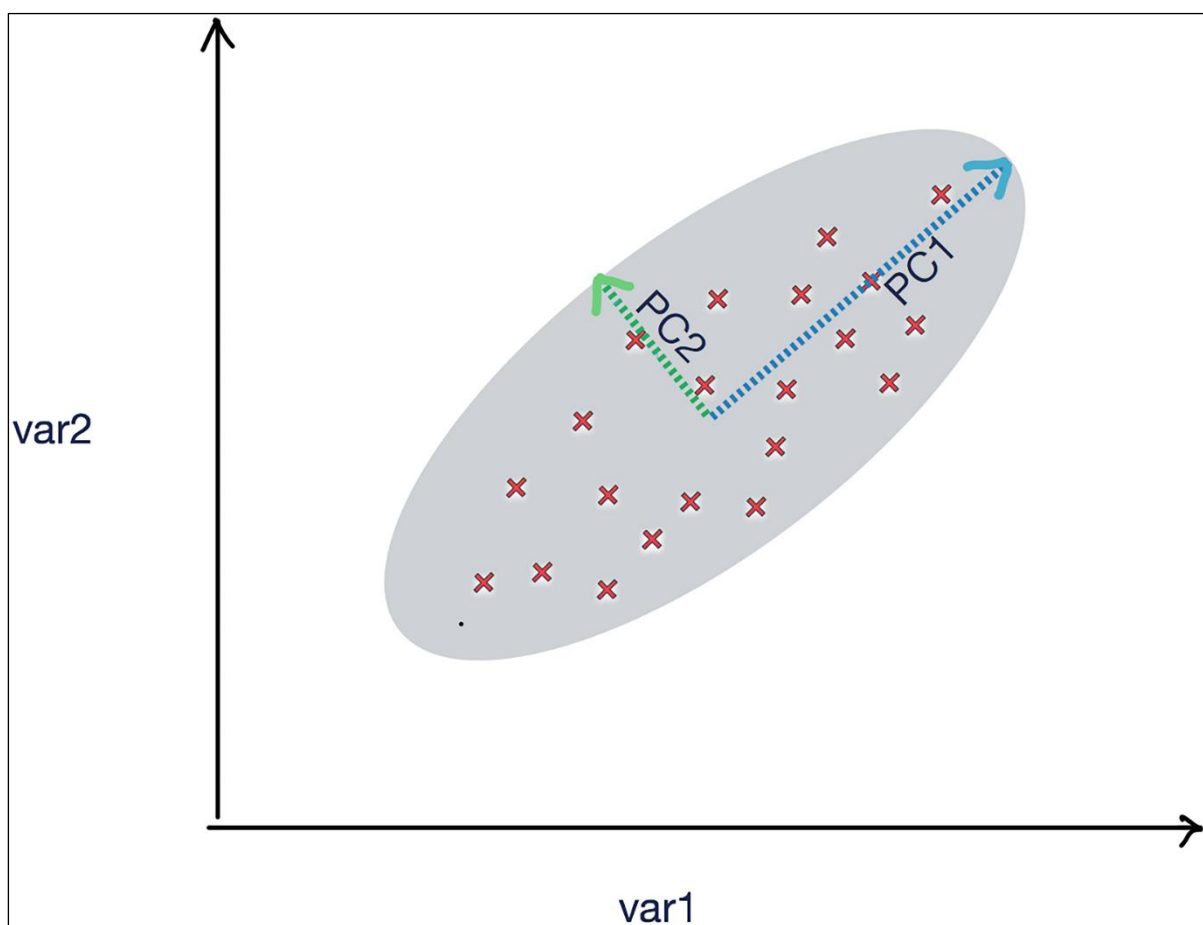
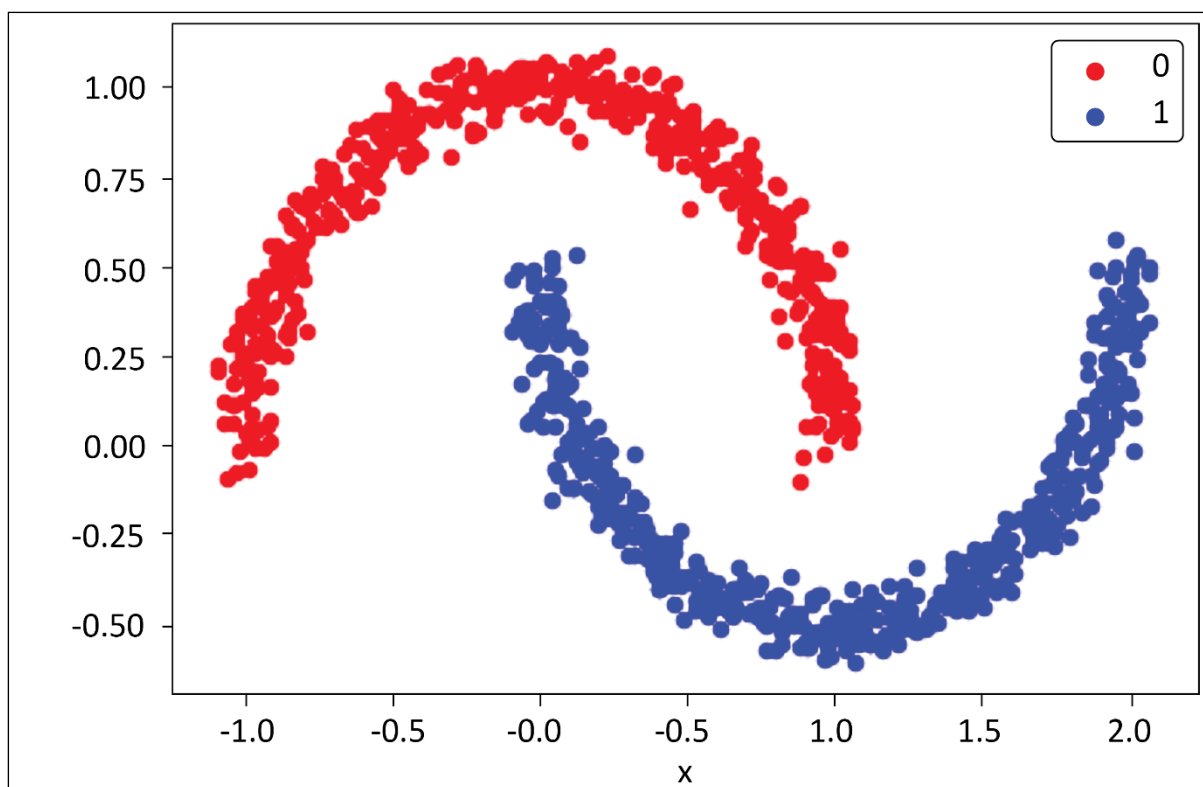






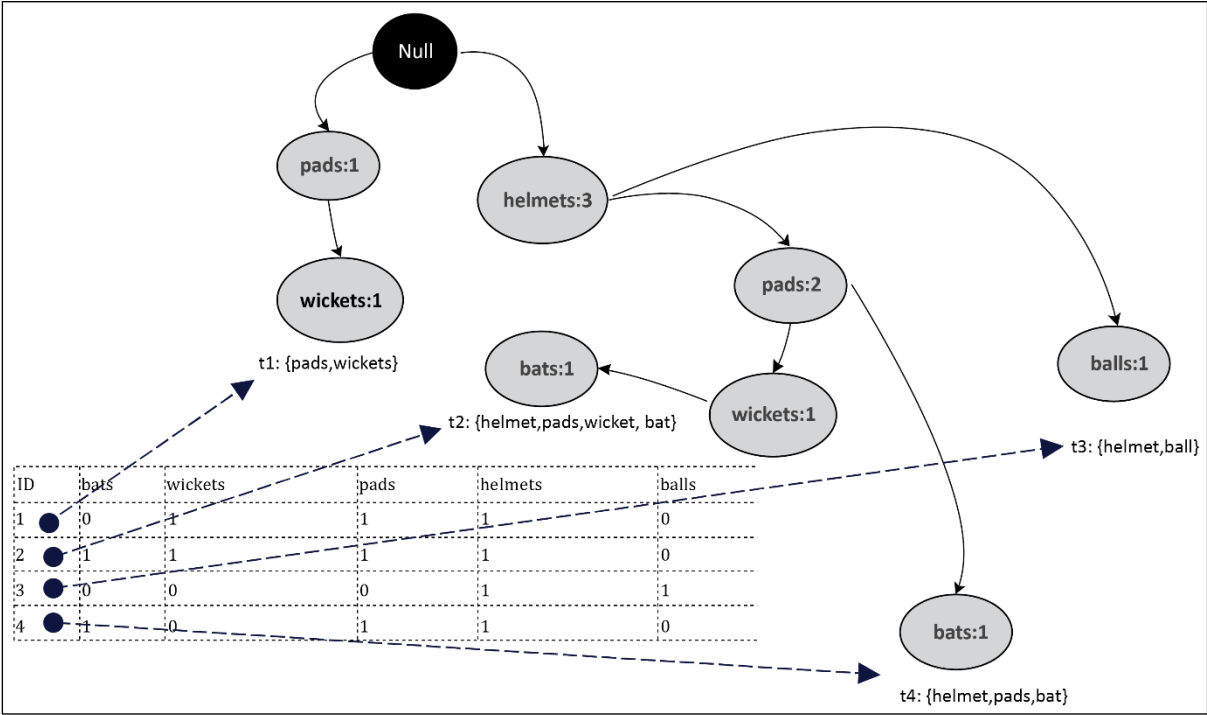
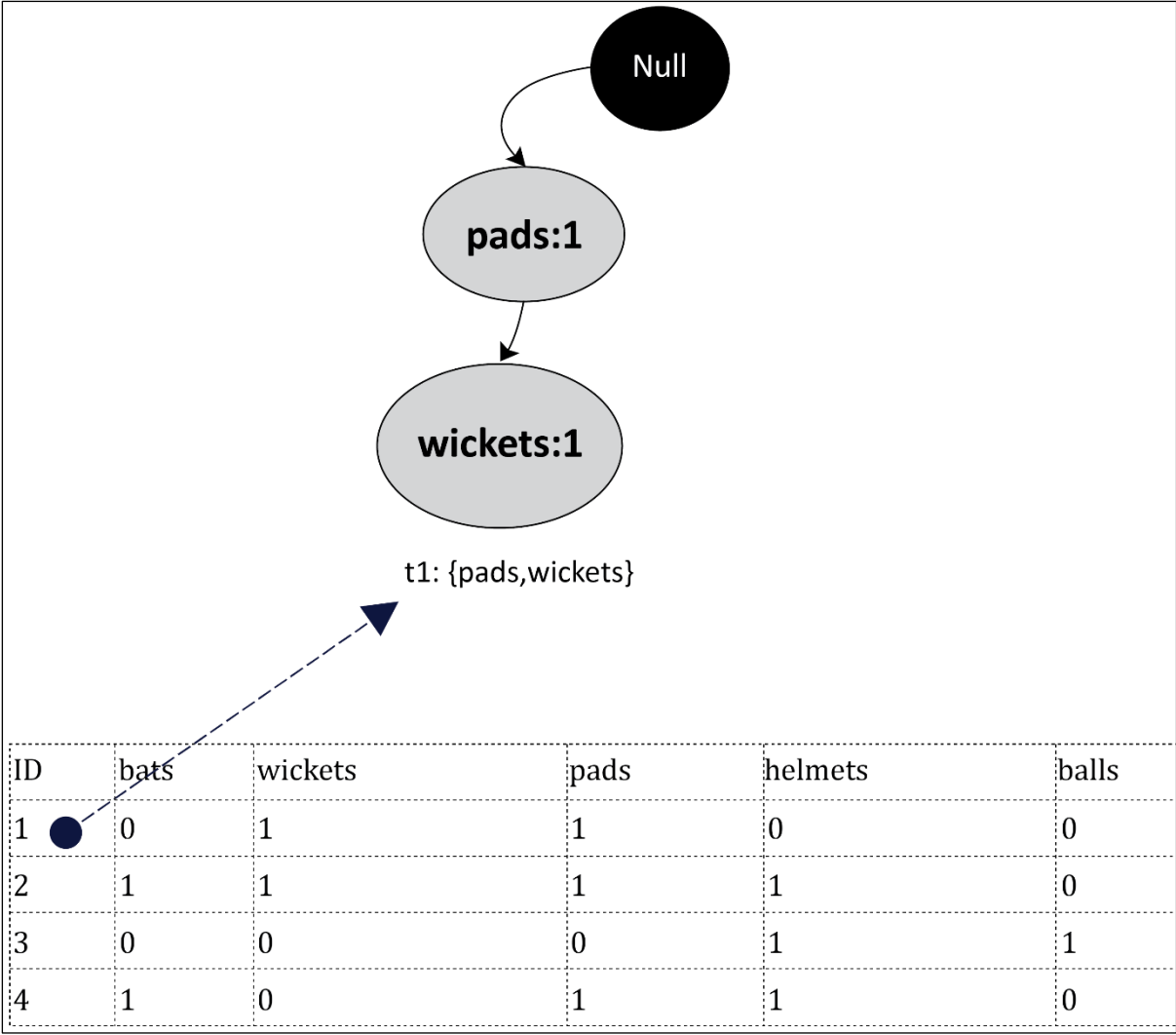






	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width		
0	0.361387	-0.084523	0.856671	0.358289	←	Coefficients for PC1
1	0.656589	0.730161	-0.173373	-0.075481	←	Coefficients for PC2
2	-0.582030	0.597911	0.076236	0.545831	←	Coefficients for PC3
3	-0.315487	0.319723	0.479839	-0.753657	←	Coefficients for PC4

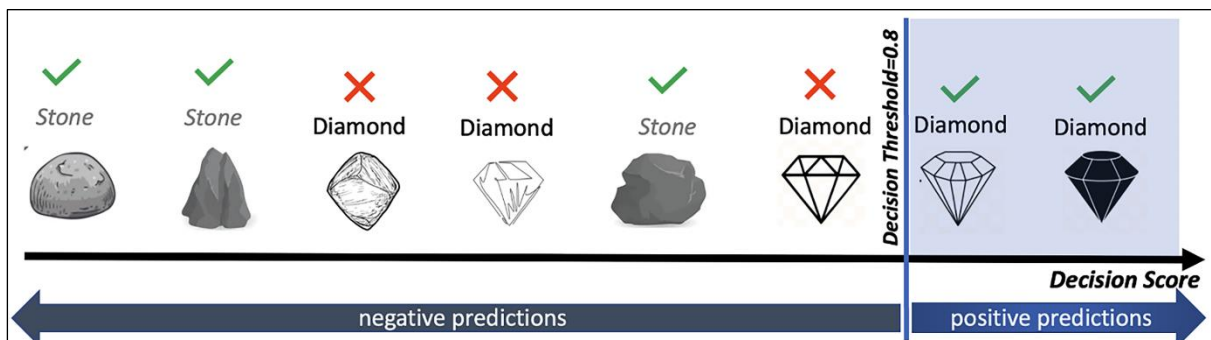
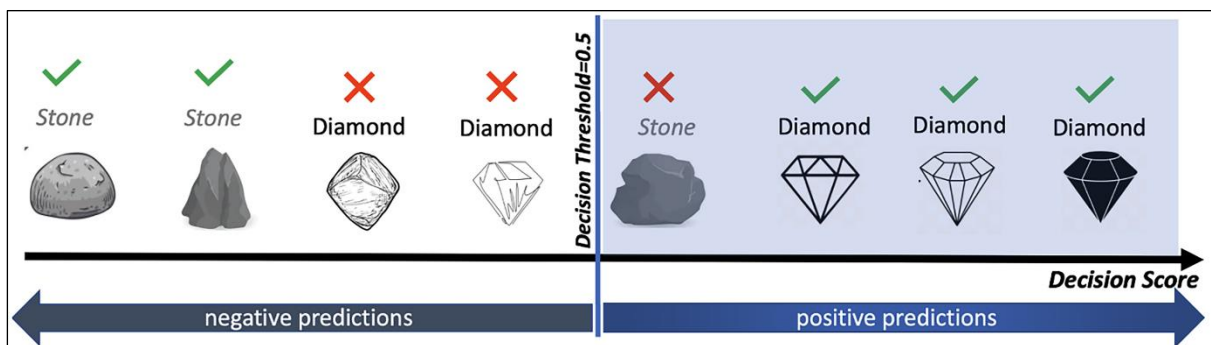
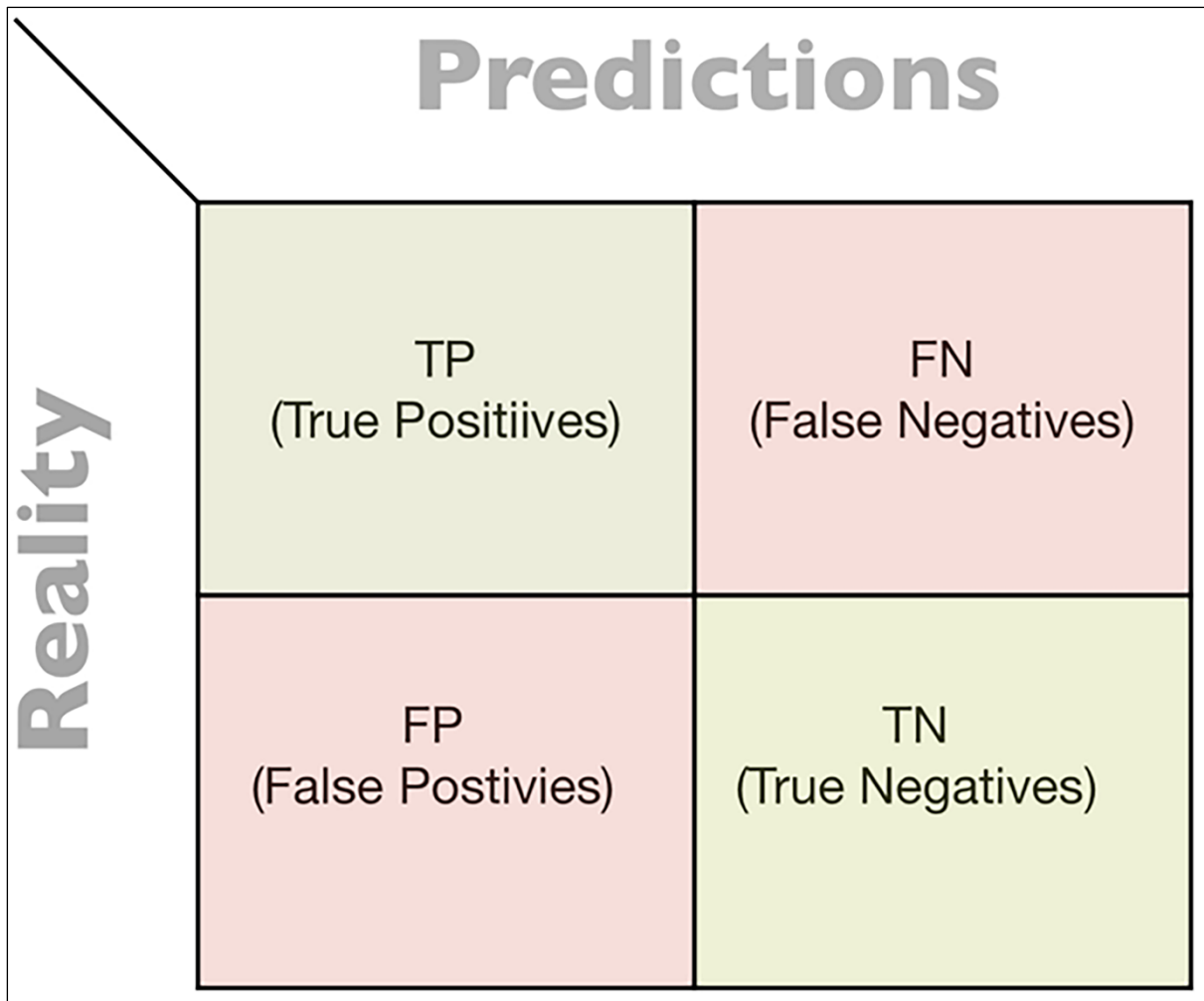
	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	PC1	PC2	PC3	PC4
0	5.1	3.5	1.4	0.2	2.818240	5.646350	-0.659768	0.031089
1	4.9	3.0	1.4	0.2	2.788223	5.149951	-0.842317	-0.065675
2	4.7	3.2	1.3	0.2	2.613375	5.182003	-0.613952	0.013383
3	4.6	3.1	1.5	0.2	2.757022	5.008654	-0.600293	0.108928
4	5.0	3.6	1.4	0.2	2.773649	5.653707	-0.541773	0.094610
...
145	6.7	3.0	5.2	2.3	7.446475	5.514485	-0.454028	-0.392844
146	6.3	2.5	5.0	1.9	7.029532	4.951636	-0.753751	-0.221016
147	6.5	3.0	5.2	2.0	7.266711	5.405811	-0.501371	-0.103650
148	6.2	3.4	5.4	2.3	7.403307	5.443581	0.091399	-0.011244
149	5.9	3.0	5.1	1.8	6.892554	5.044292	-0.268943	0.188390

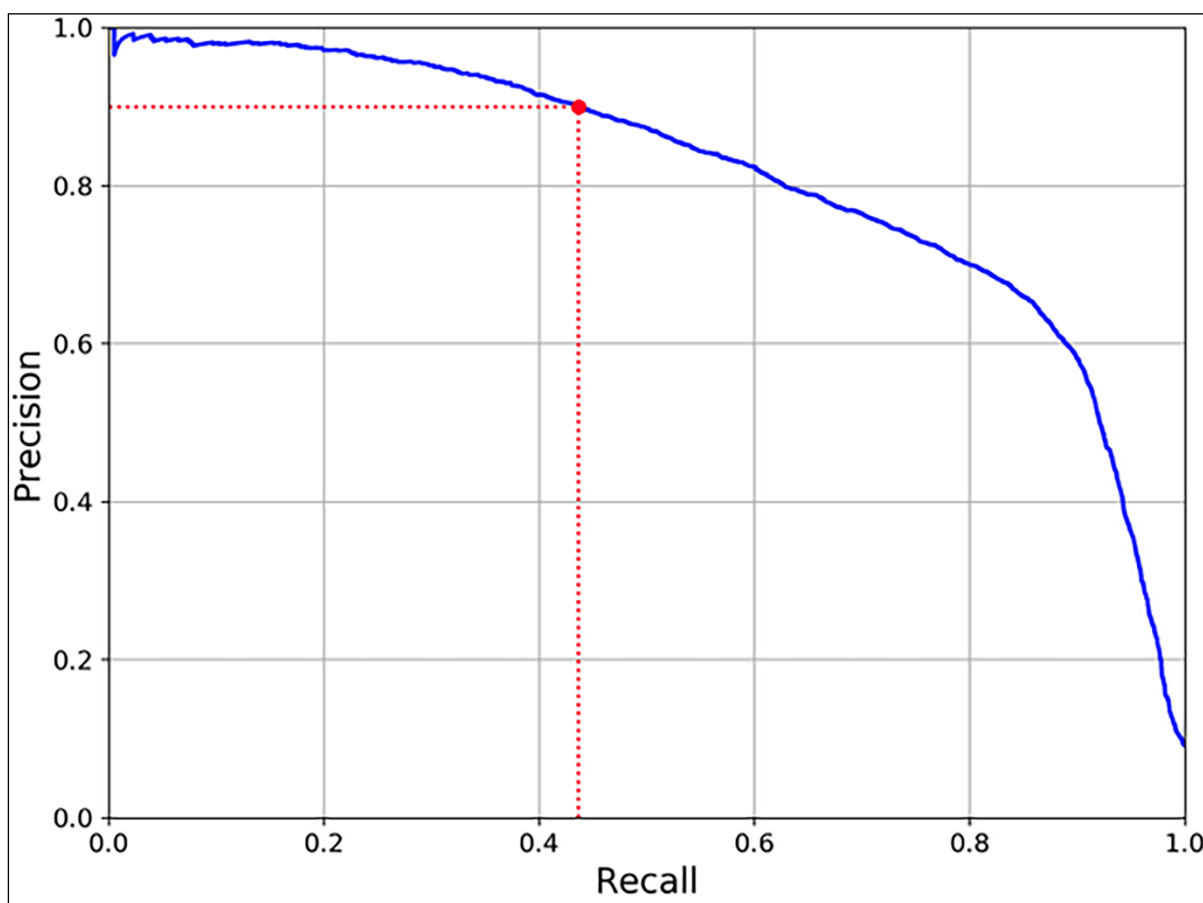
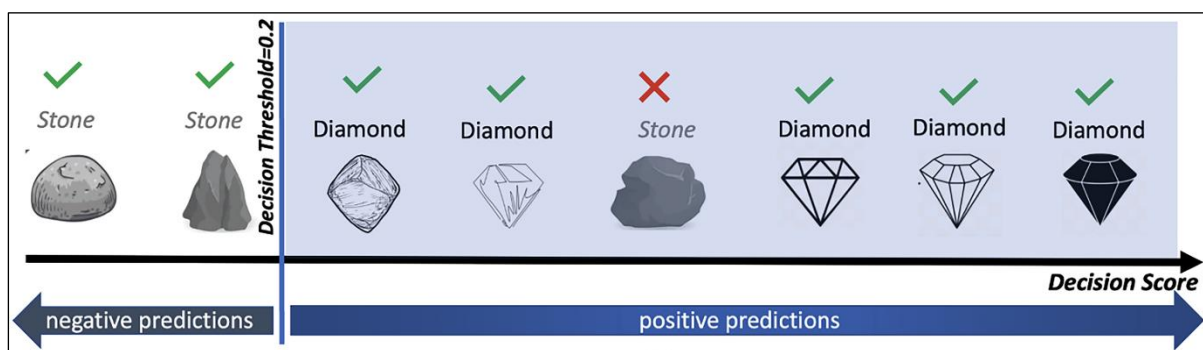


