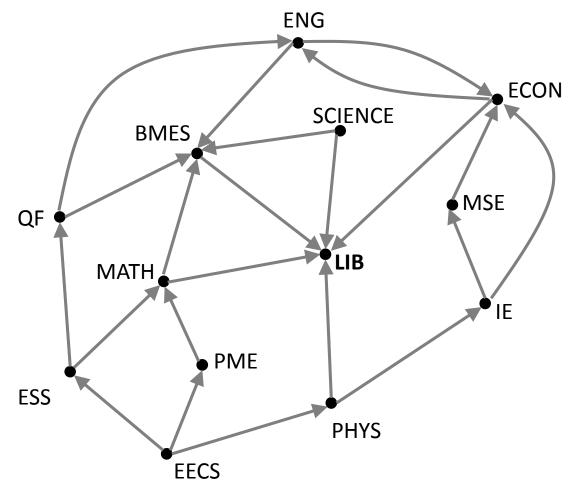
10520EE241000 Data Structure Quiz, 2017.06.03

	S/N	Student ID	Name
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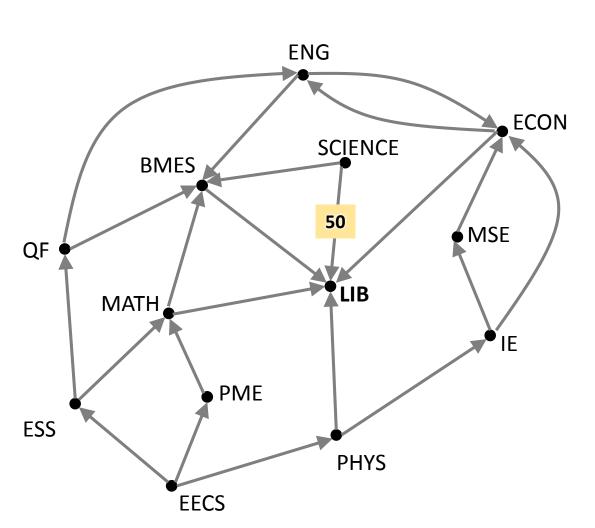
The following graph shows the network of NTHU. Please add network latency numbers on the edges so that the minimum-latency paths match what is specified in the table.



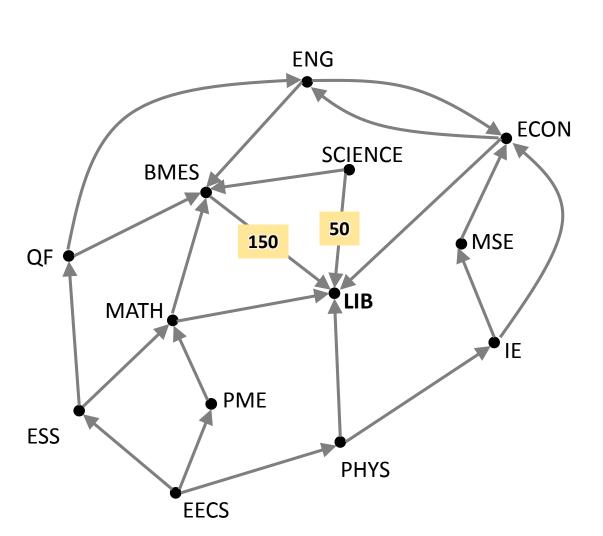
		Min-late	ncy path
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS		2	700
BMES			150
MATH	LID		150
PME	LIB		350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400