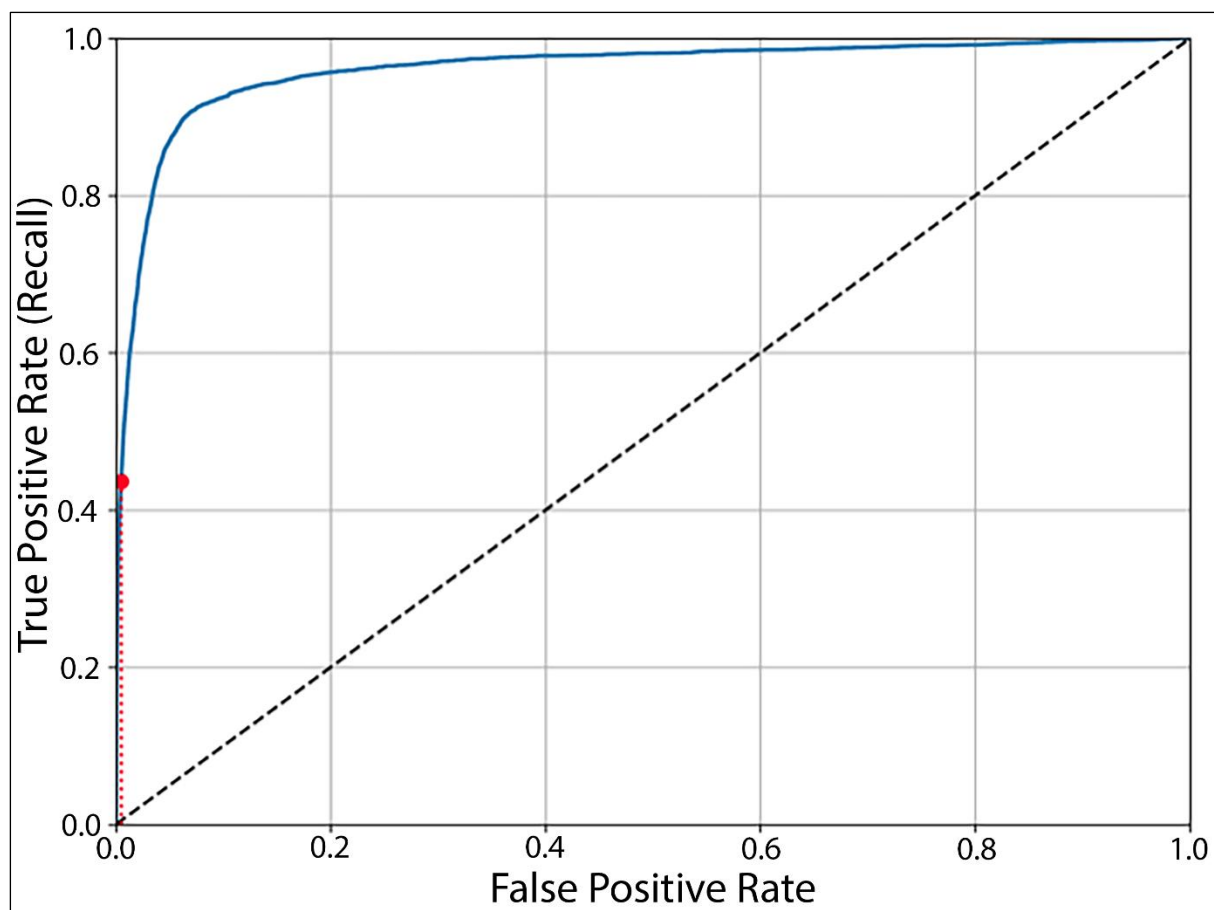
Chapter 7: Traditional Supervised Learning Algorithms

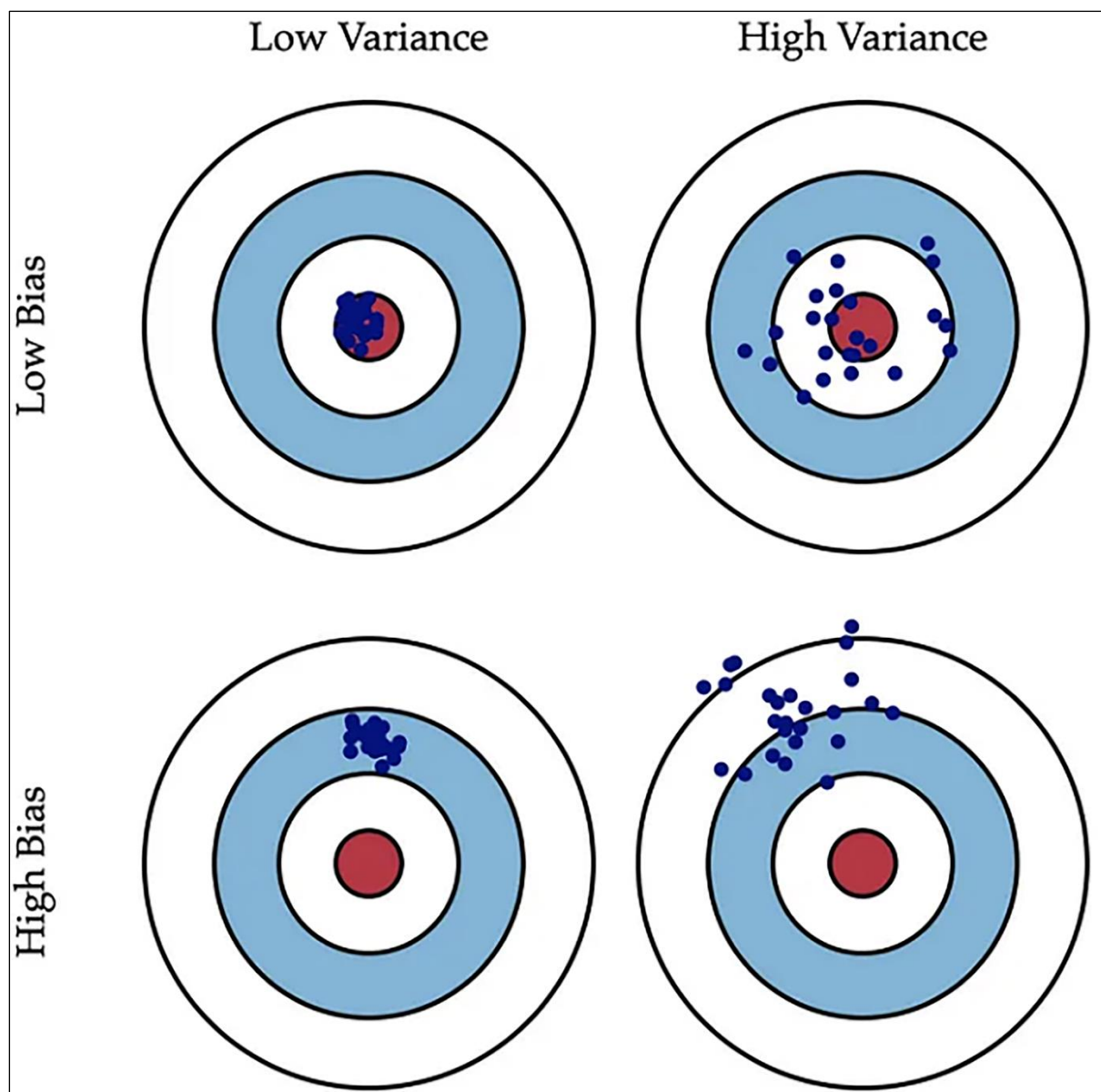
	Gender	Age	EstimatedSalary	Purchased
0	Male	19	19000	0
1	Male	35	20000	0
2	Female	26	43000	0
3	Female	27	57000	0
4	Male	19	76000	0

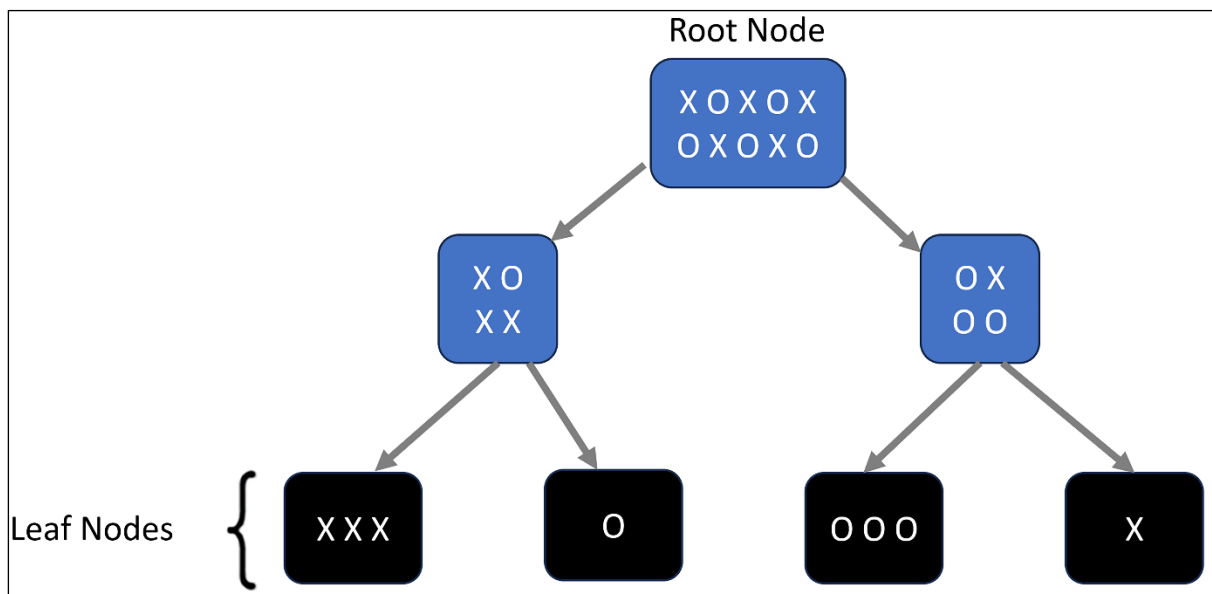
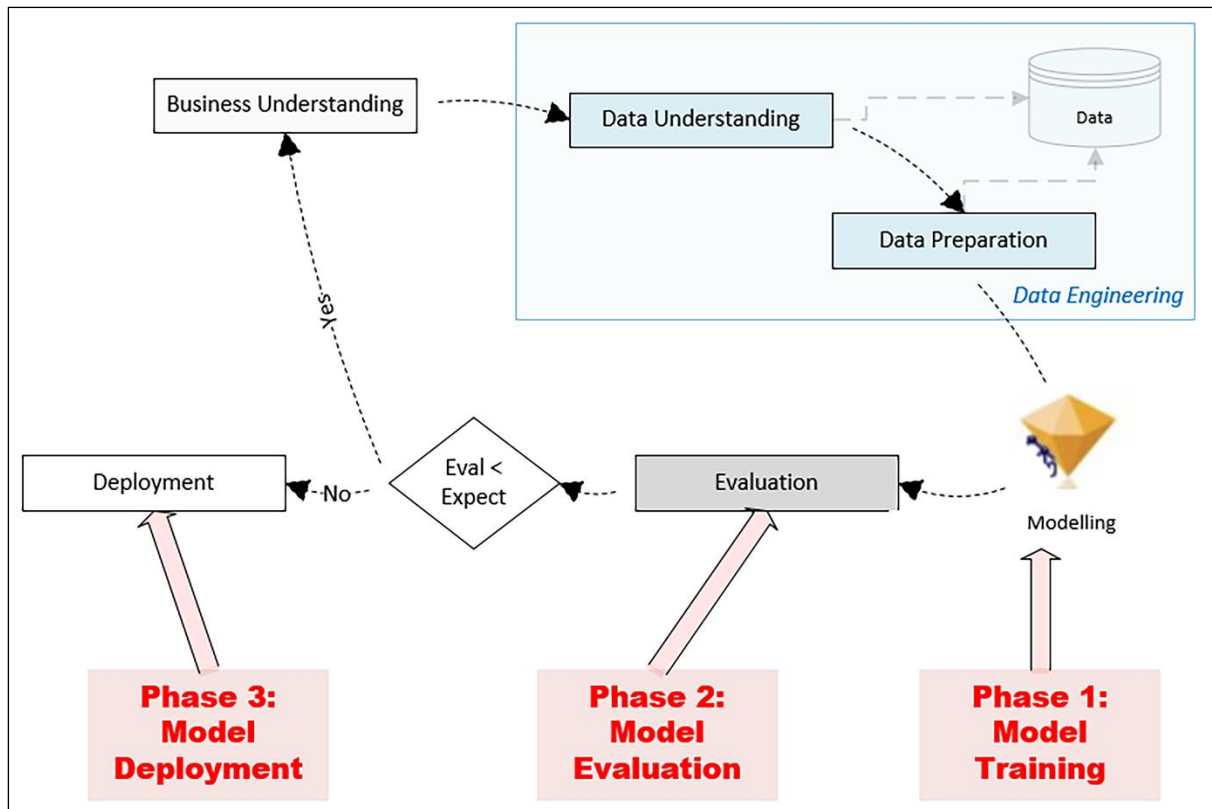
	Female	Male	Age	Estimated Salary	Purchased
0	0.0	1.0	19	19,000	0
1	0.0	1.0	35	20,000	0
2	1.0	0.0	26	43,000	0
3	1.0	0.0	27	57,000	0
4	0.0	1.0	19	76,000	0

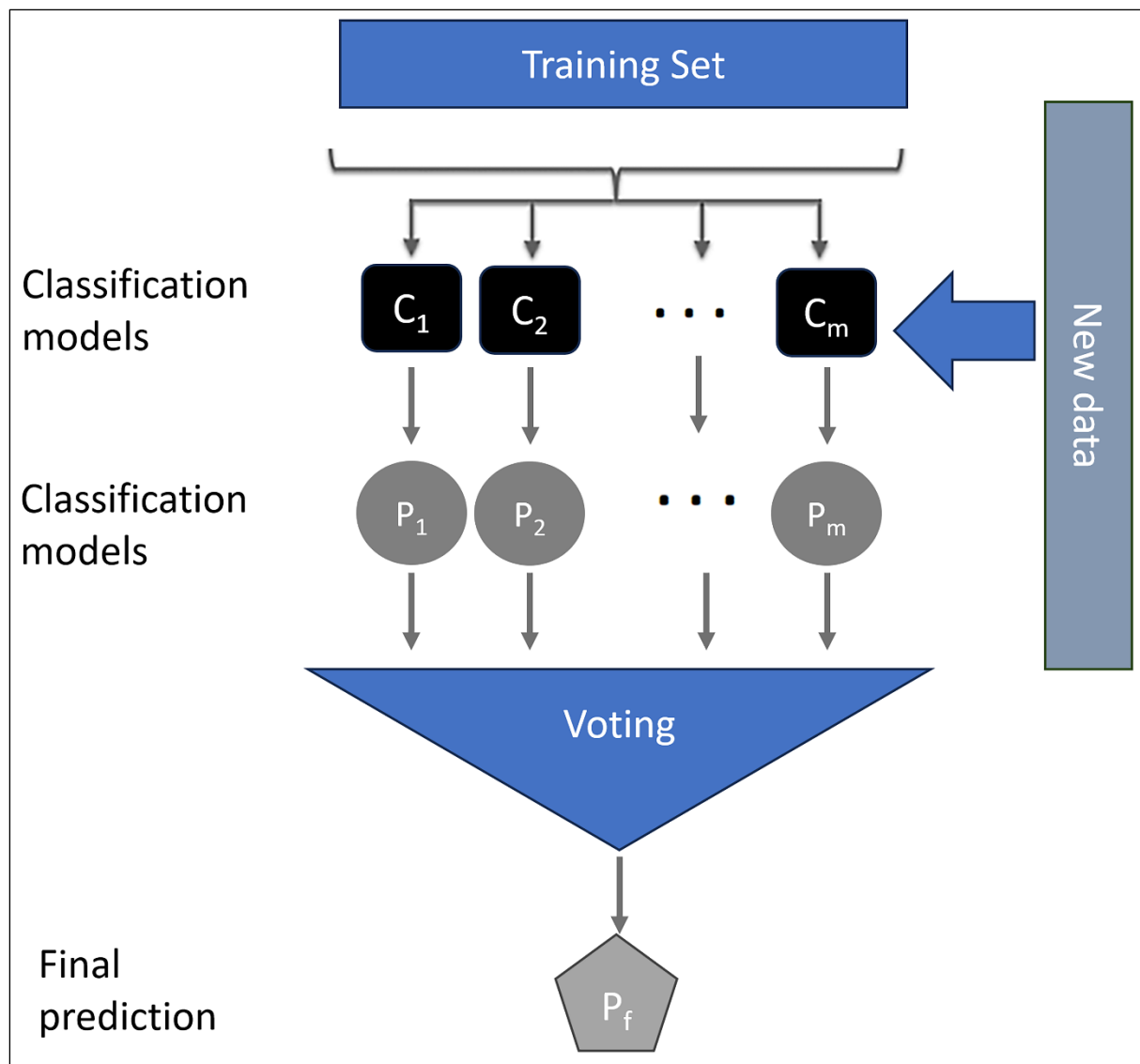


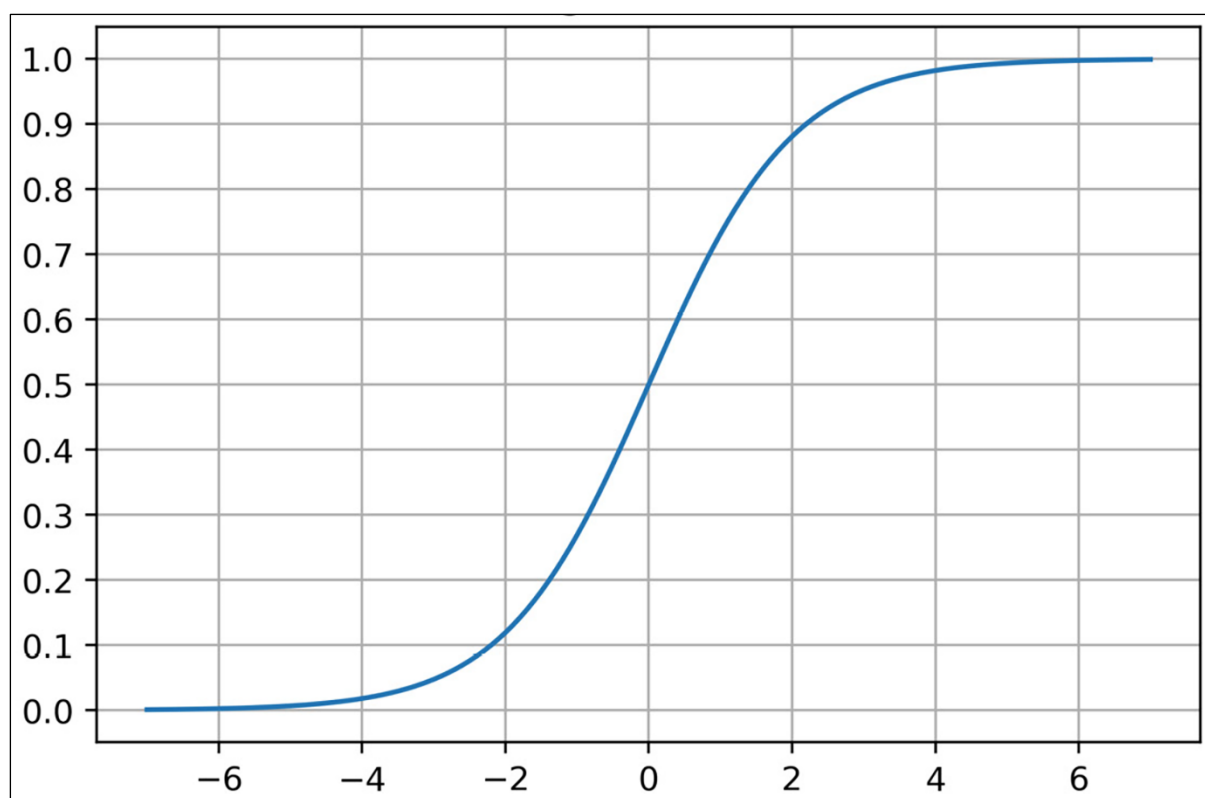


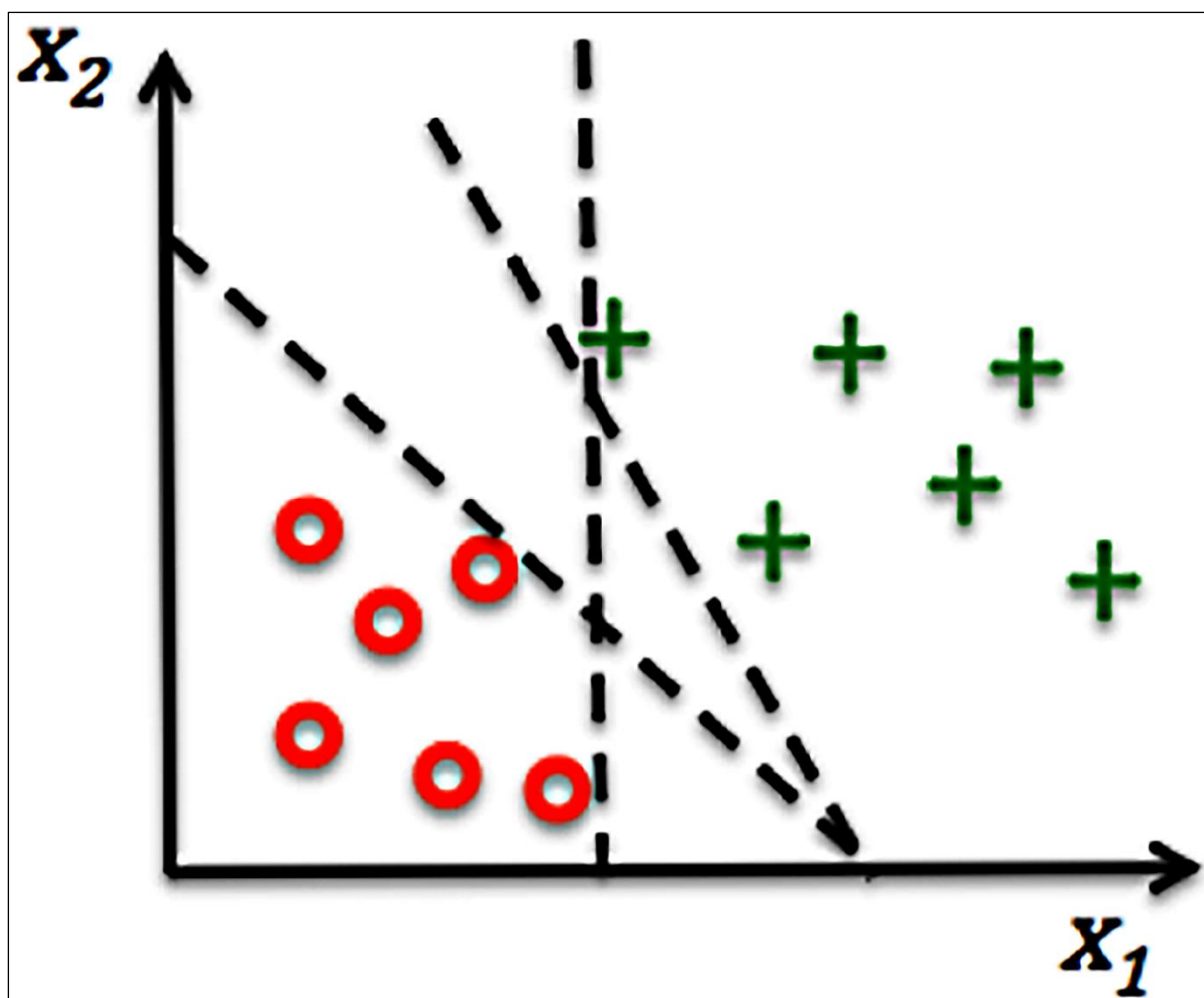


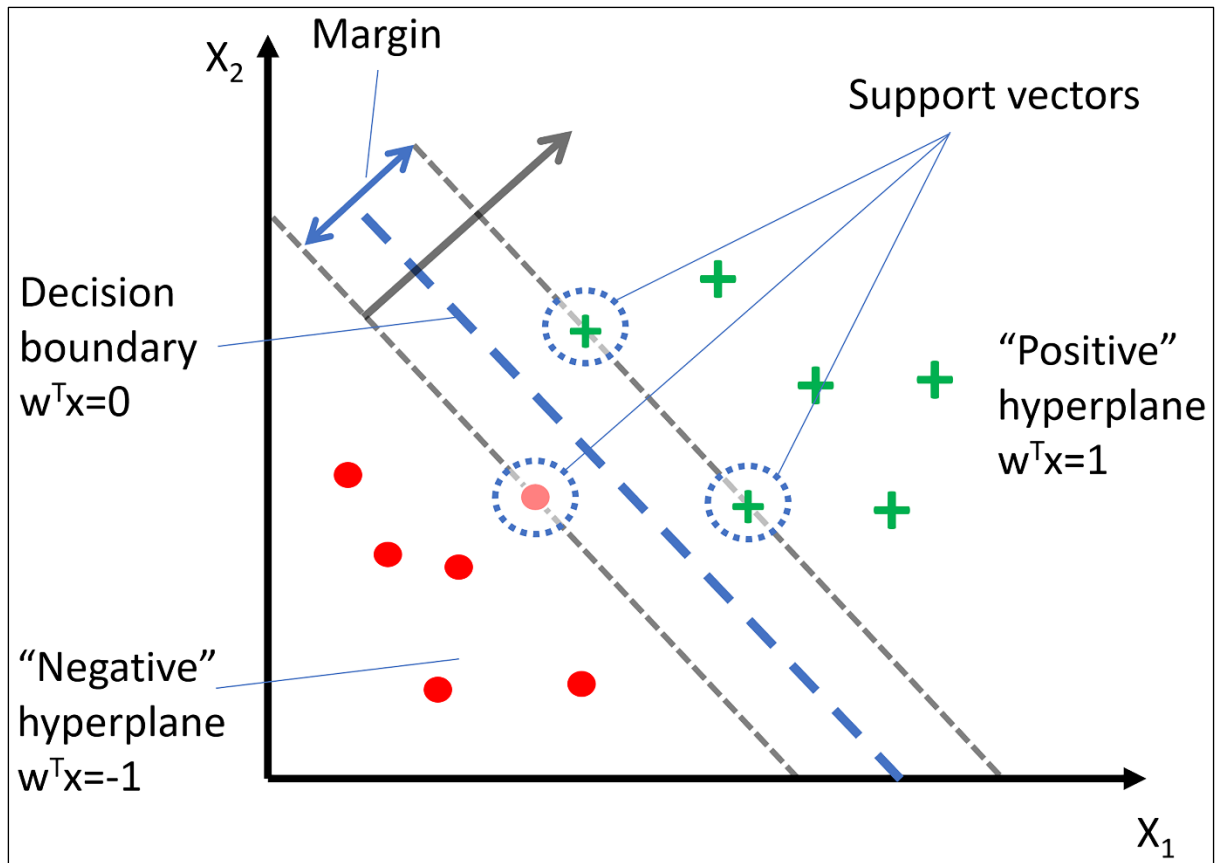




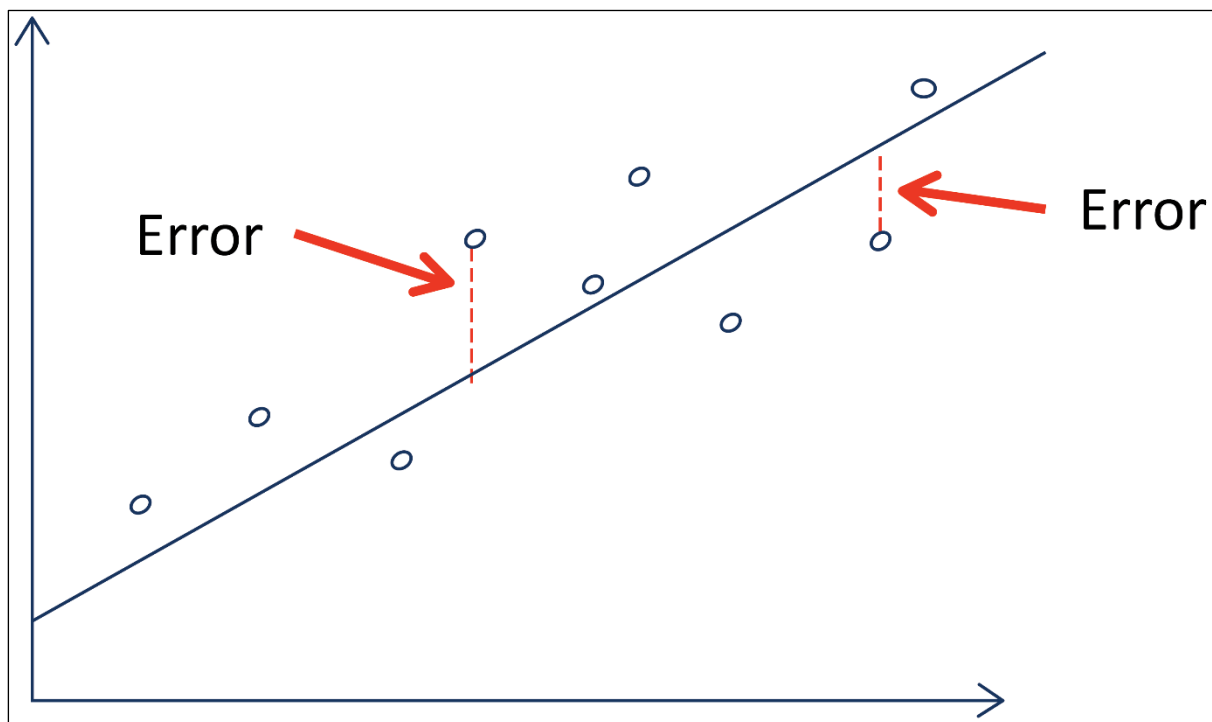
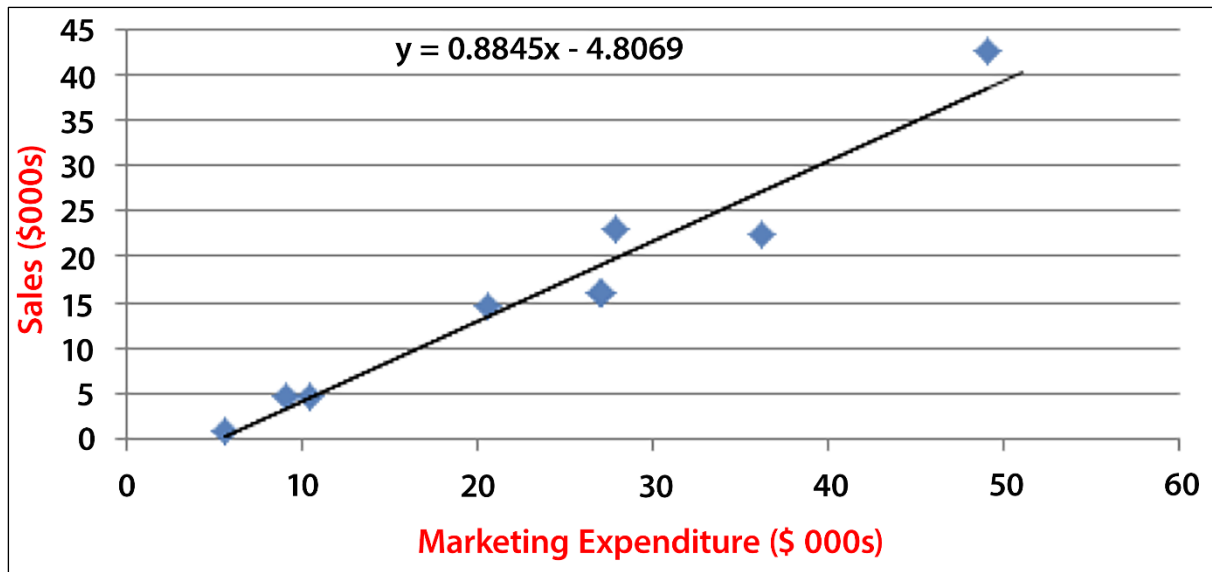








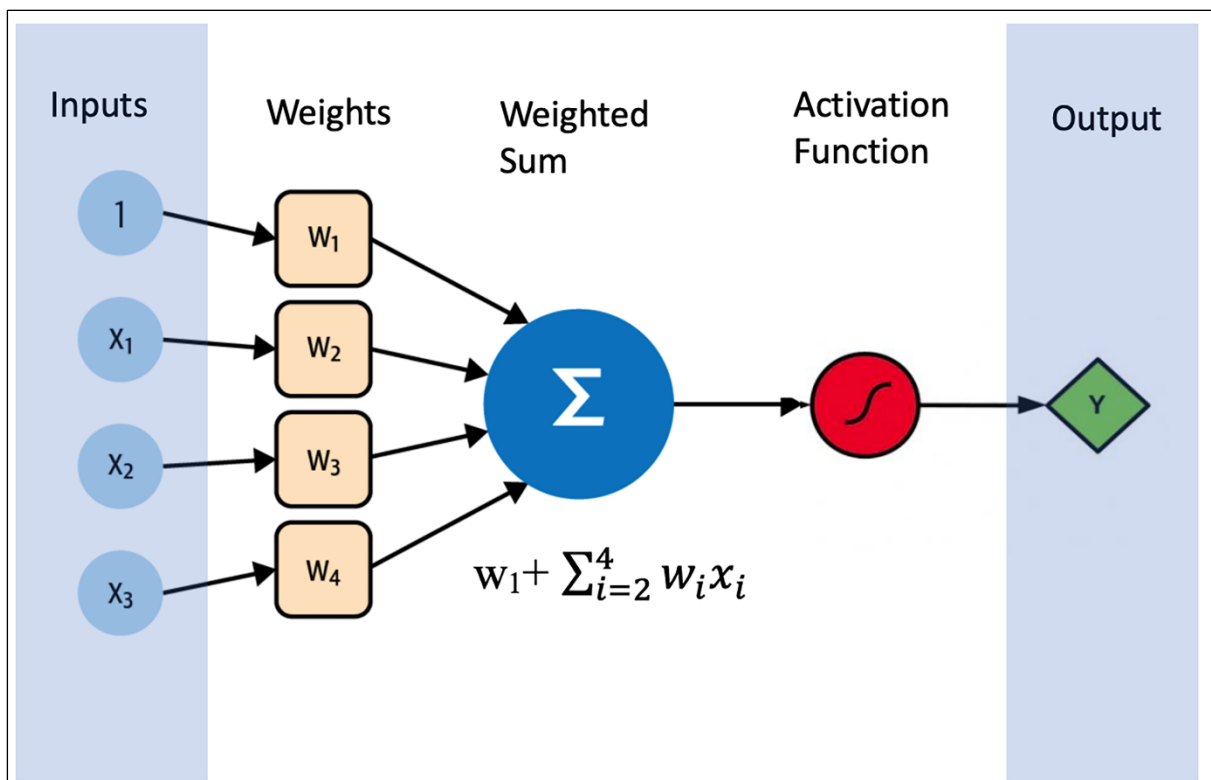
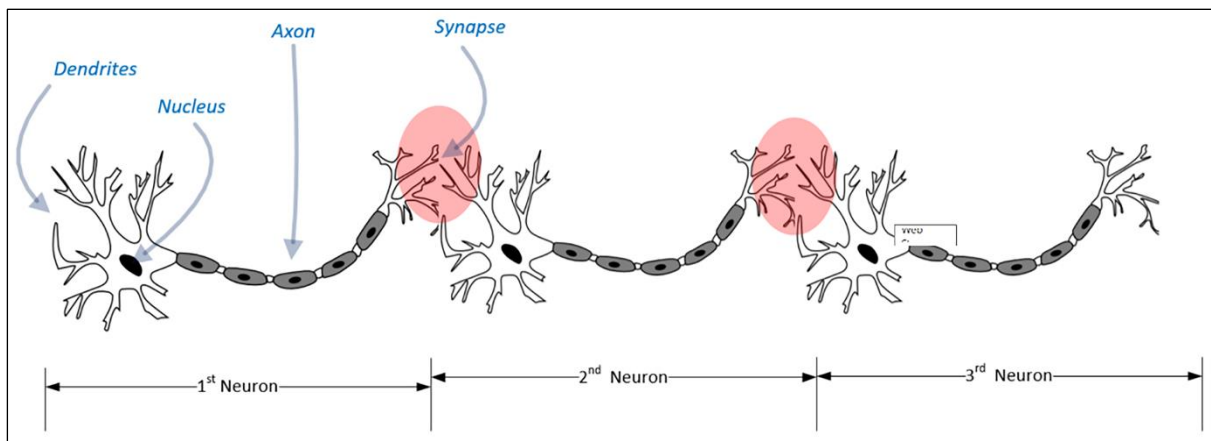
	NAME	CYLINDERS	DISPLACEMENT	HORSEPOWER	WEIGHT	ACCELERATION	MPG
0	chevrolet chevelle malibu	8	307.0	130	3504	12.0	18.0
1	buick skylark 320	8	350.0	165	3693	11.5	15.0
2	plymouth satellite	8	318.0	150	3436	11.0	18.0
3	amc rebel sst	8	304.0	150	3433	12.0	16.0
4	ford torino	8	302.0	140	3449	10.5	17.0

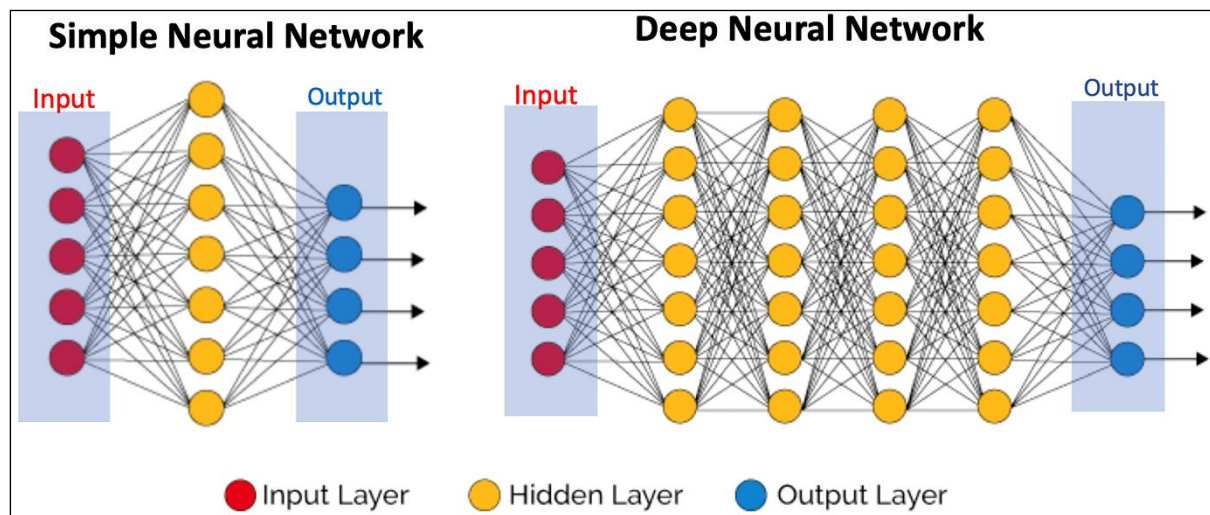
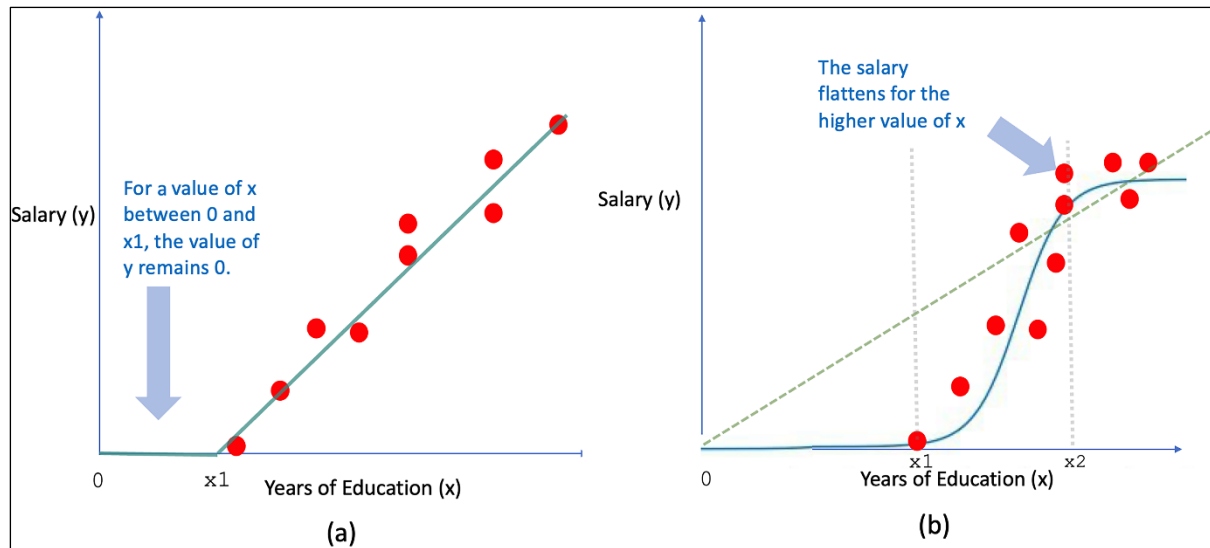


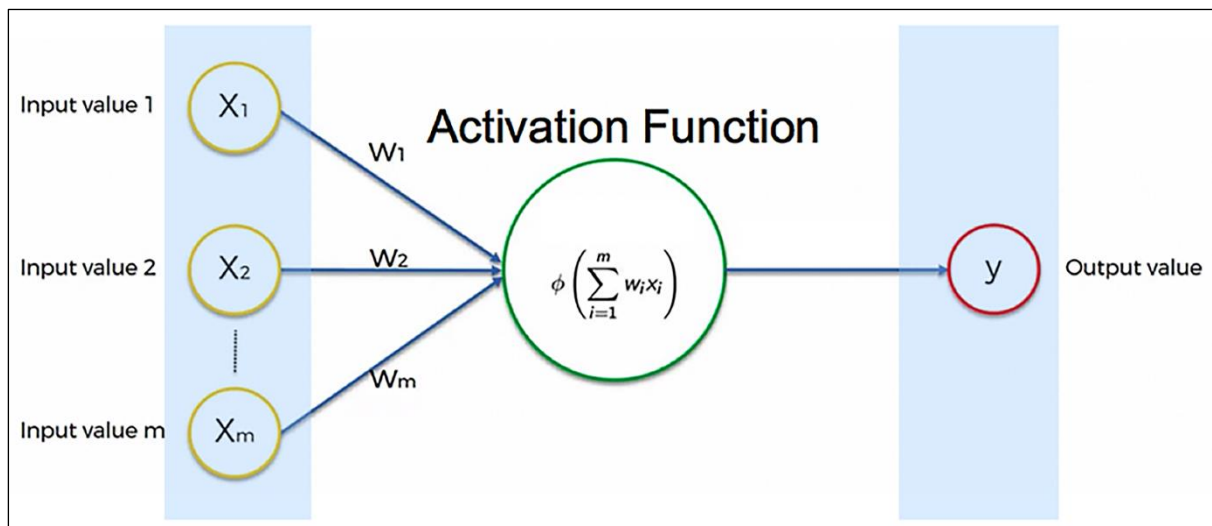
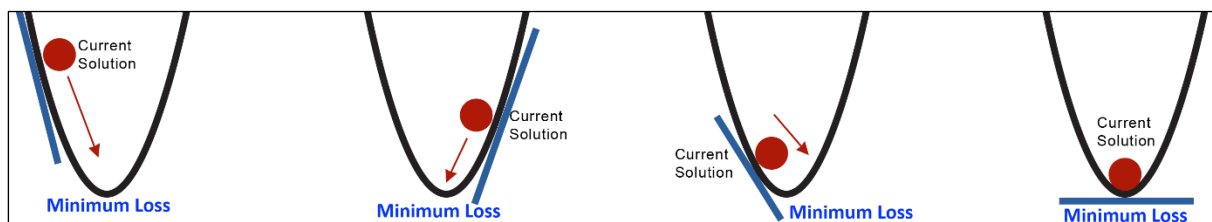
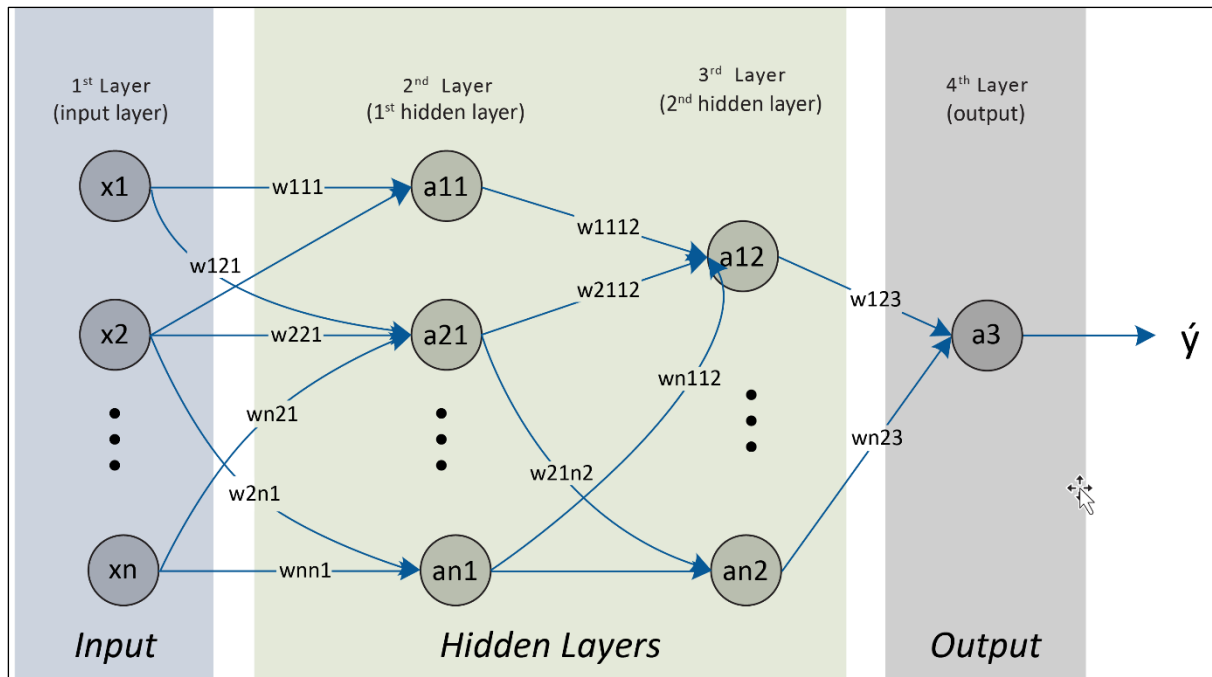
	Date	MinTemp	MaxTemp	Rainfall	Evaporation	Sunshine	WindGustDir	WindGustSpeed	WindDir9am	WindDir3pm	WindSpeed9am	WindSpeed3pm
0	2007-11-01	8.0	24.3	0.0	3.4	6.3	7	30.0	12	7	6.0	20
1	2007-11-02	14.0	26.9	3.6	4.4	9.7	1	39.0	0	13	4.0	17
2	2007-11-03	13.7	23.4	3.6	5.8	3.3	7	85.0	3	5	6.0	6
3	2007-11-04	13.3	15.5	39.8	7.2	9.1	7	54.0	14	13	30.0	24
4	2007-11-05	7.6	16.1	2.8	5.6	10.6	10	50.0	10	2	20.0	28

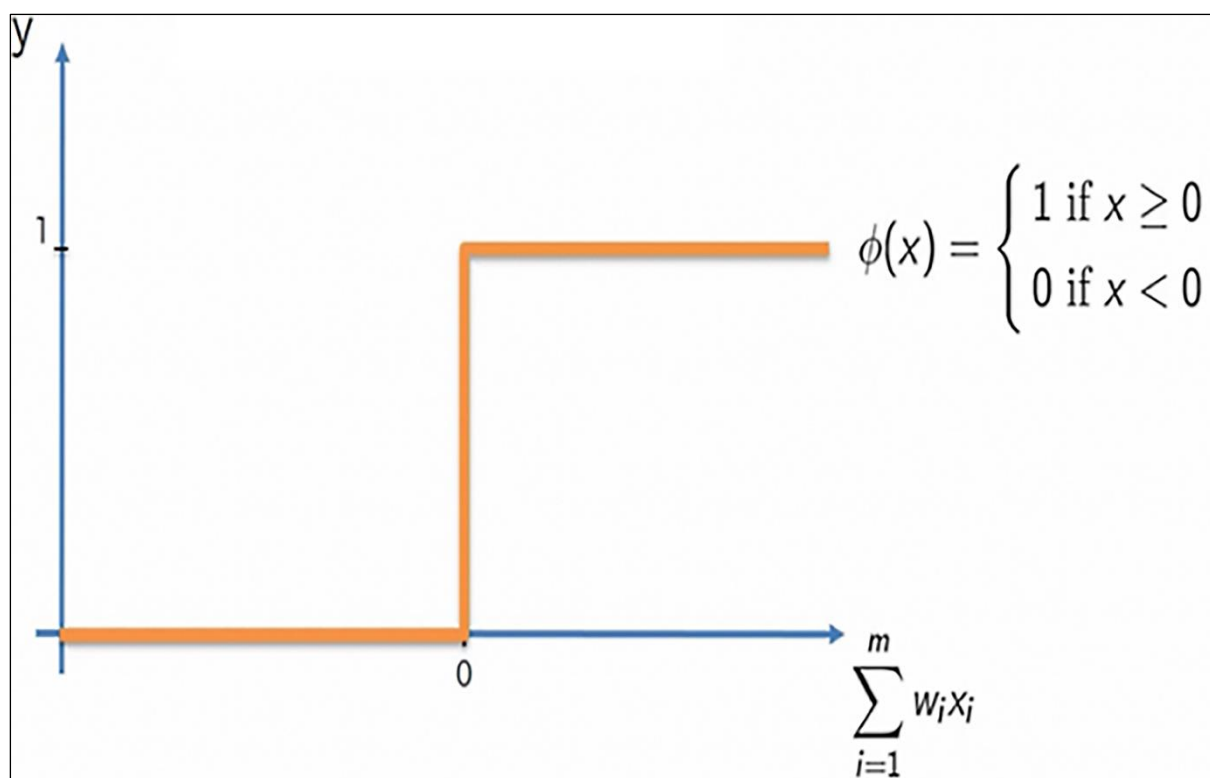
	Humidity9am	Humidity3pm	Pressure9am	Pressure3pm	Cloud9am	Cloud3pm	Temp9am	Temp3pm	RainToday	RISK_MM	RainTomorrow
0	68	29	1019.7	1015.0	7	7	14.4	23.6	0	3.6	1
1	80	36	1012.4	1008.4	5	3	17.5	25.7	1	3.6	1
2	82	69	1009.5	1007.2	8	7	15.4	20.2	1	39.8	1
3	62	56	1005.5	1007.0	2	7	13.5	14.1	1	2.8	1
4	68	49	1018.3	1018.5	7	7	11.1	15.4	1	0.0	0