Solution

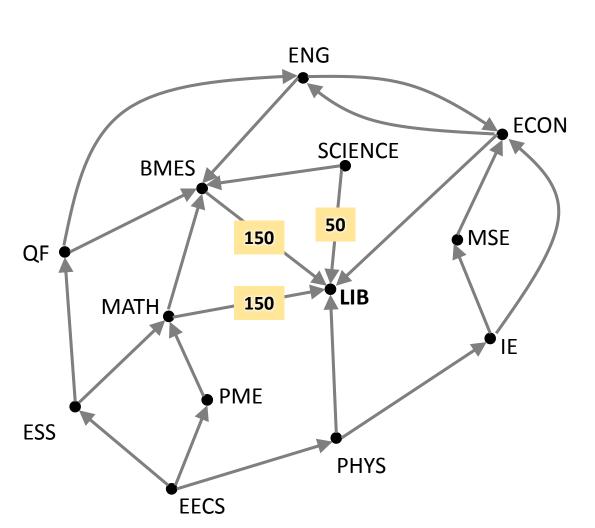




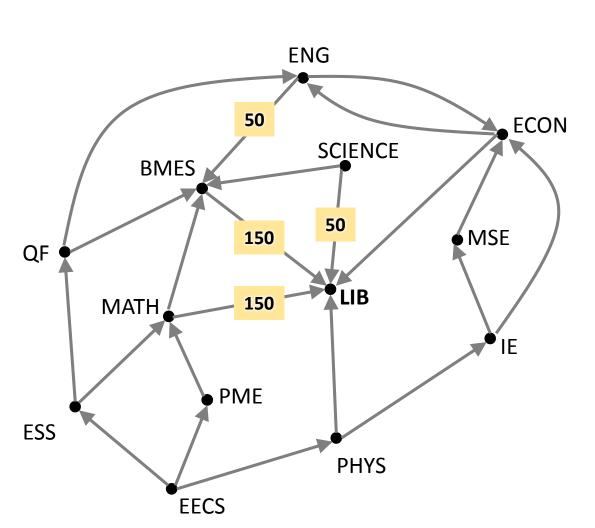
		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS	LIB	2	700
BMES			150
MATH			150
PME		LID	
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



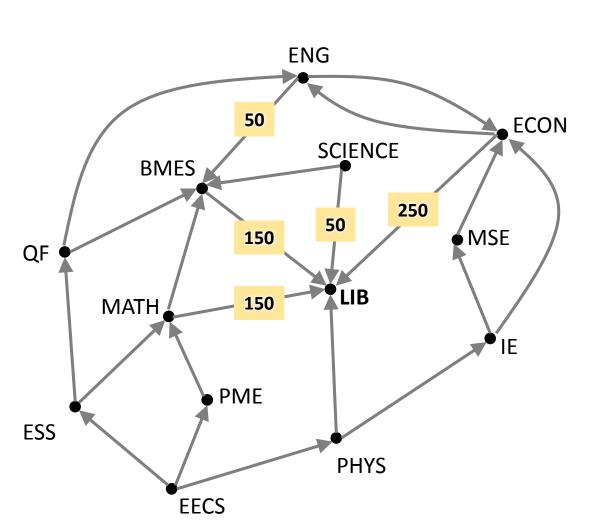
		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS	LIB	2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



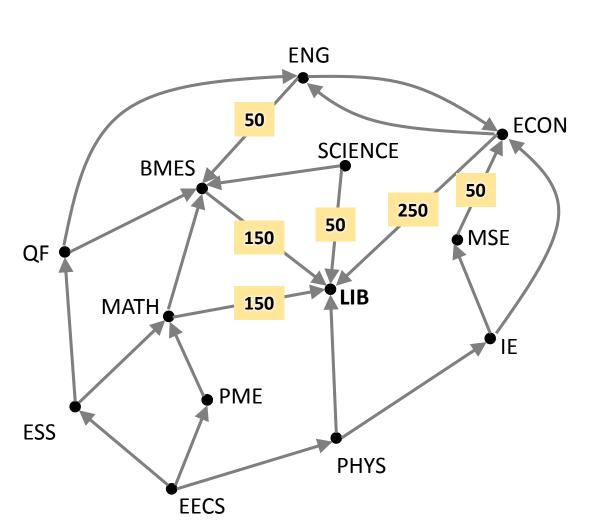
		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS	LIB	2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