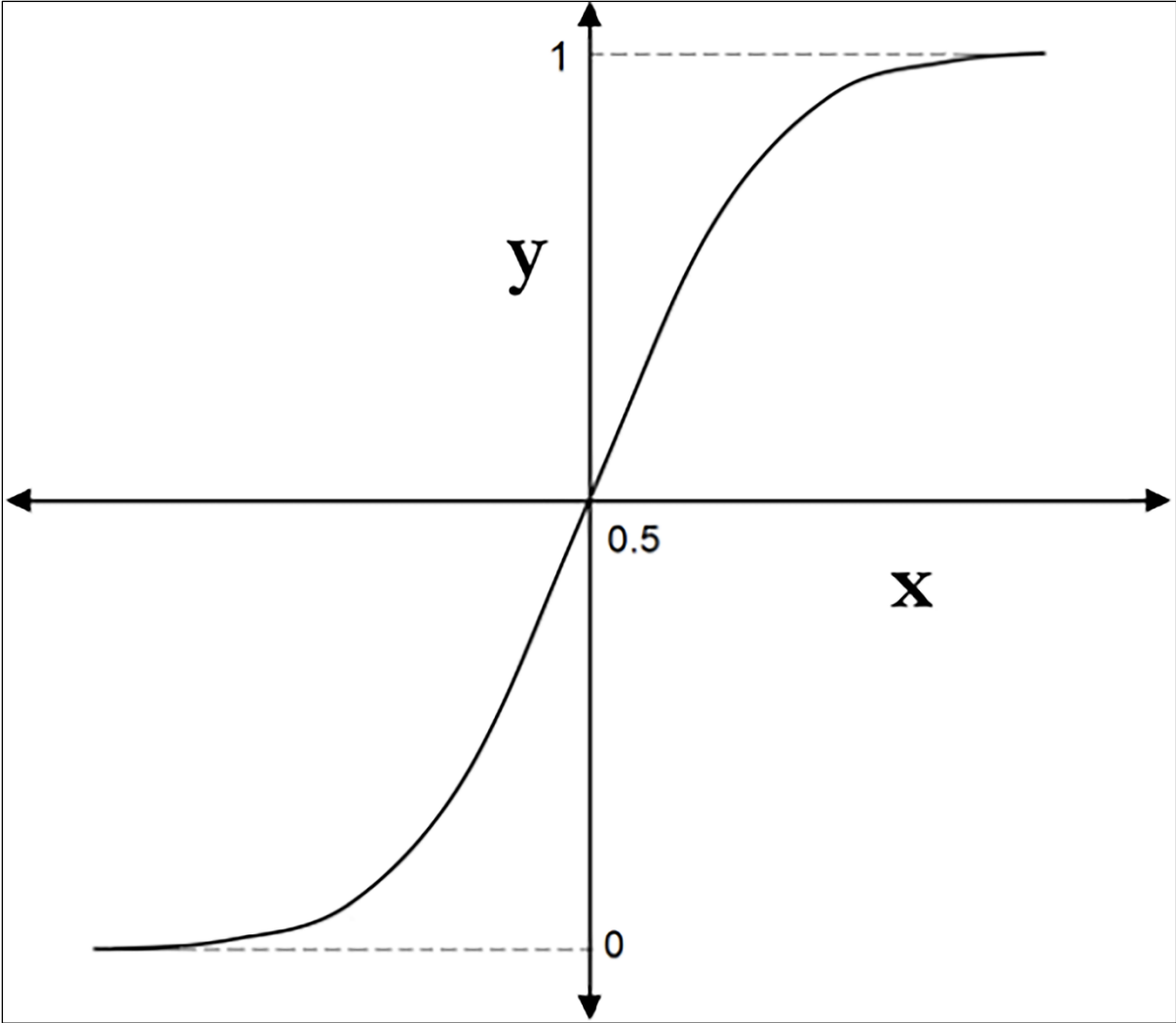
Chapter 8: Neural Network Algorithms

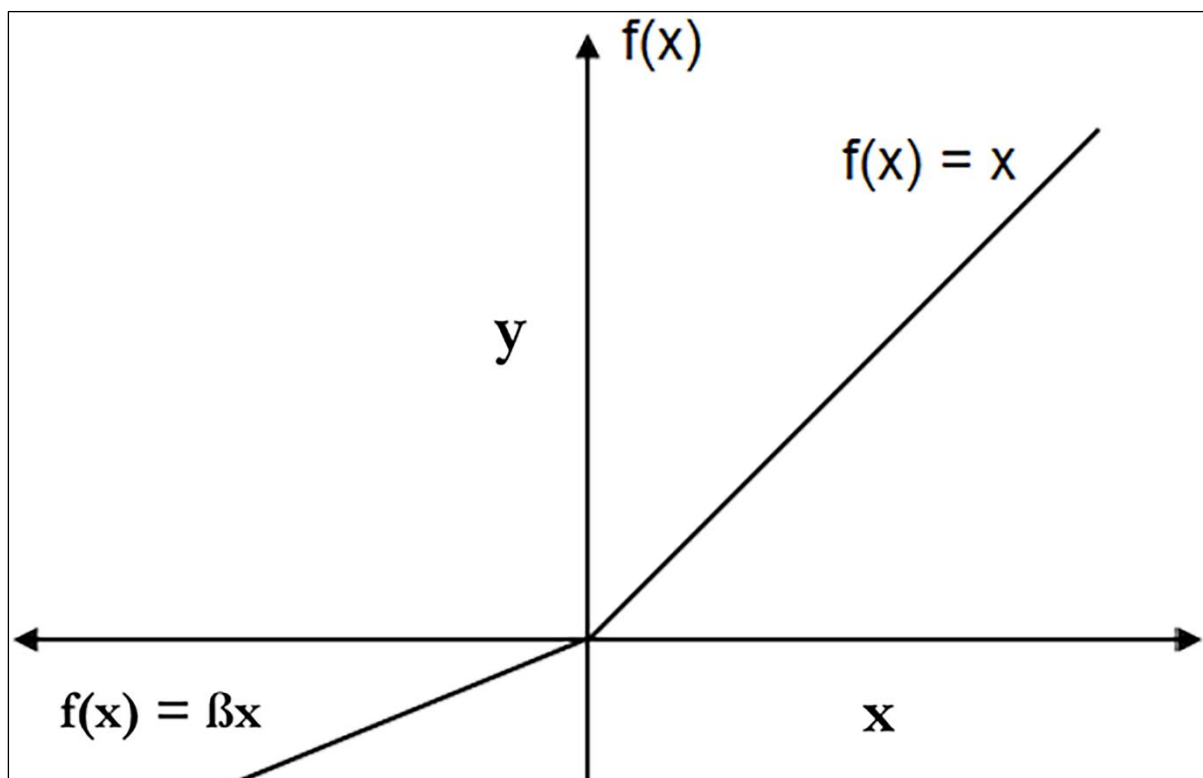
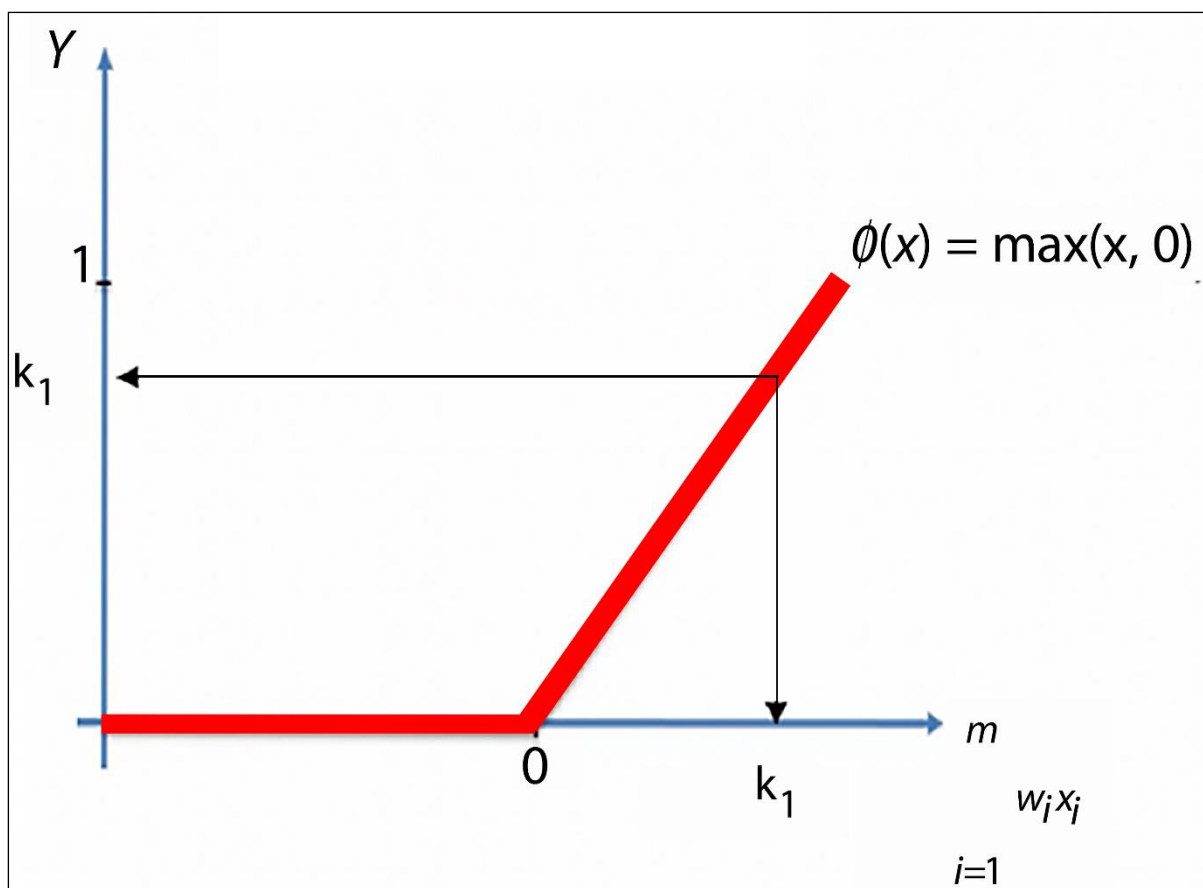


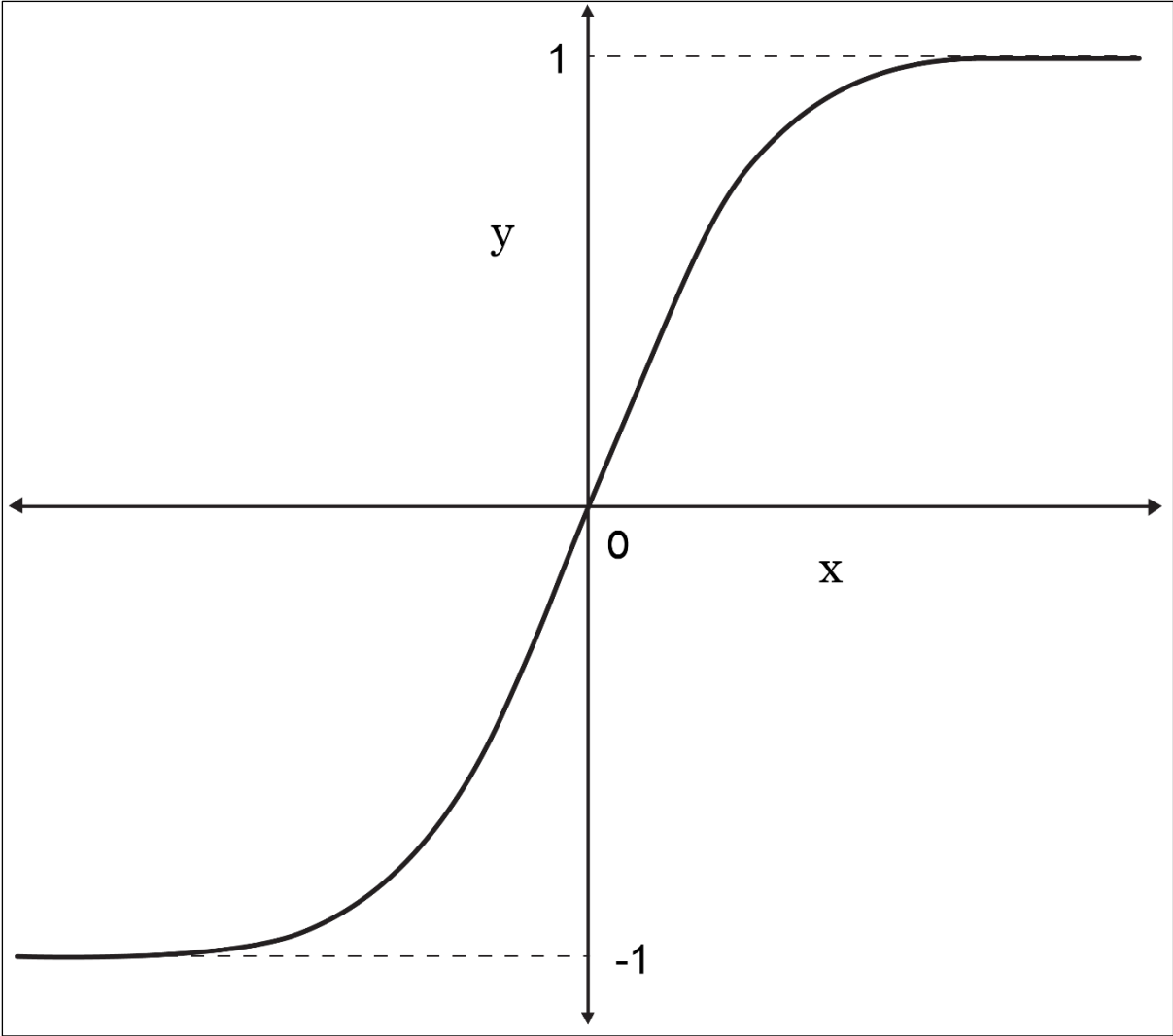


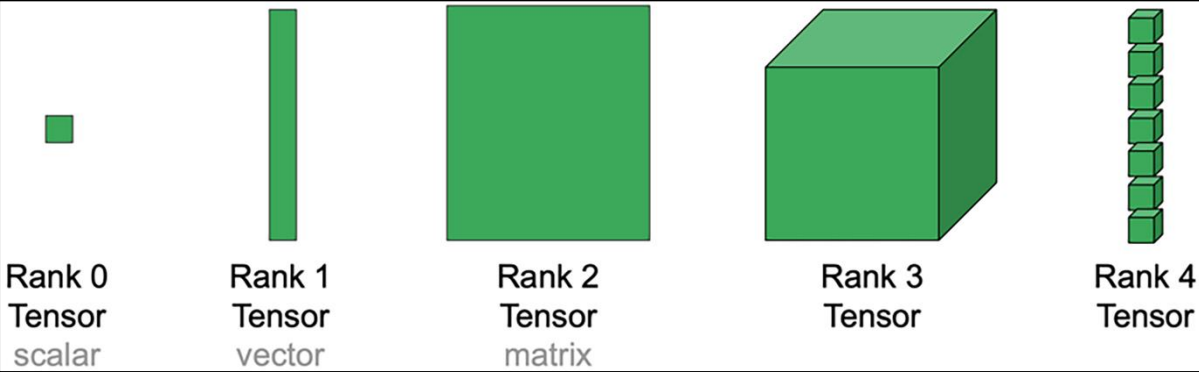
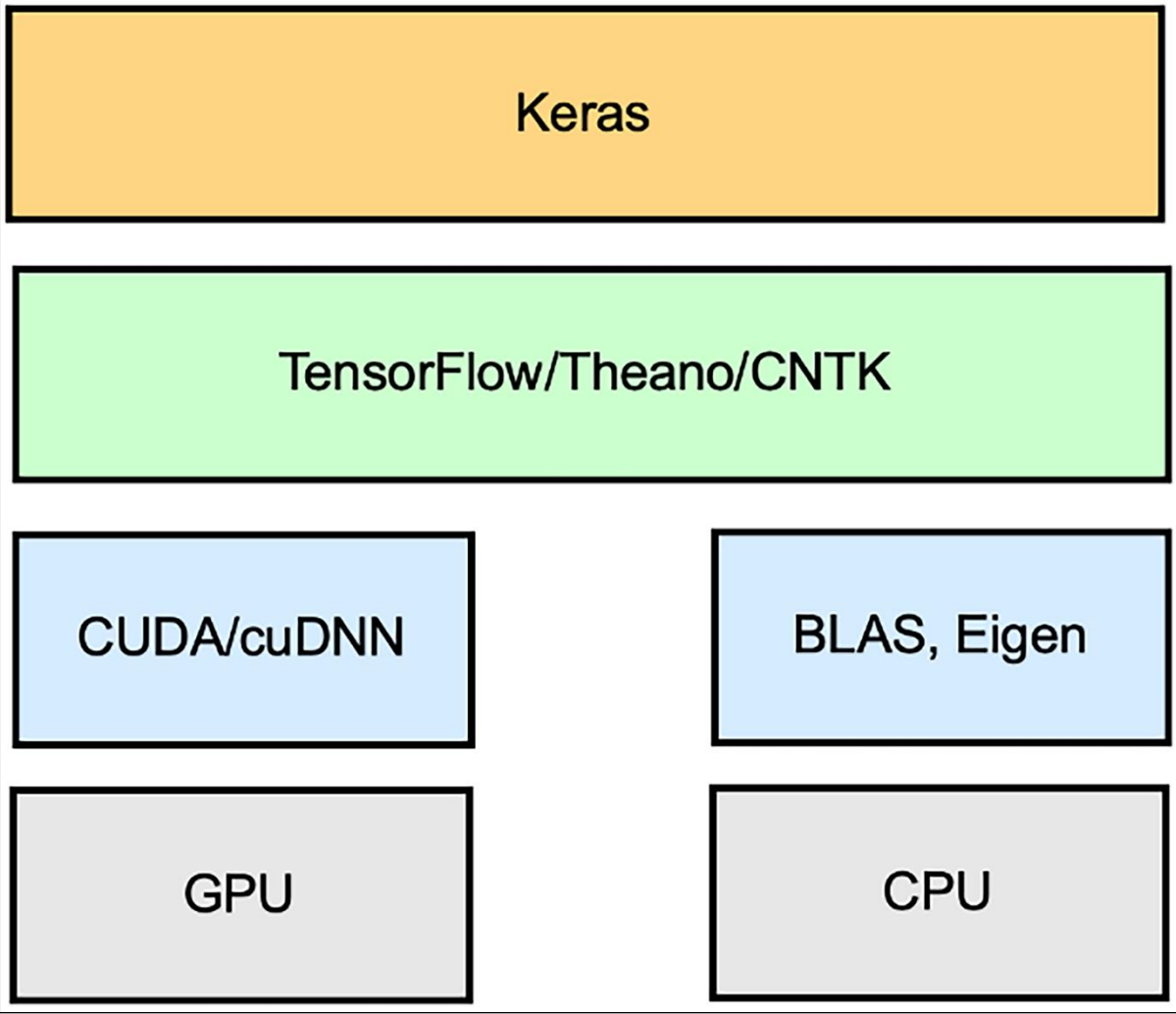


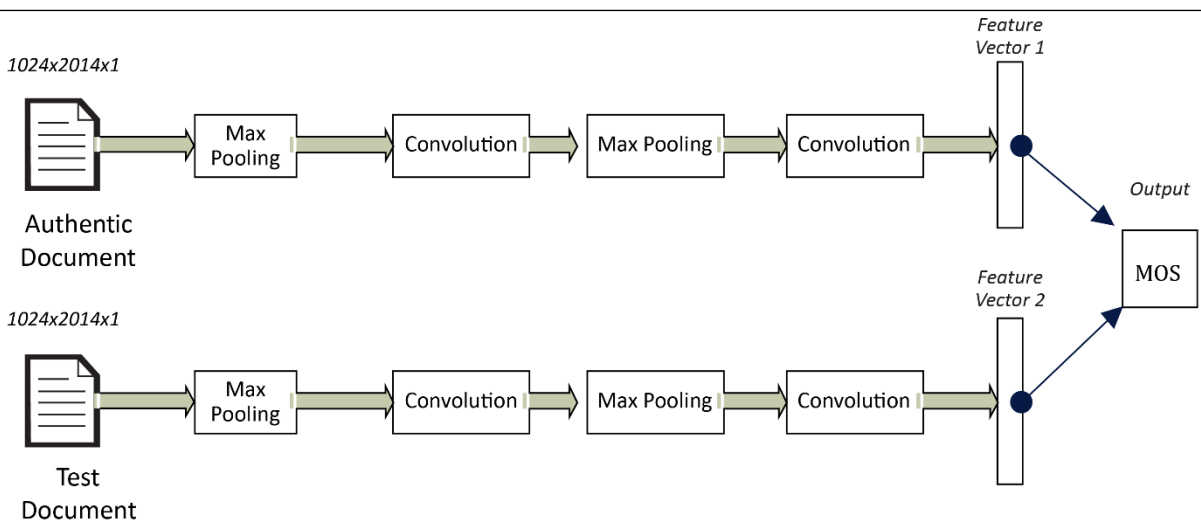
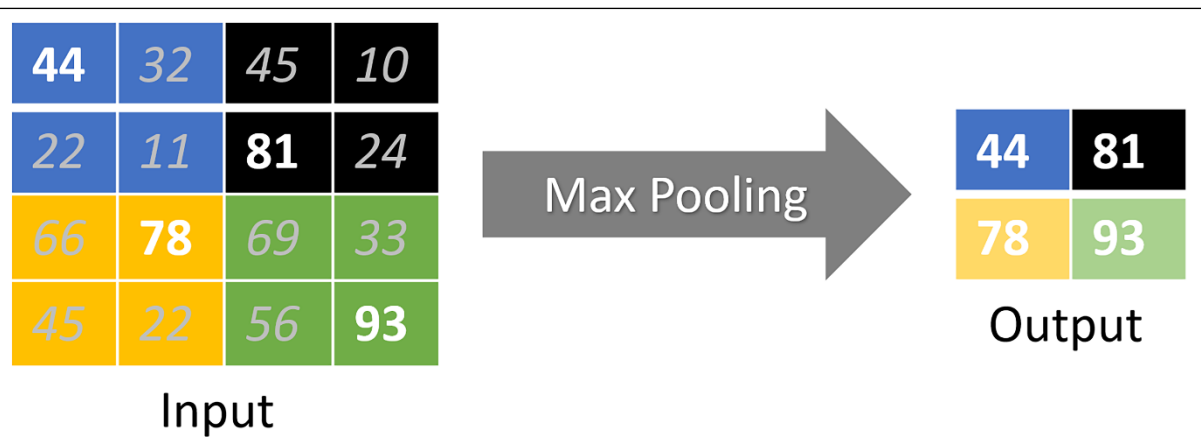
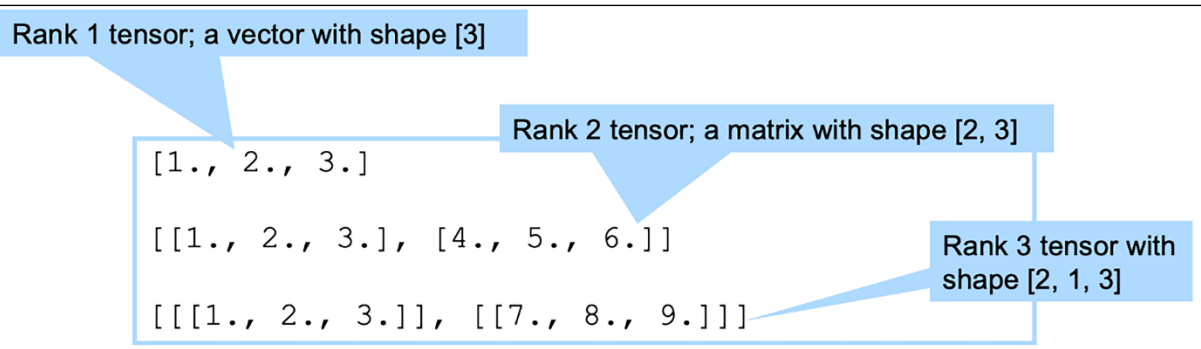




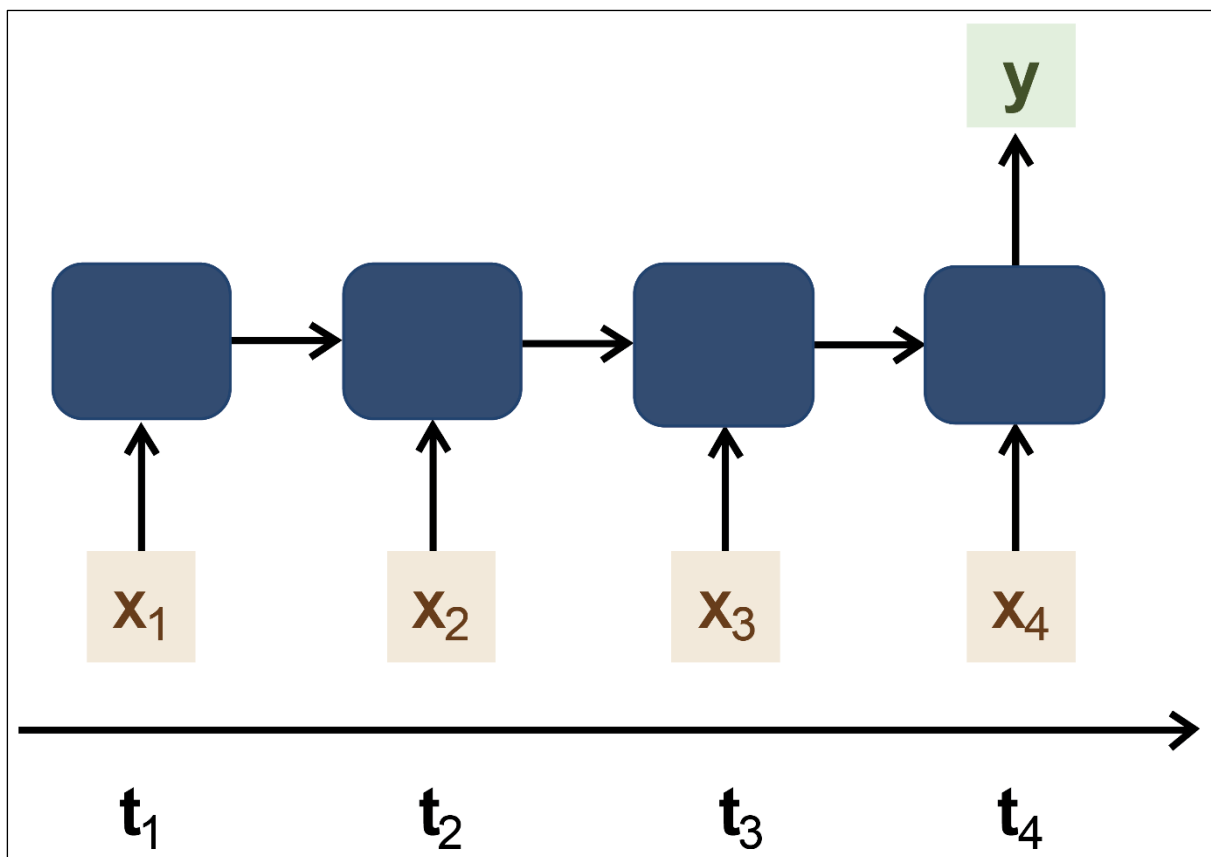
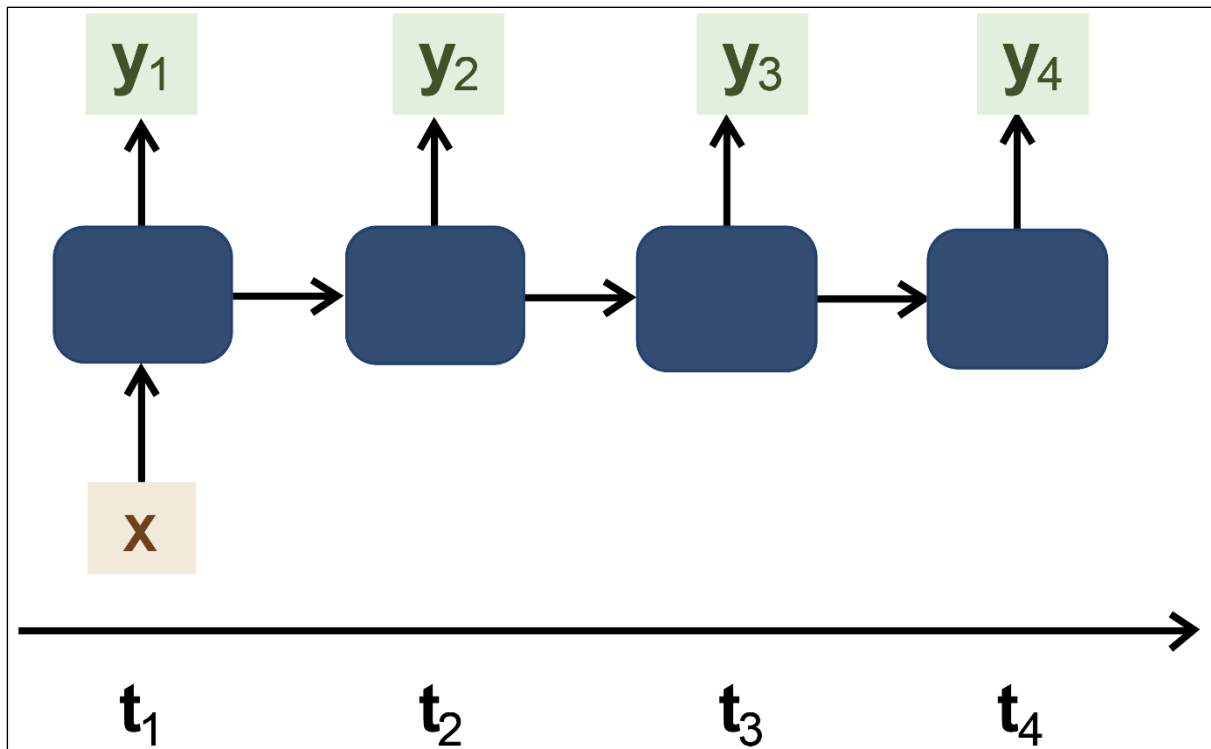


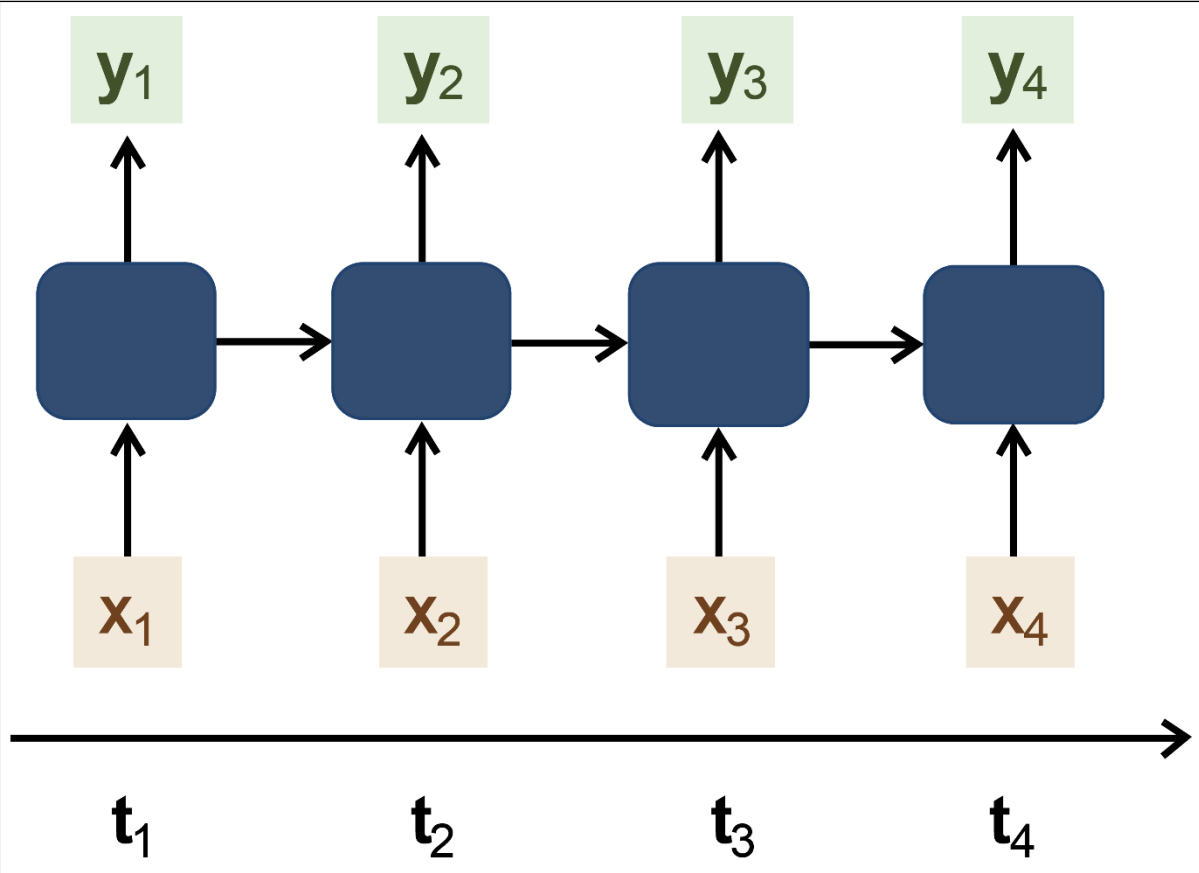


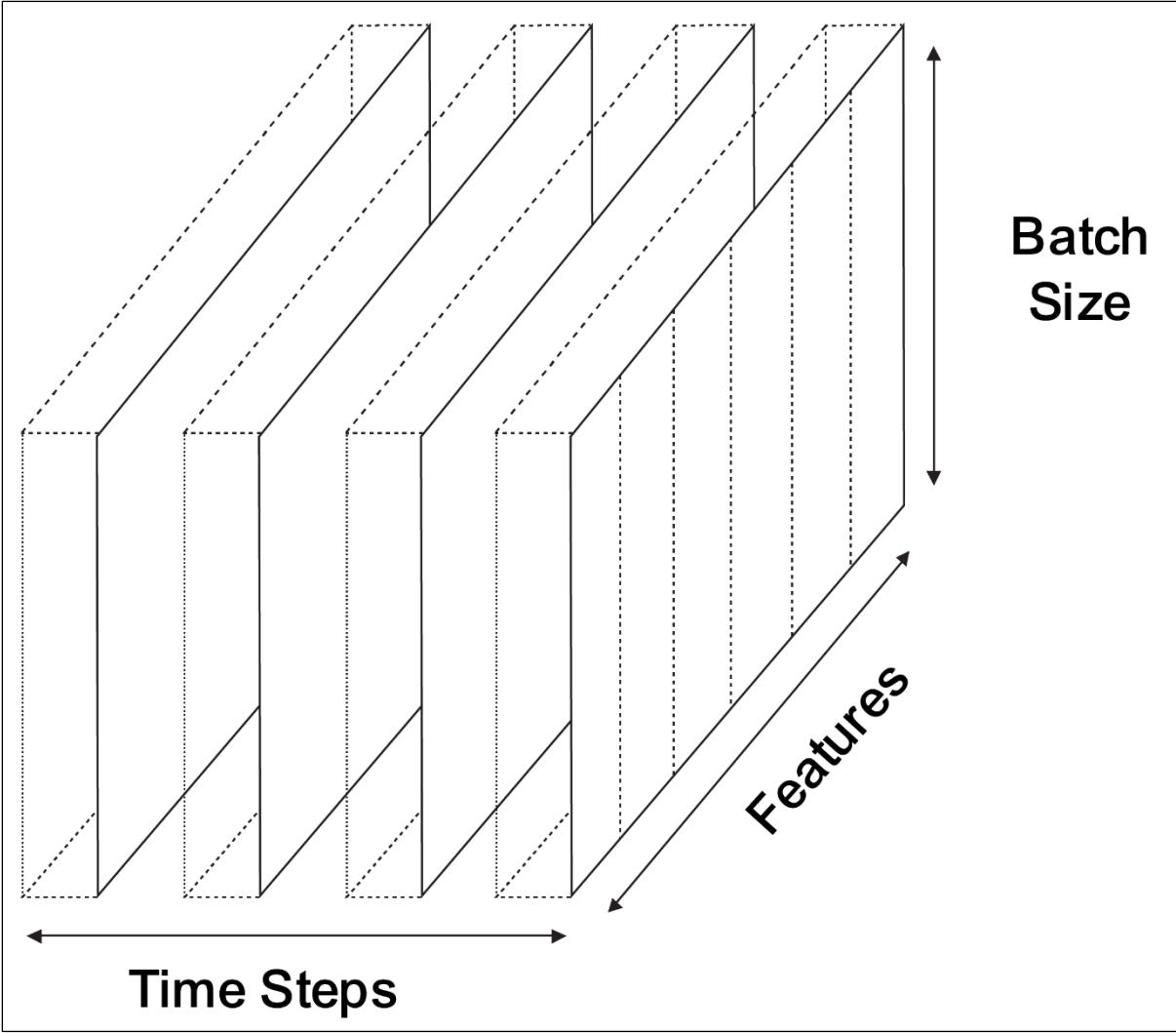


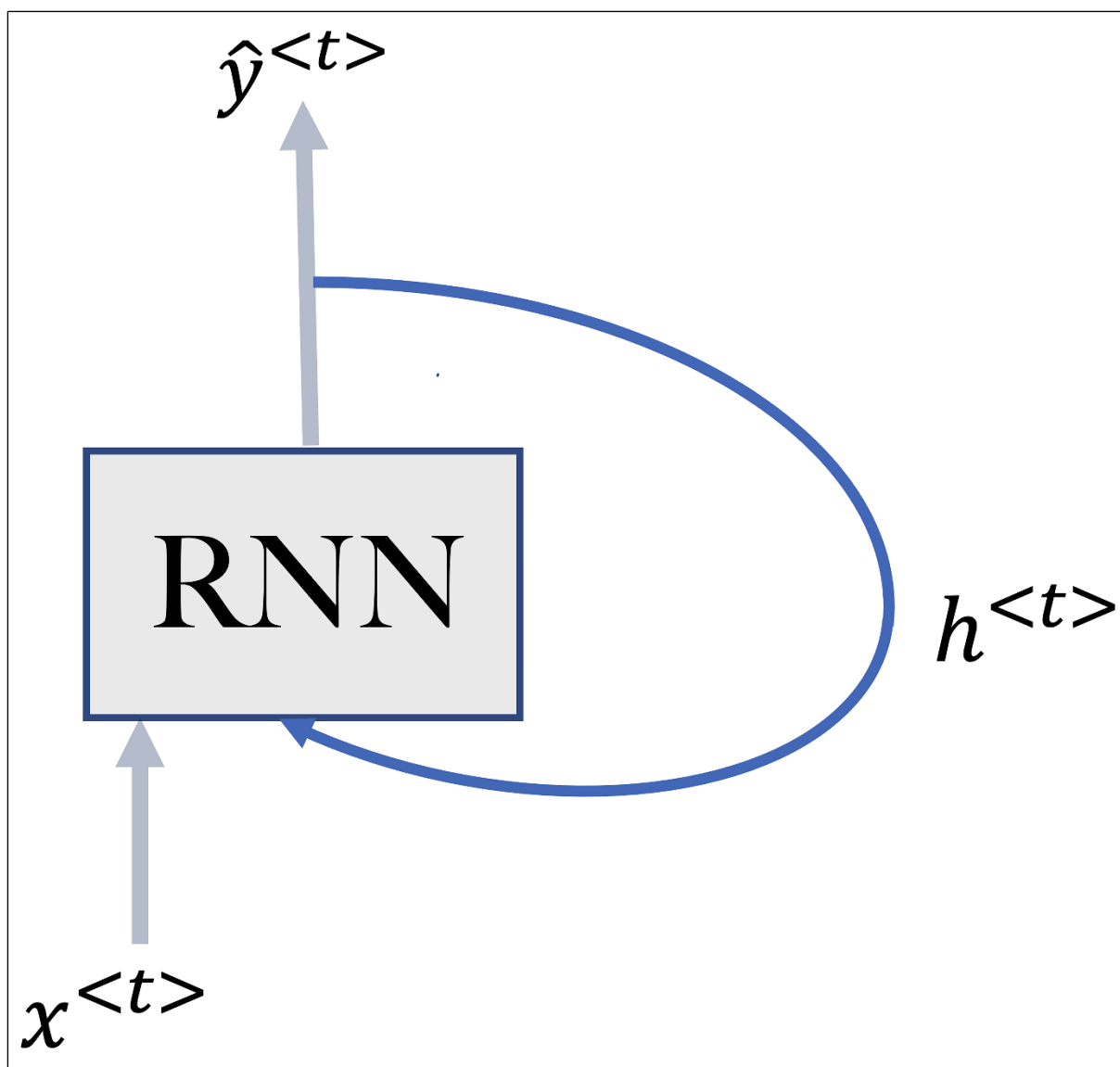


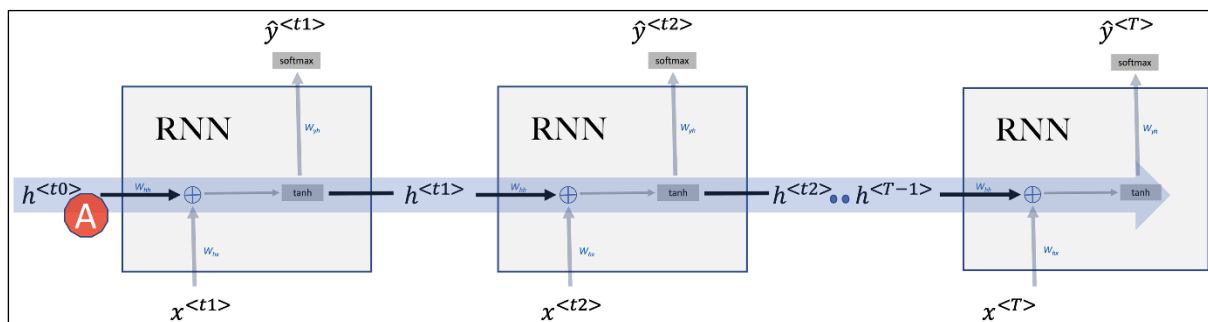
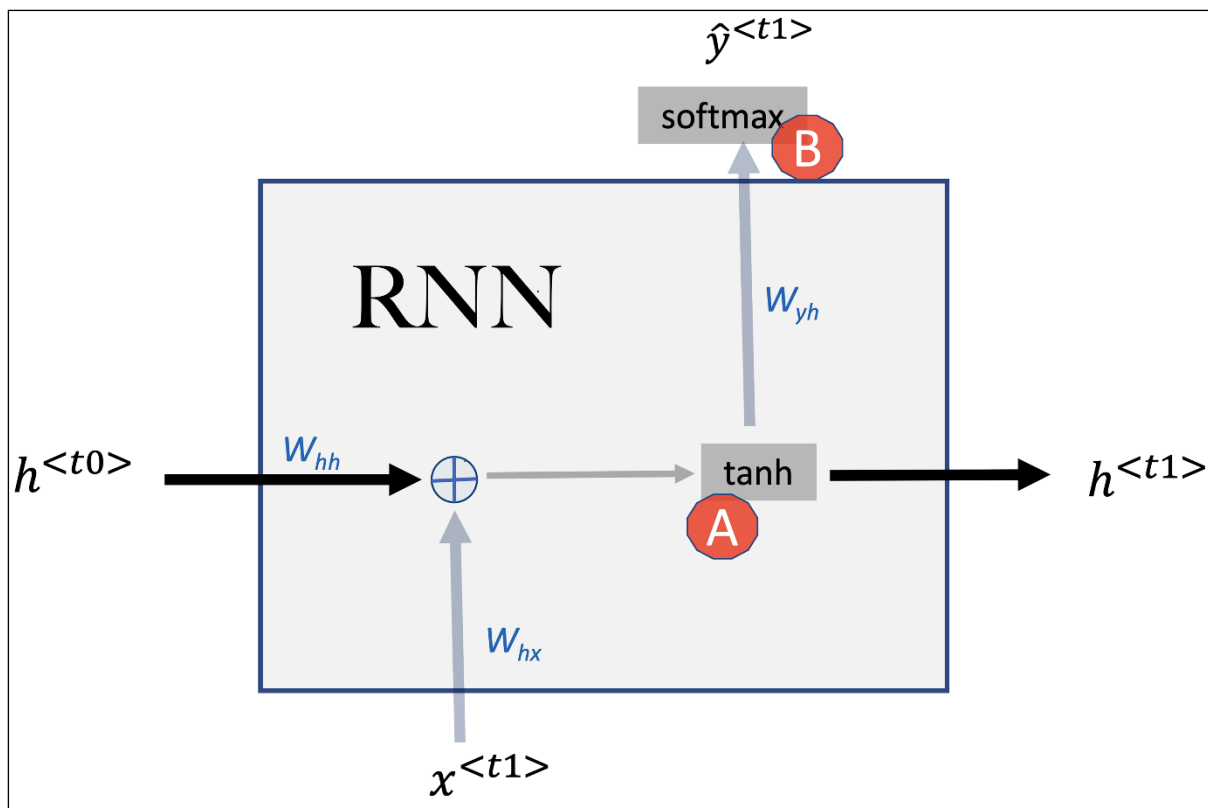
Chapter 10: Understanding Sequential Models







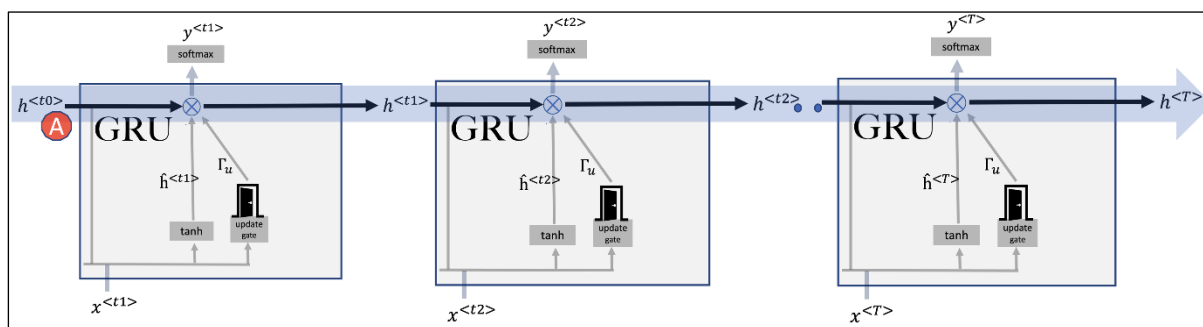
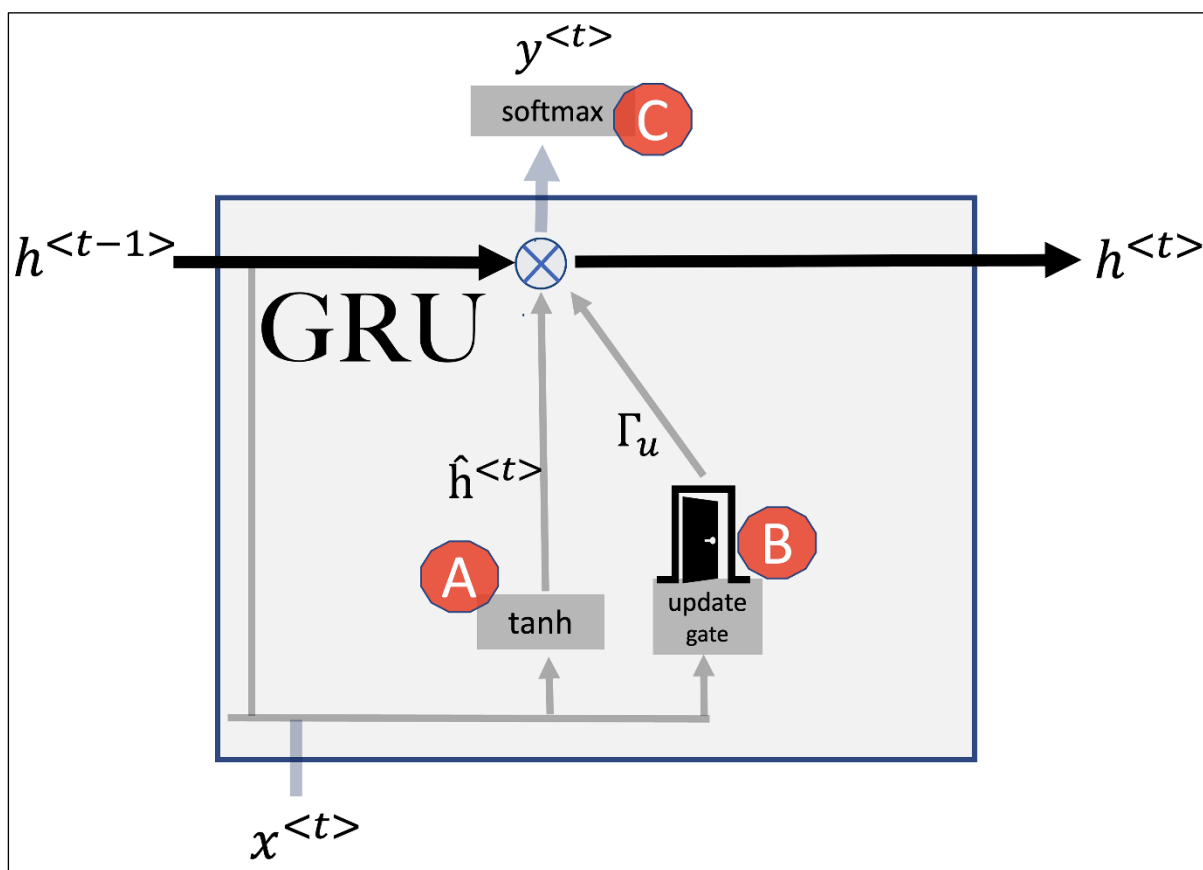