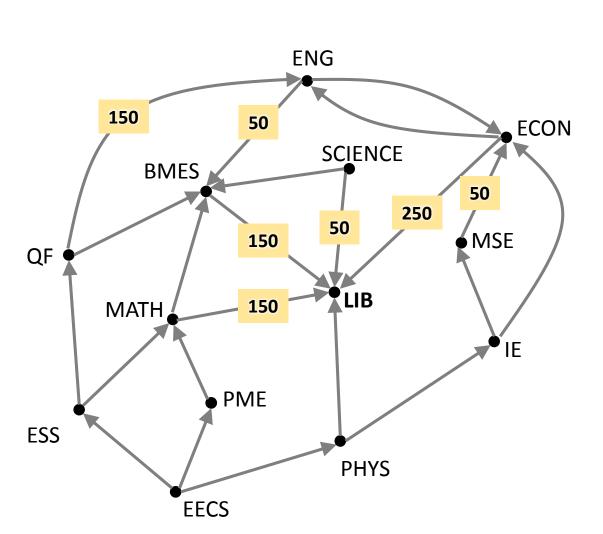
		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS	LIB	2	700
BMES			150
MATH			150
PME		LID	
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



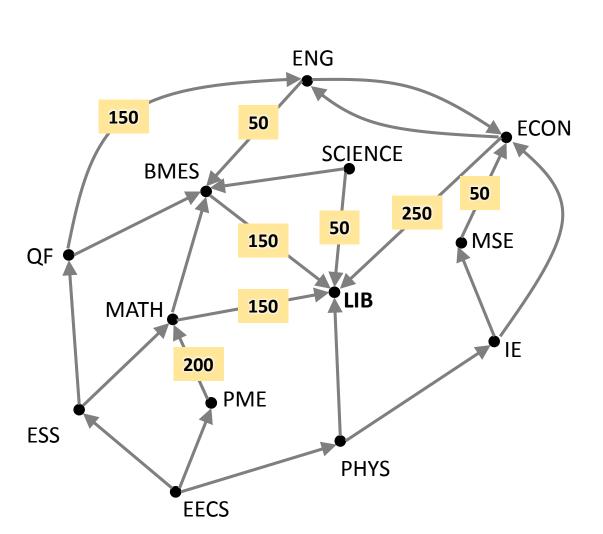
		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS	LIB	2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



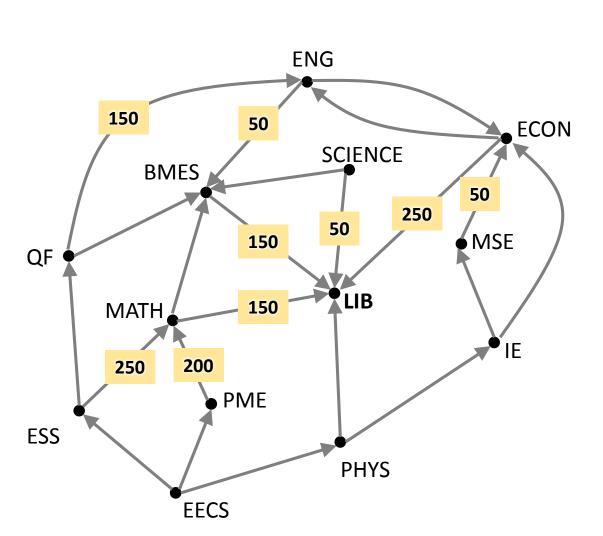
		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS	LIB	2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



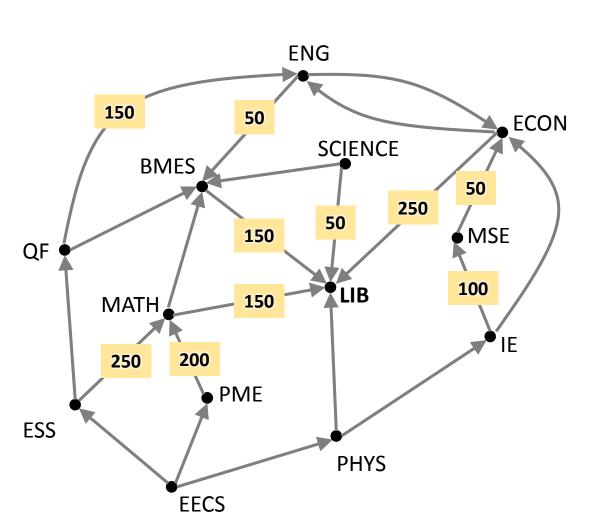
		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS	LIB	2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS		2	700
BMES			150
MATH			150
PME	LIB		350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400