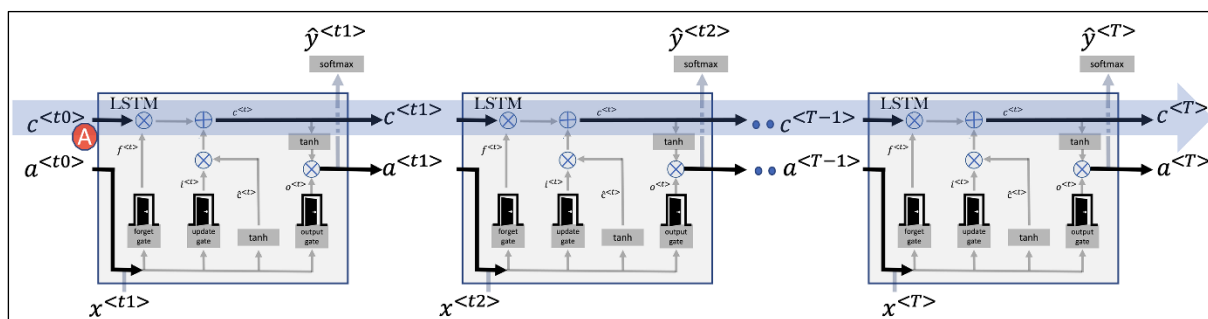
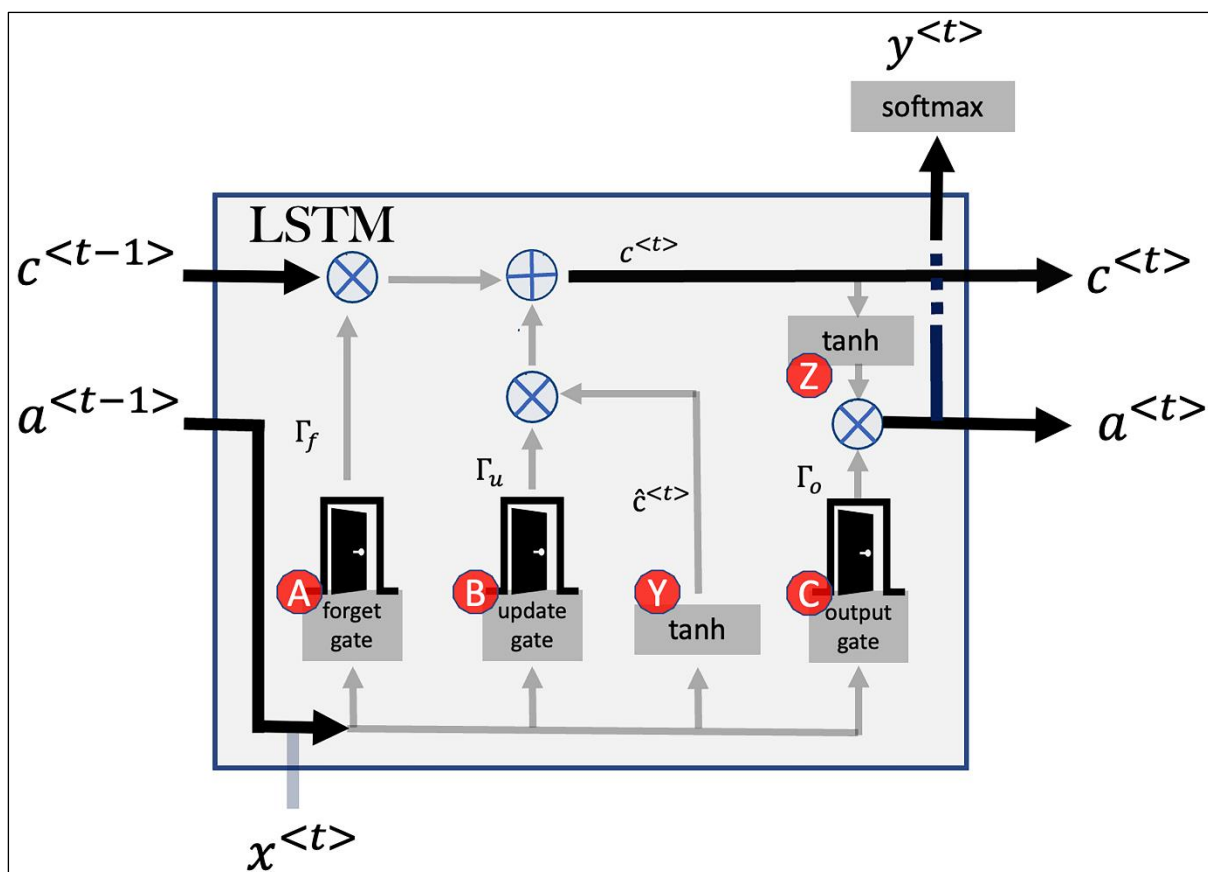


To learn machine learning, **work**

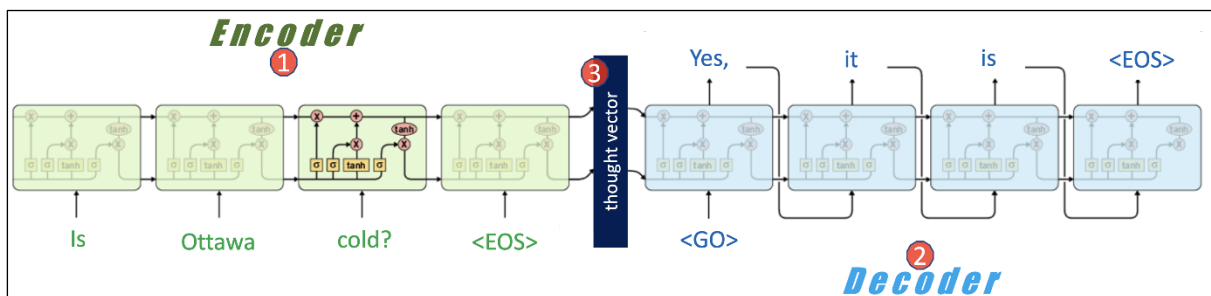
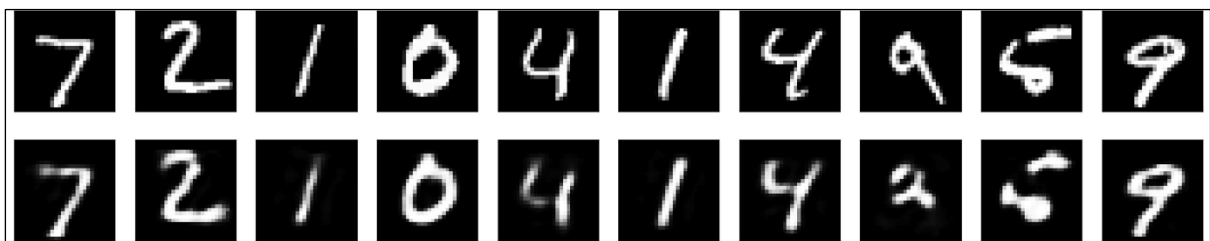
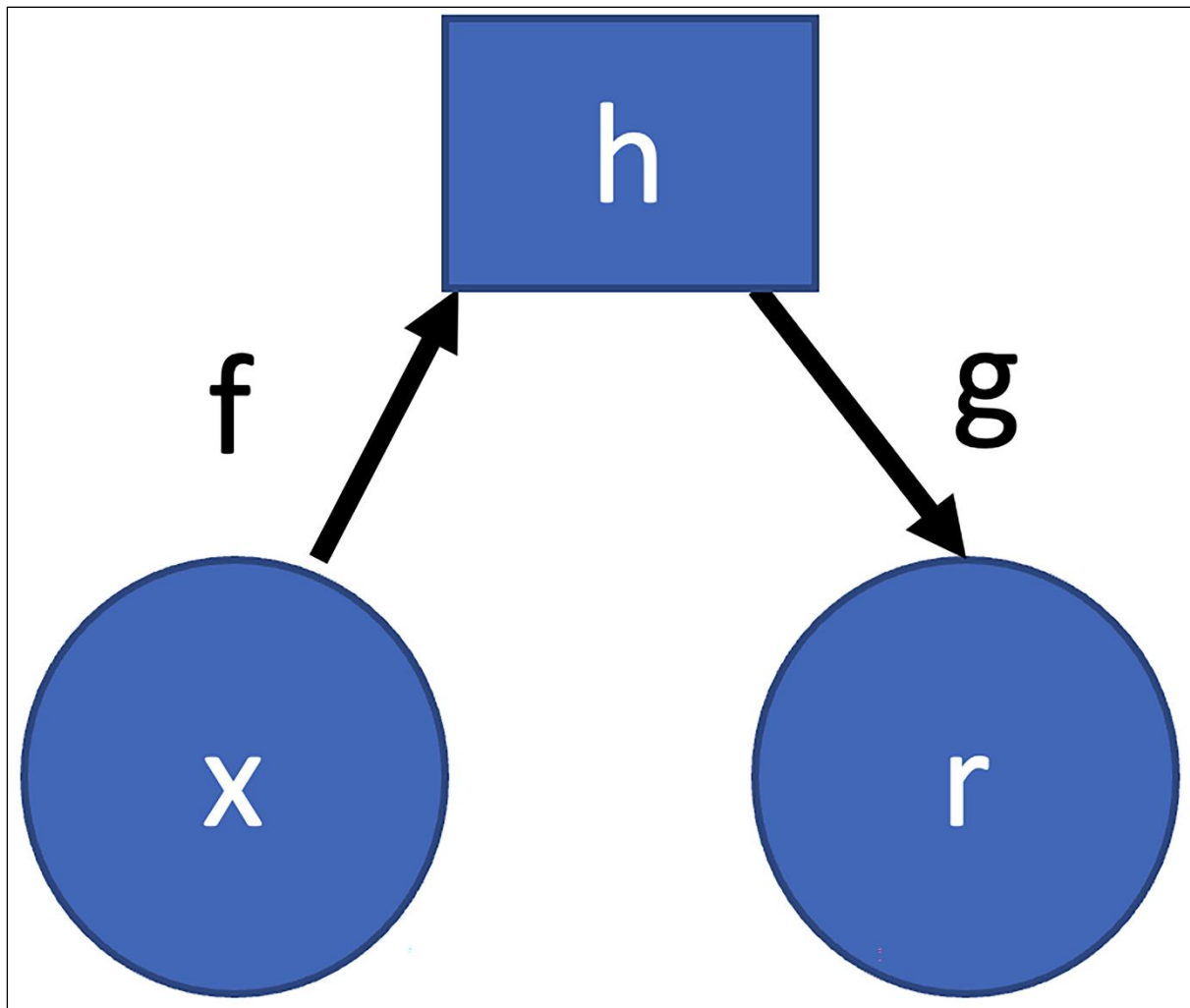
The **man**, who was carrying two cameras, **was** running.

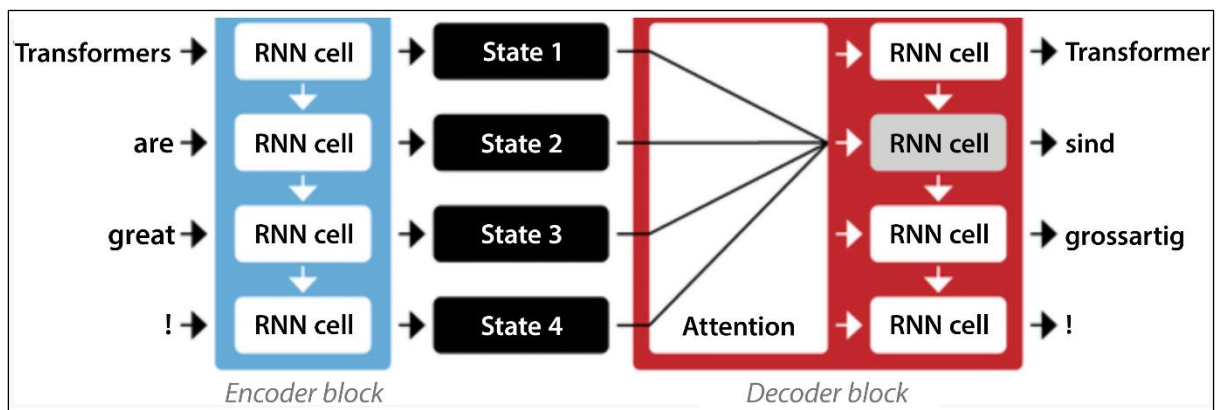
I enjoy **cricket** as it is a great **sport** played throughout the world.
I enjoy **cricket** as being such a small **insect**, its voice resonates in wetlands.

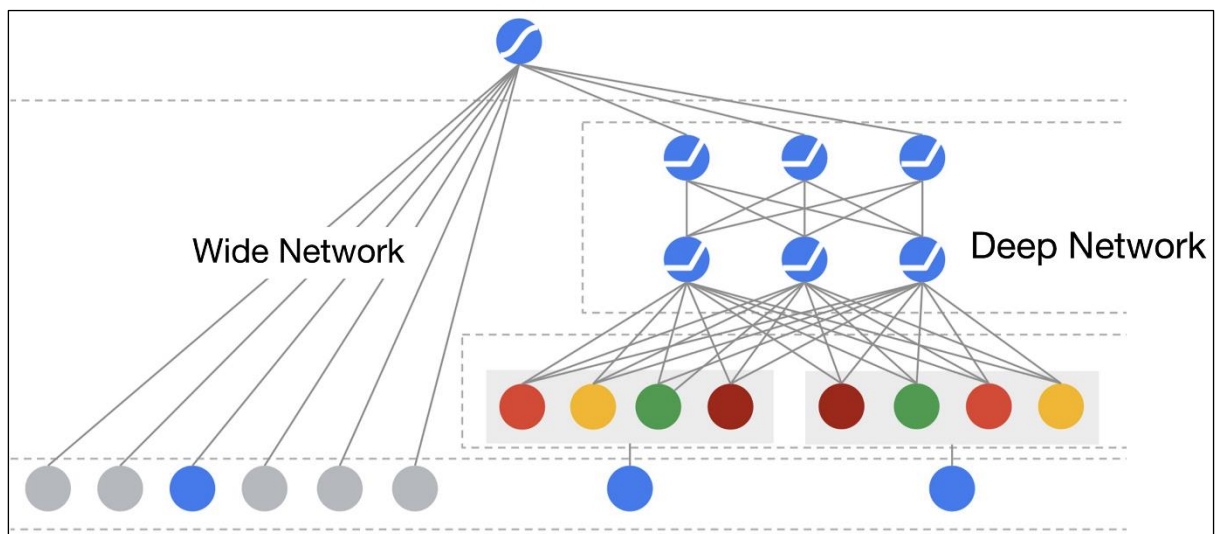
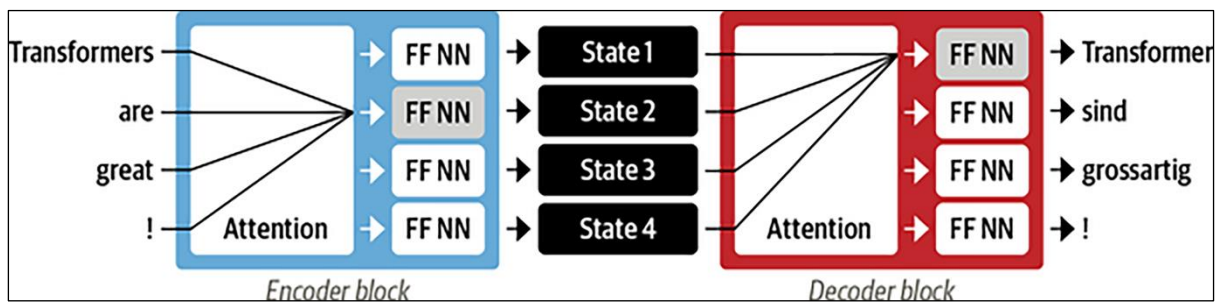
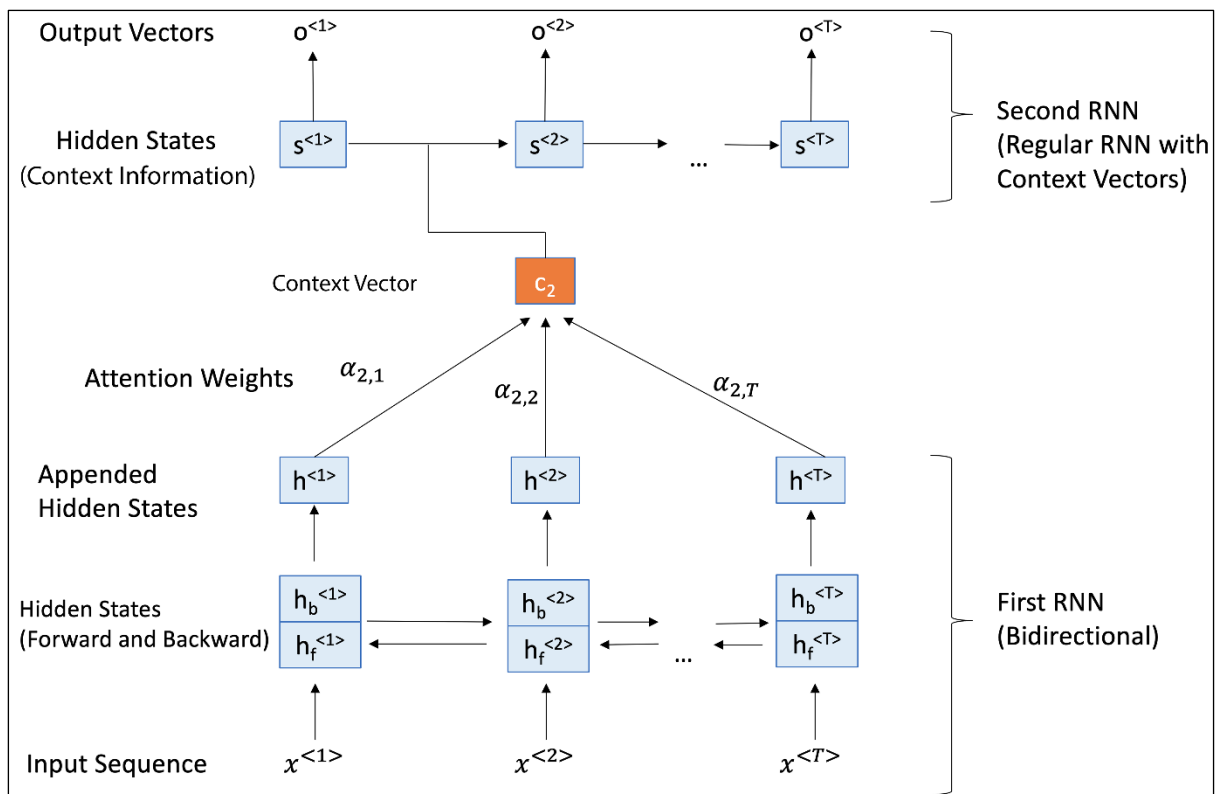