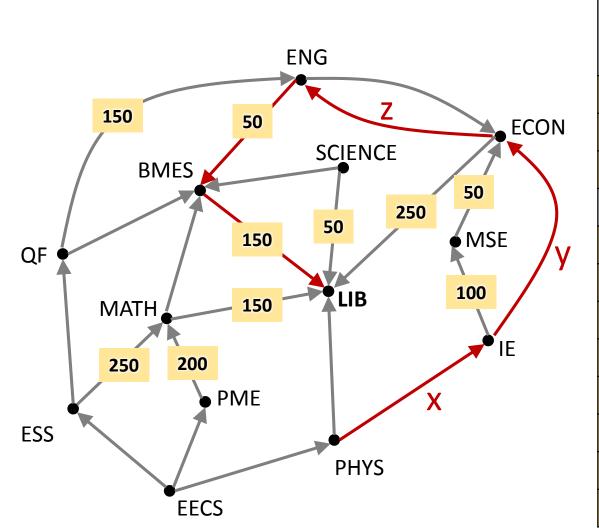


		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS		2	700
BMES			150
MATH			150
PME	LIB		350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400



		Min-latency path	
Source	Dest.	Num. of edges	Latency
ENG			200
QF		3	350
ESS	LIB	2	400
EECS		2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400

- PHYS' and IE's shortest path information, \rightarrow x must be 550-400 = 150
- IE's and ECON's shortest path information, \rightarrow y must be 400-250 = 150
- ECON's and ENG's shortest path information, \rightarrow z must be 250-200 = 50



	Dest.	Min-latency path	
Source		Num. of edges	Latency
ENG			200
QF		3	350
ESS		2	400
EECS		2	700
BMES			150
MATH	LID		150
PME	LIB		350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400

- PHYS' and IE's shortest path information, \rightarrow x must be 550-400 = 150
- IE's and ECON's shortest path information, \rightarrow y must be 400-250 = 150
- ECON's and ENG's shortest path information, \rightarrow z must be 250-200 = 50

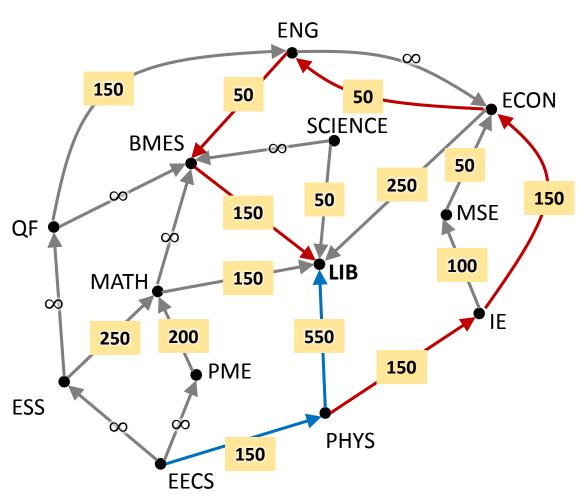
• EECS's and PHYS' shortest path information,

 \rightarrow p must be 150, and q must be 550

E	ENG
150 50	Z ECON
BMES	SCIENCE 50
QF 150	50 250 MSE Y
MATH 150	LIB 100
250 200	q
ESS	PHYS
EECS	

	Dest.	Min-latency path	
Source		Num. of edges	Latency
ENG			200
QF		3	350
ESS	LIB	2	400
EECS		2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400

One valid solution:



Source	Dest.	Min-latency path	
		Num. of edges	Latency
ENG			200
QF		3	350
ESS	LIB	2	400
EECS		2	700
BMES			150
MATH			150
PME			350
SCIENCE			50
PHYS		5	550
ECON		1	250
MSE			300
IE			400