Chapter 11: Advanced Sequential Modeling Algorithms

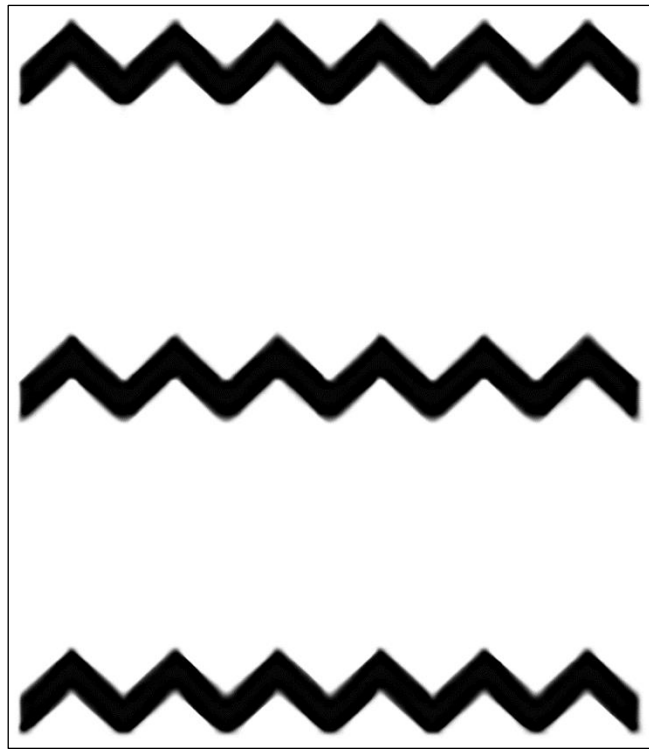




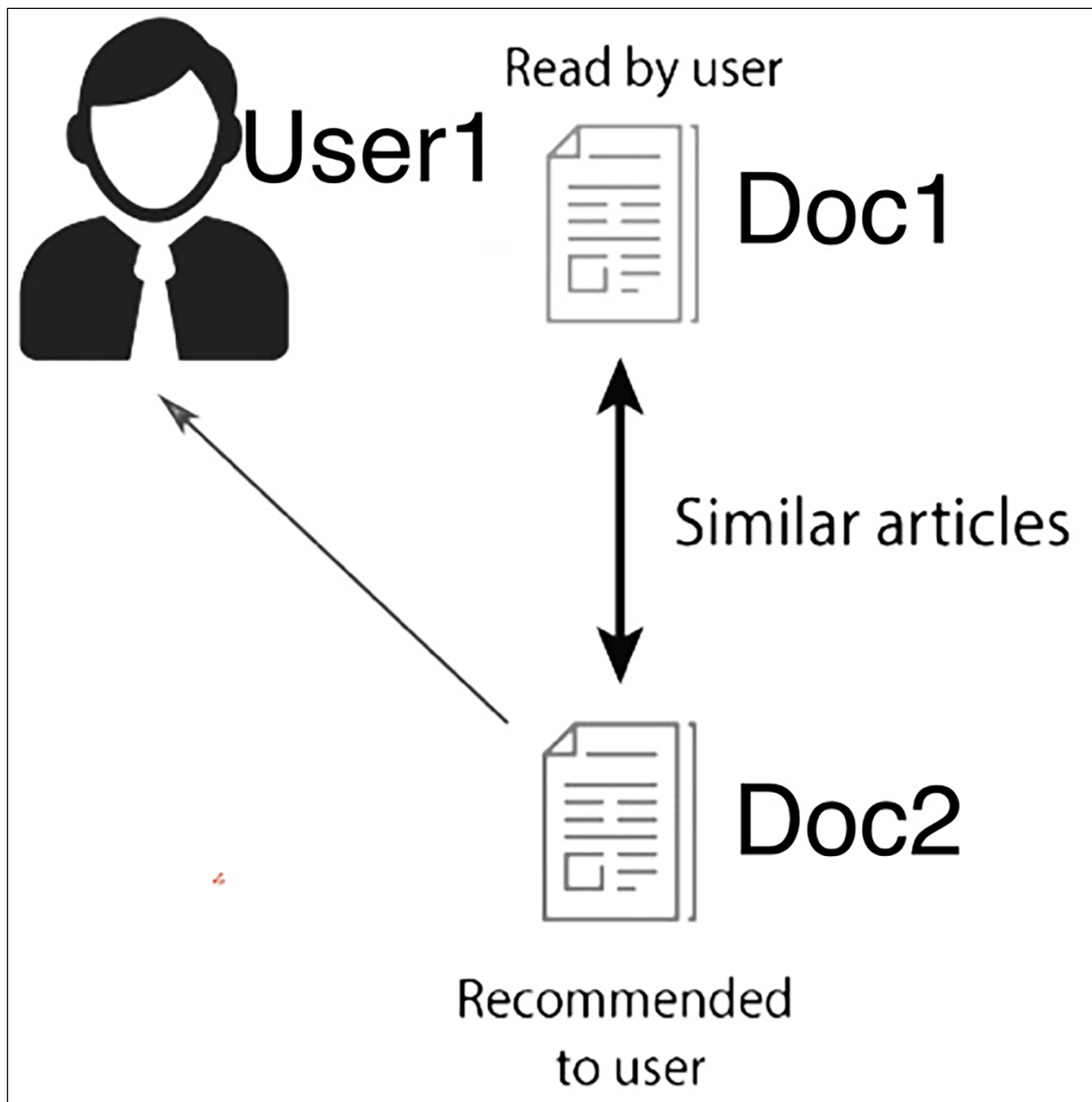


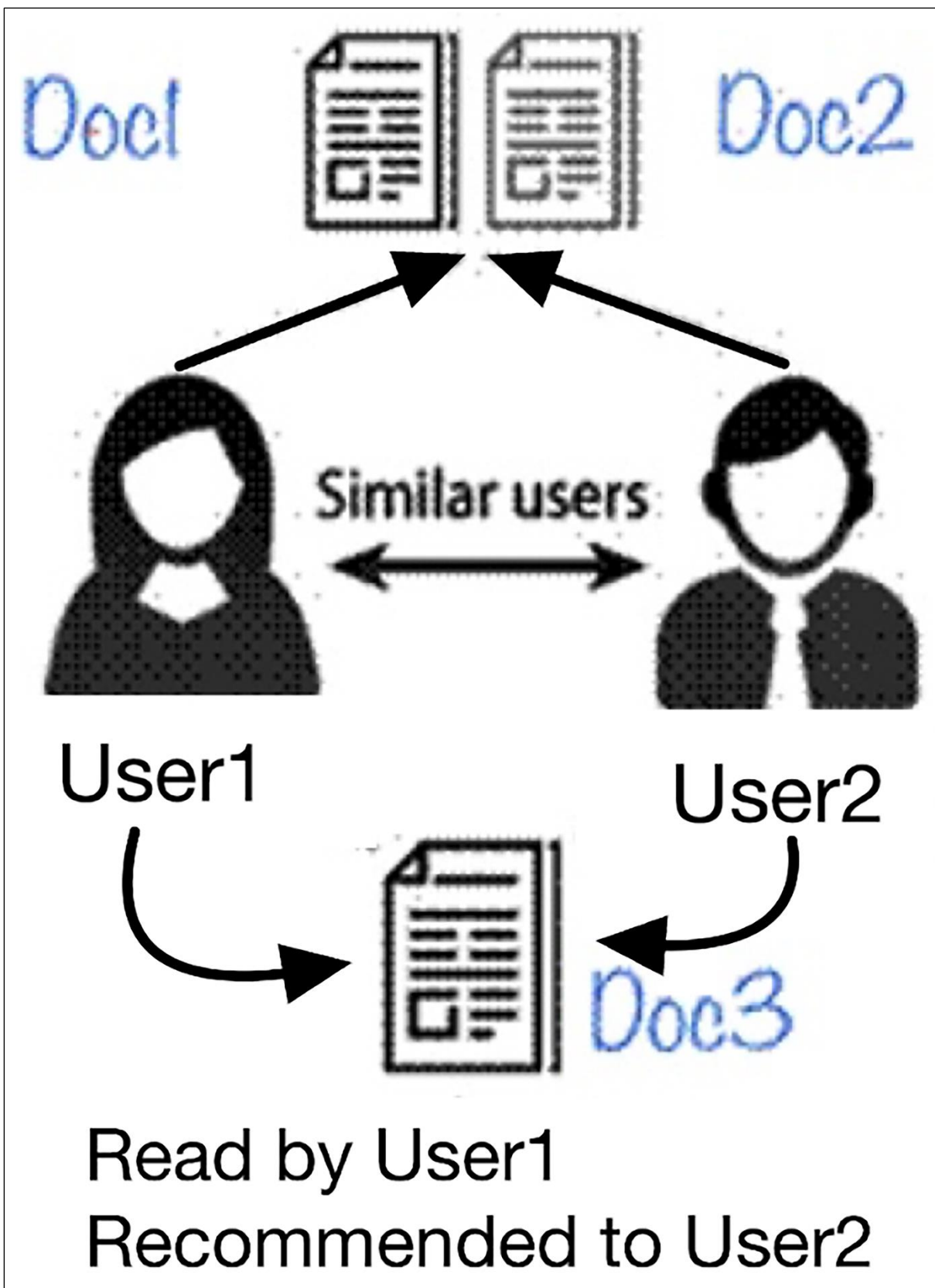






Chapter 12: Recommendation Engines





	Item1	Item2	Item3	Item4	Item5
Item1	10	5	3	2	1
Item2	5	10	6	5	3
Item3	3	6	10	1	5
Item4	2	5	1	10	3
Item5	1	3	5	3	10

Item 1

4

Item 2

0

Item 3

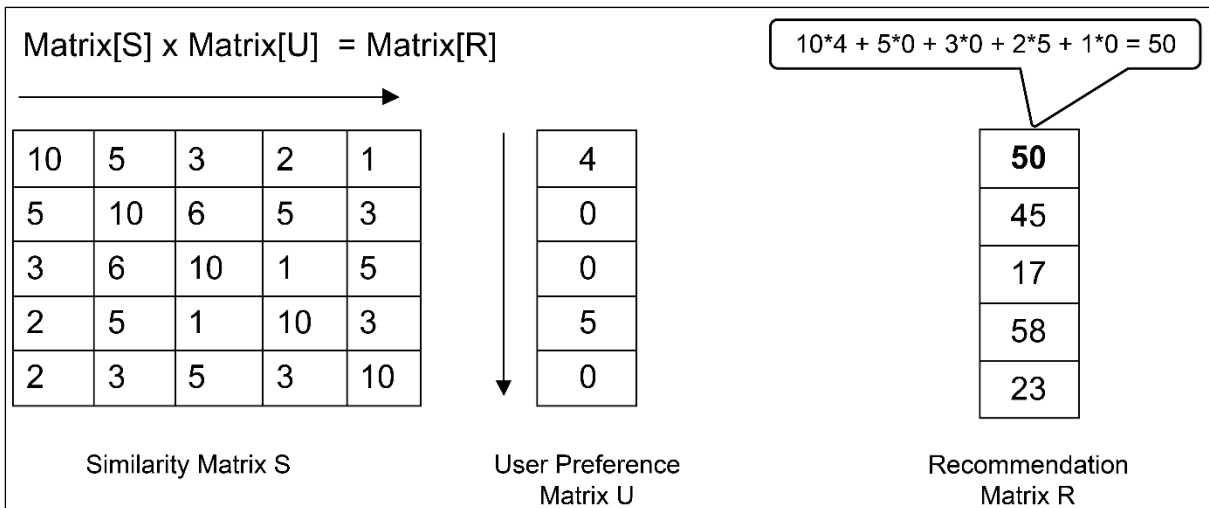
0

Item 4

5

Item 5

0



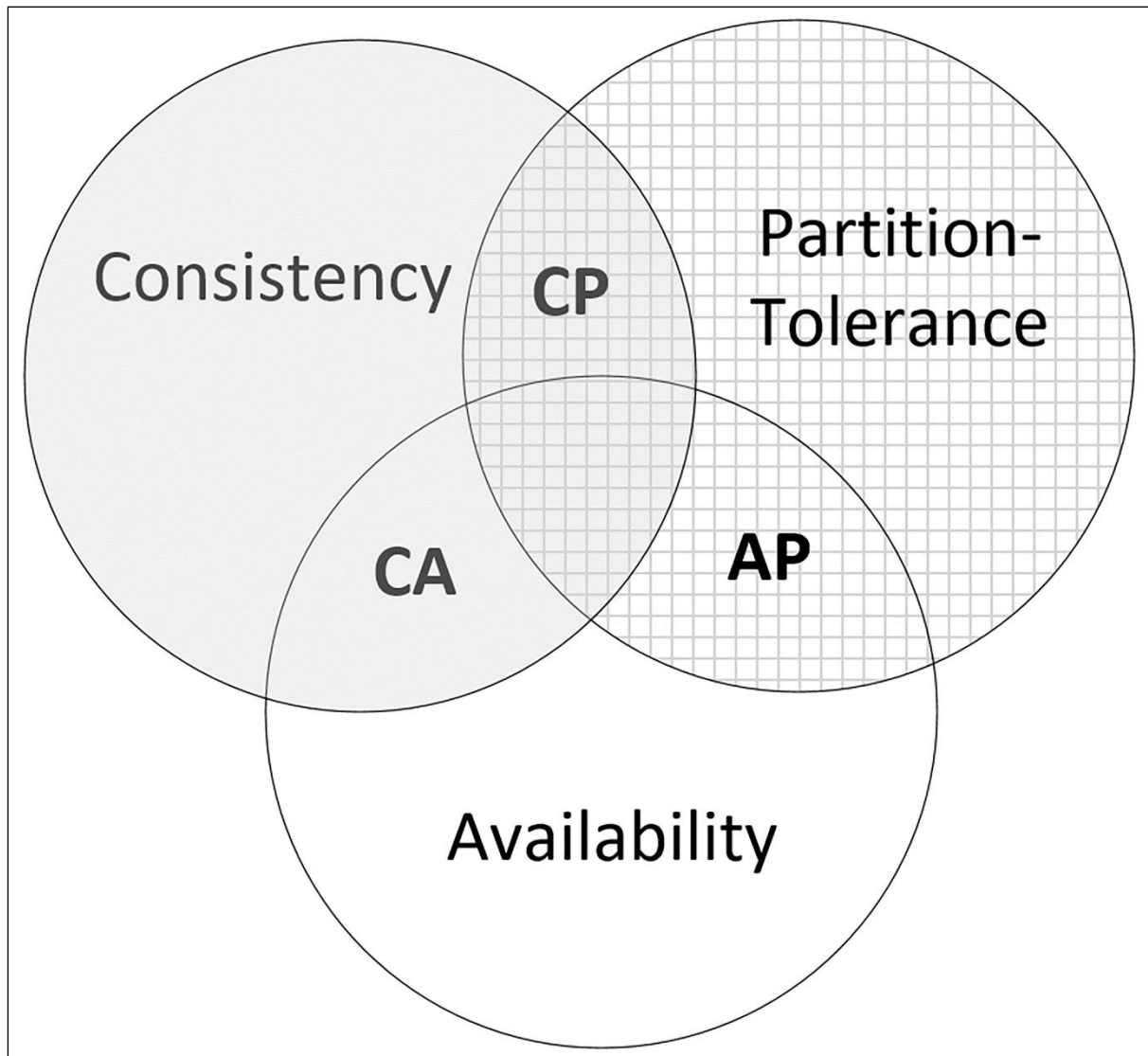
	userId	movieId	rating	timestamp
0	1	1	4.0	964982703
1	1	3	4.0	964981247
2	1	6	4.0	964982224
3	1	47	5.0	964983815
4	1	50	5.0	964982931

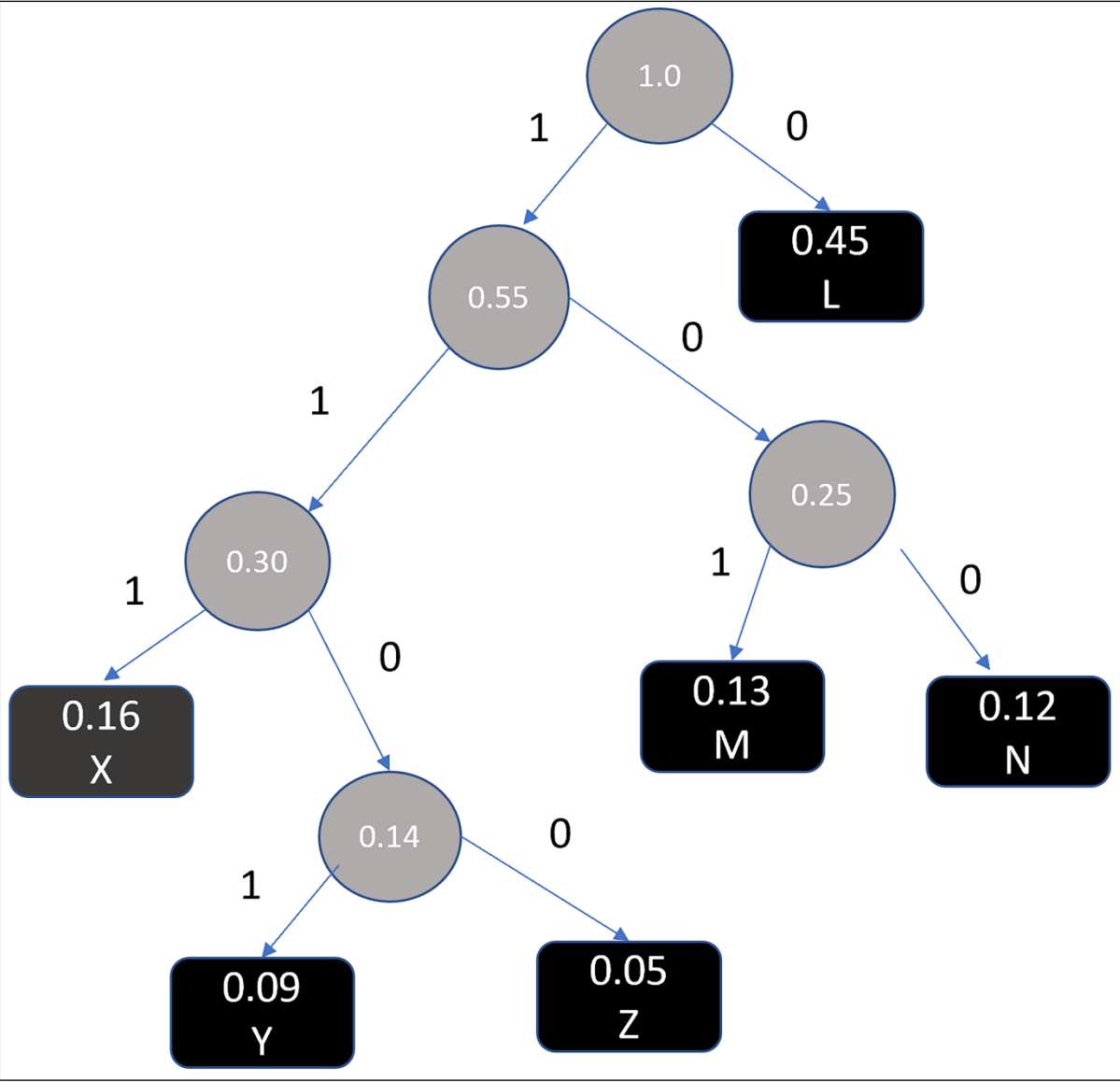
	movieId	title	genres
0	1	Toy Story (1995)	Adventure Animation Children Comedy Fantasy
1	2	Jumanji (1995)	Adventure Children Fantasy
2	3	Grumpier Old Men (1995)	Comedy Romance
3	4	Waiting to Exhale (1995)	Comedy Drama Romance
4	5	Father of the Bride Part II (1995)	Comedy

	userId	movieId	rating	timestamp	title	genres
0	1	1	4.0	964982703	Toy Story (1995)	Adventure Animation Children Comedy Fantasy
1	5	1	4.0	847434962	Toy Story (1995)	Adventure Animation Children Comedy Fantasy
2	7	1	4.5	1106635946	Toy Story (1995)	Adventure Animation Children Comedy Fantasy
3	15	1	2.5	1510577970	Toy Story (1995)	Adventure Animation Children Comedy Fantasy
4	17	1	4.5	1305696483	Toy Story (1995)	Adventure Animation Children Comedy Fantasy

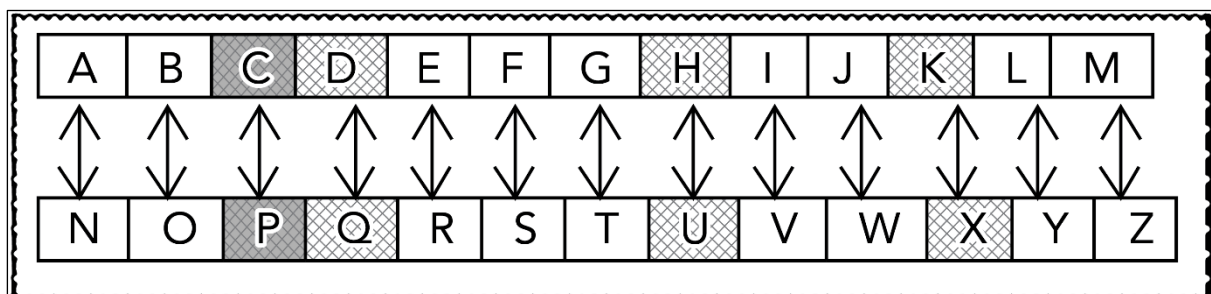
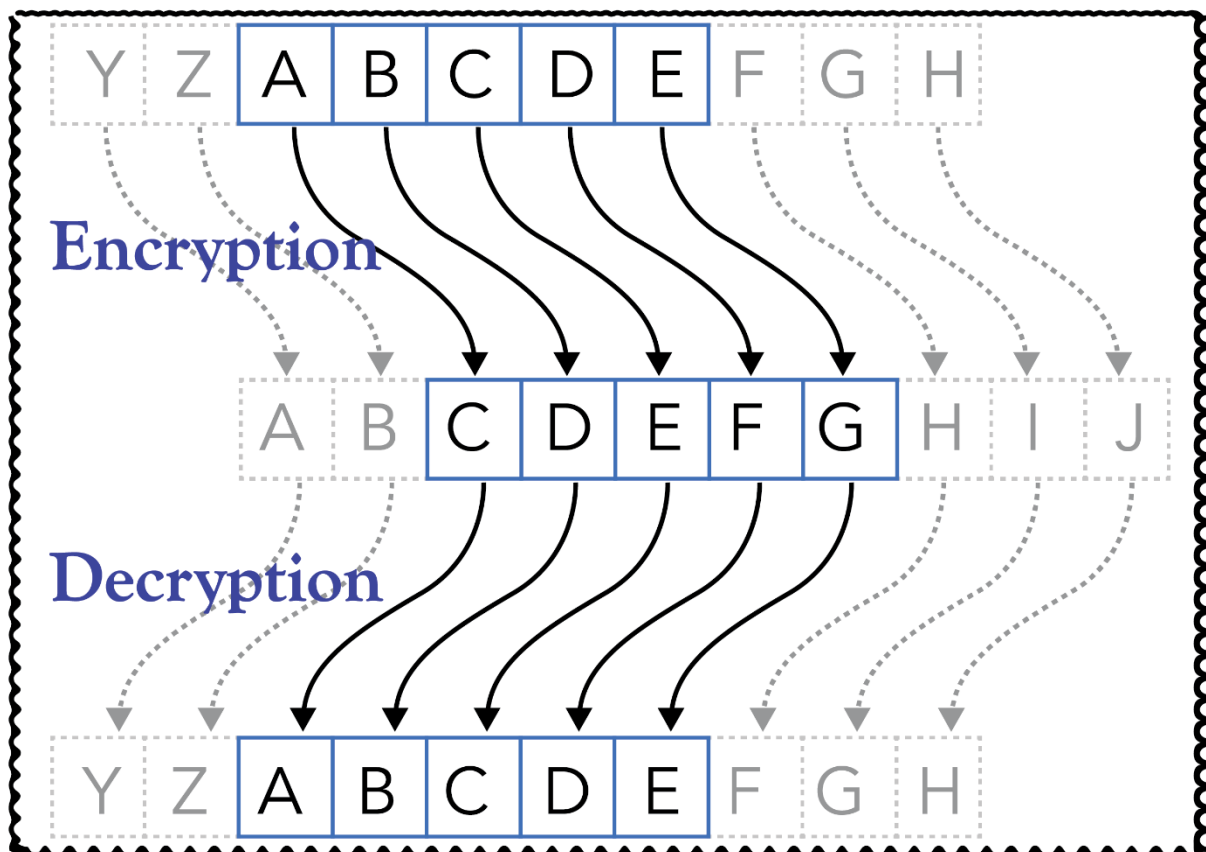
	rating	number of ratings
title		
71 (2014)	4.0	1
Hellboy : The Seeds of Creation (2004)	4.0	1
Round Midnight (1986)	3.5	2
Salem's Lot (2004)	5.0	1
Til There Was You (1997)	4.0	2

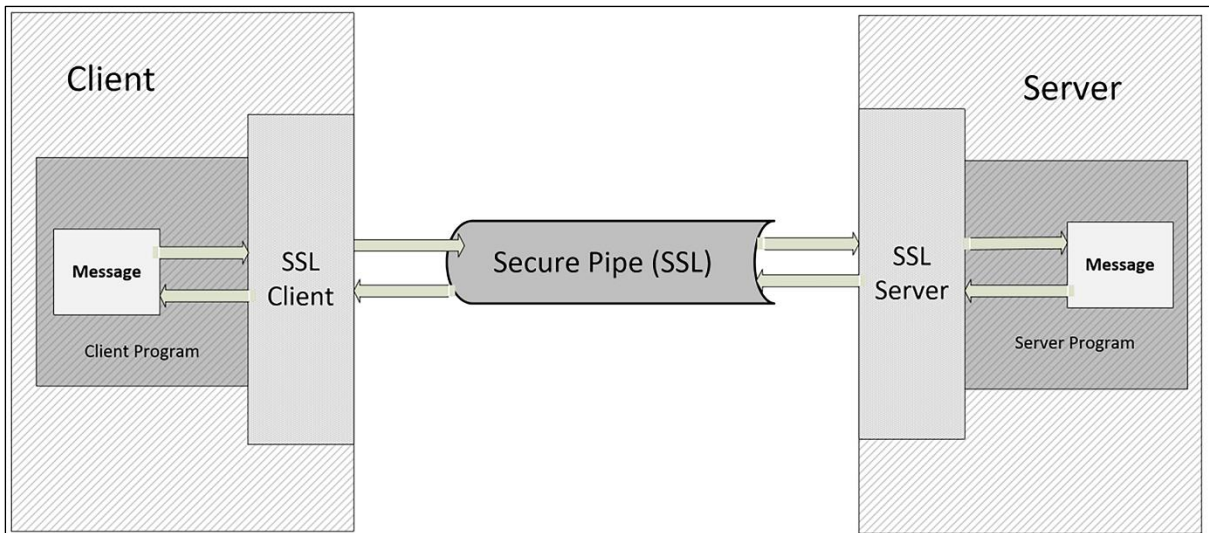
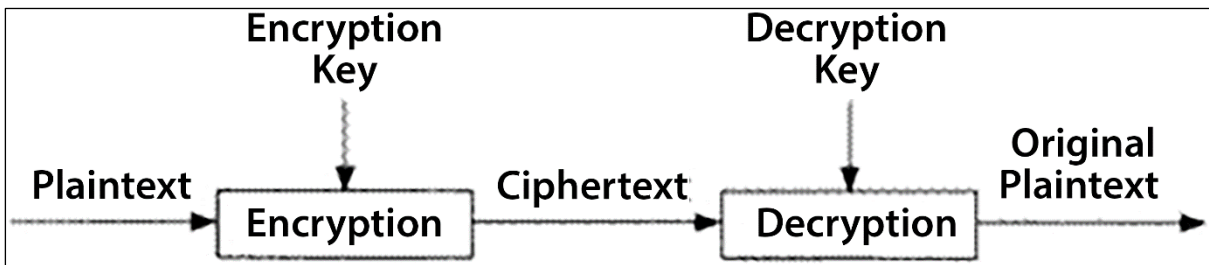
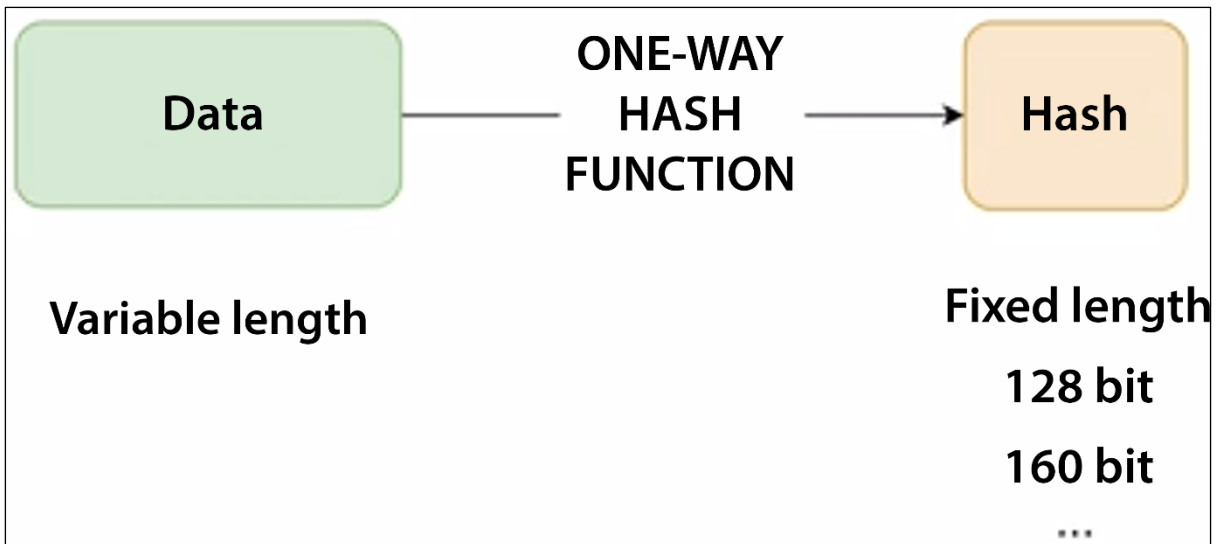
Chapter 13: Algorithmic Strategies for Data Handling

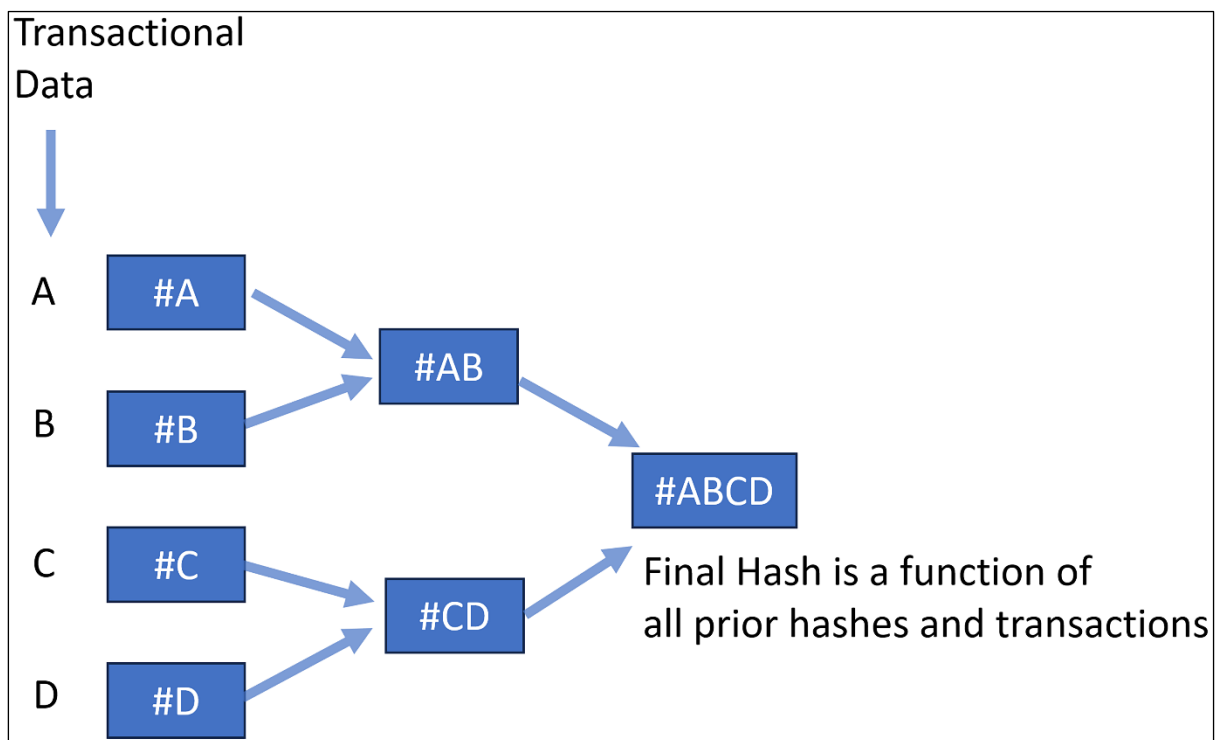
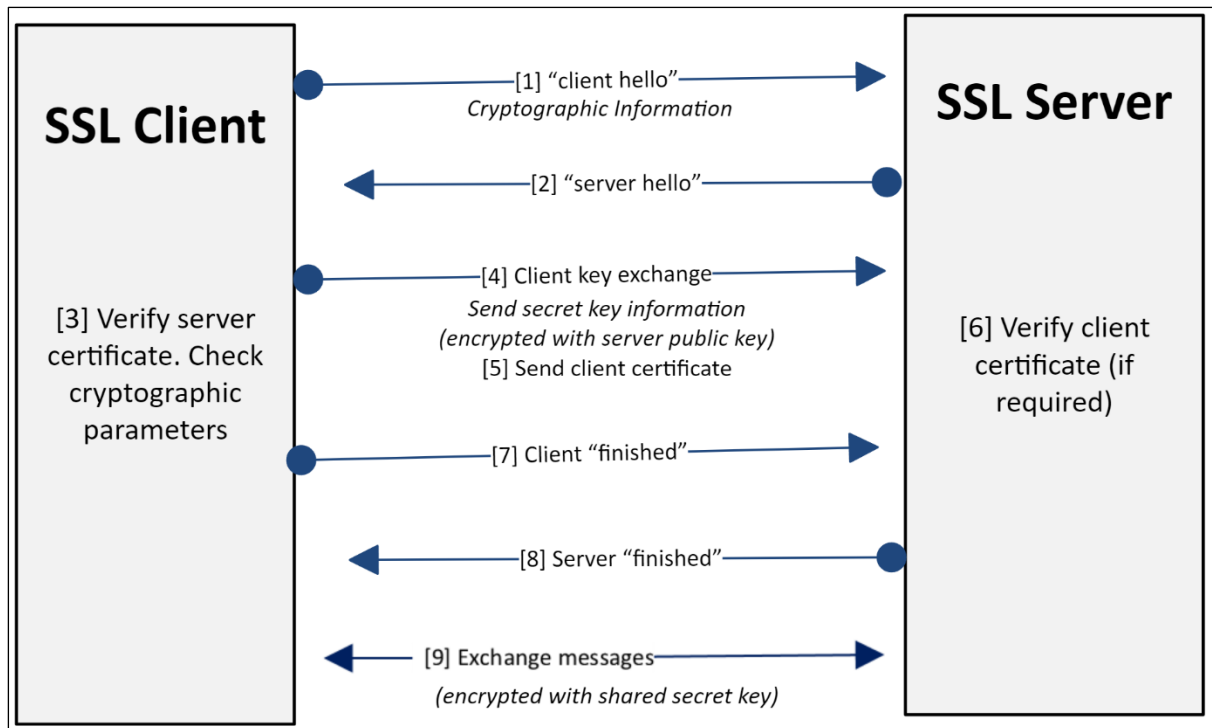


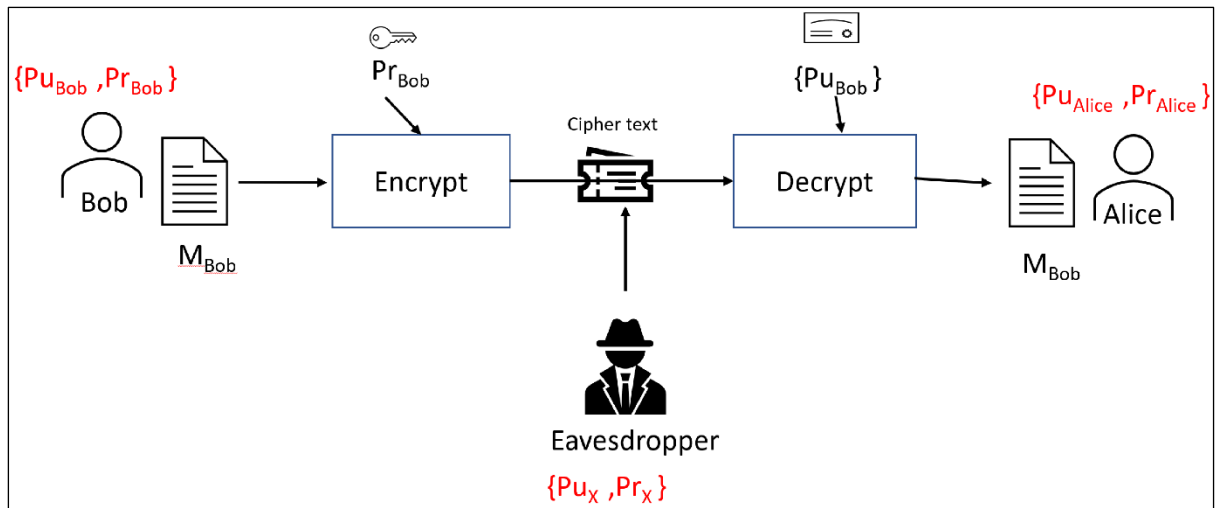


Chapter 14: Cryptography

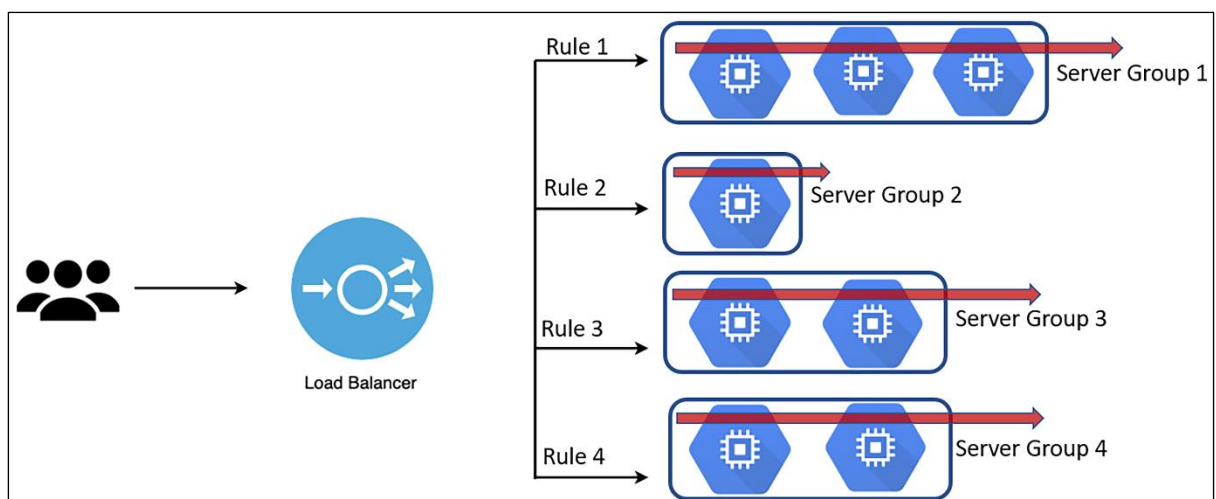
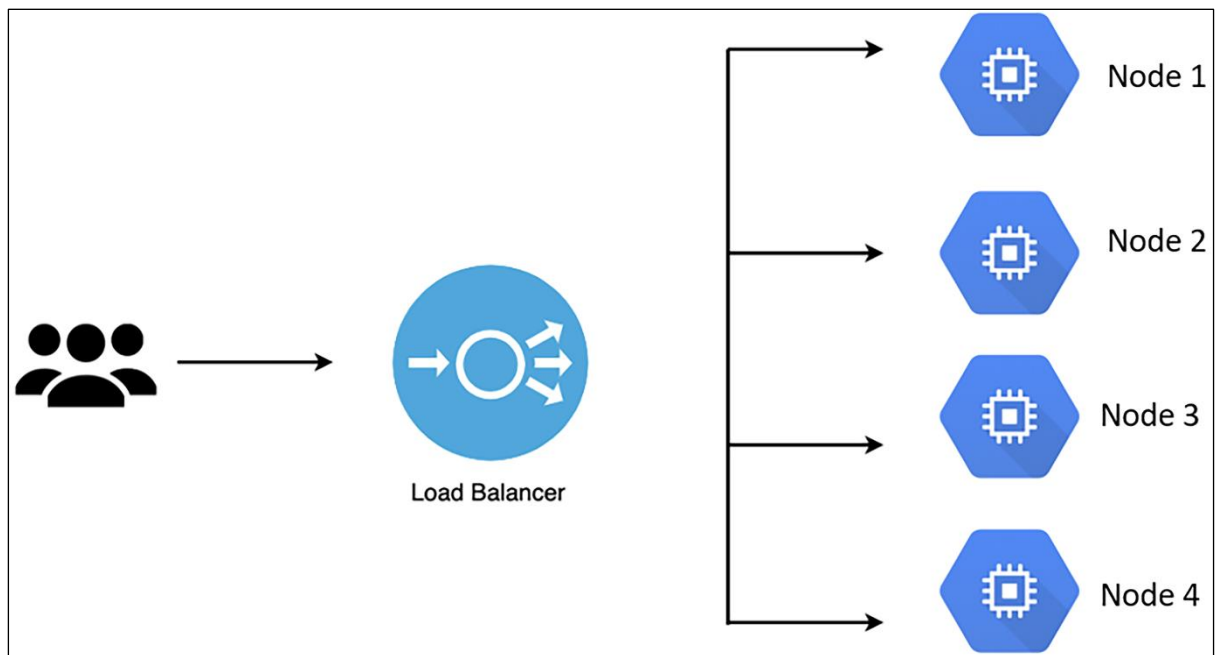


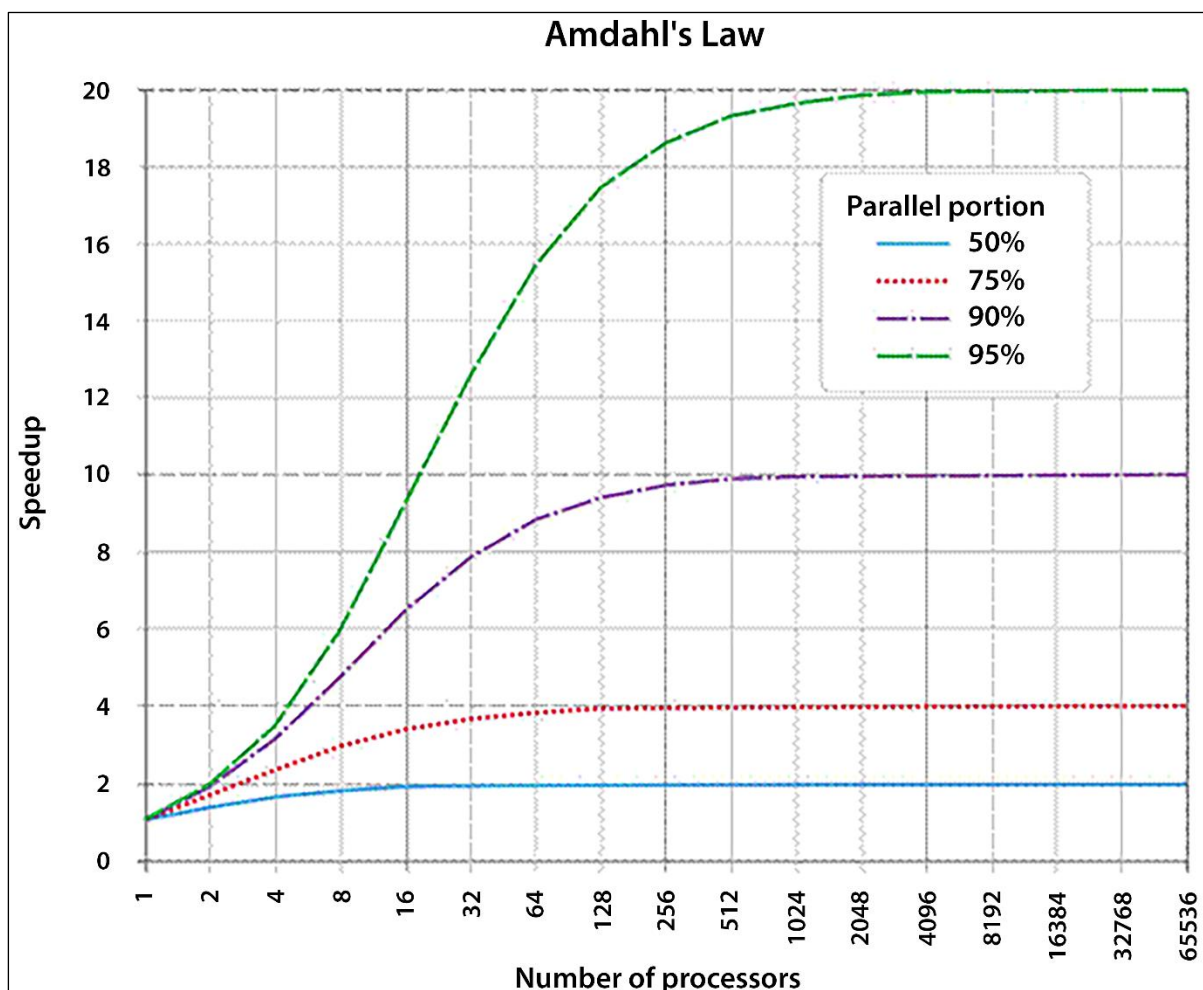
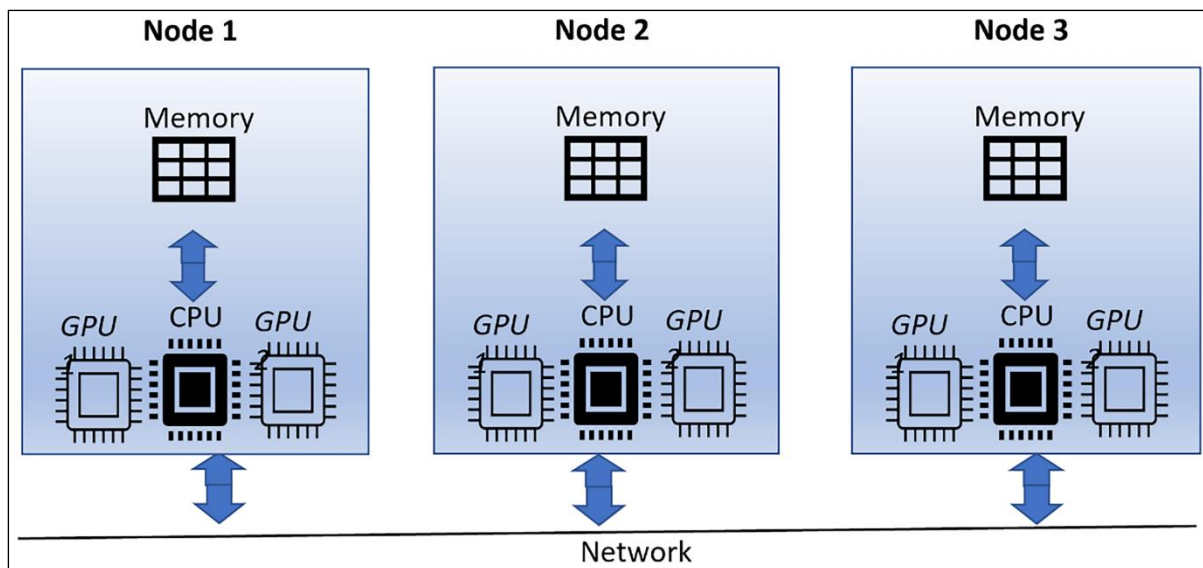


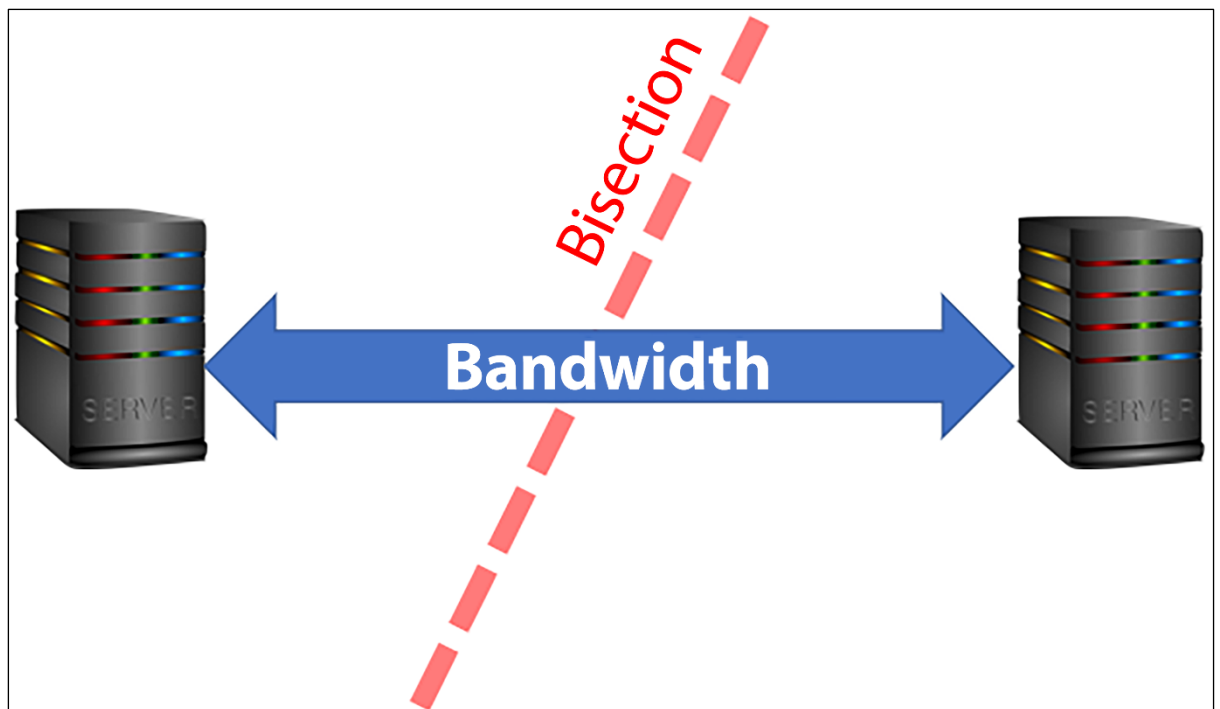
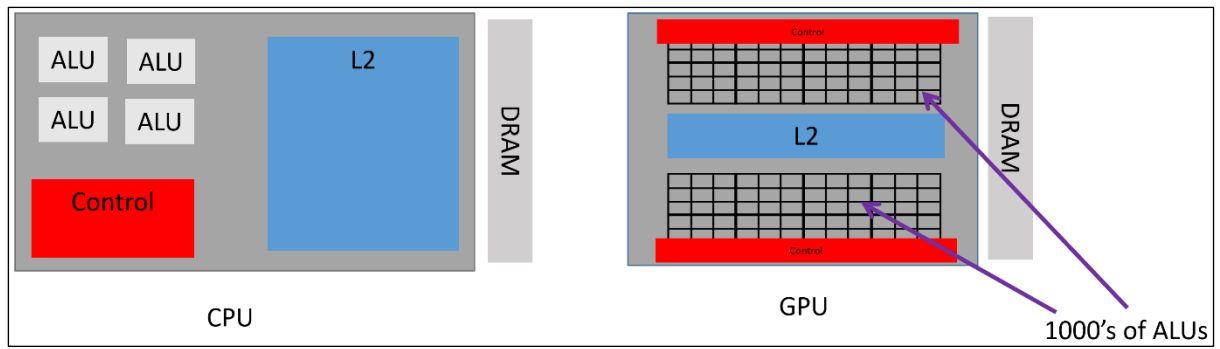


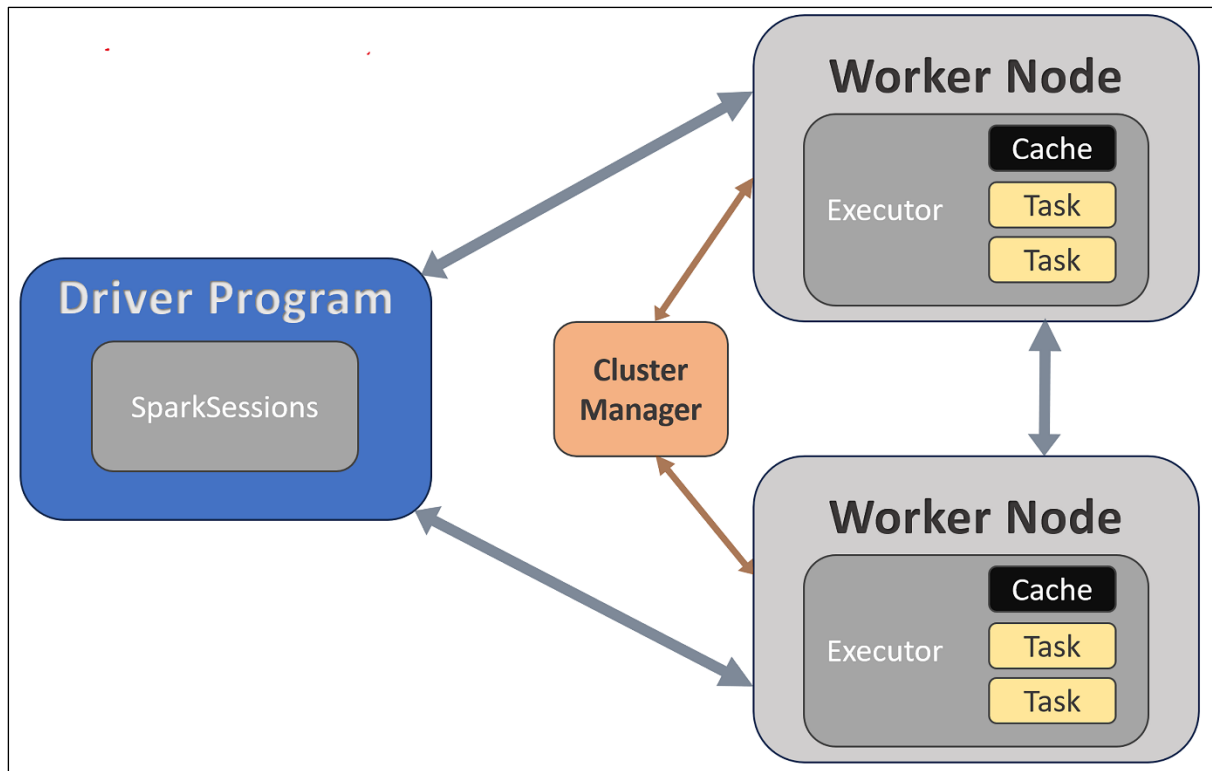


Chapter 15: Large-Scale Algorithms









Chapter 16: Practical Considerations

