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Question 1:

data = [60, 62, 65, 43, 51]

dataSquared = [3600, 3844, 4225, 1849, 2601]

indices = [60, 84, 22, 84, 60]

collision when entering 43

Thus, new index for 43 = $(84+1^2)$ mod 100 = 85

indices = [60, 84, 22, 85, 60]

collision when entering 51

Thus, new index for 51 = $(60+1^2)$ mod 100 = 61

indices = [60, 84, 22, 85, 61]

Question 2:

Looking at B:

Node	Previous node	Shortest time from A
A	A	0
B	A	2.5
E		
F		
C		
H		
G		
D		
I		

Looking at E:

Node	Previous node	Shortest time from A
A	A	0

B	A	2.5
E	A	3
F		
C		
H		
G		
D		
I		

Looking at F:

Node	Previous node	Shortest time from A
A	A	0
B	A	2.5
E	A	3
F	A	2
C		
H		
G		
D		
I		

Looking at C:

Has two paths from E or from B

From E time = 3 + 10/8 = 4.25

From B time = 2.5 + 49/7 = 9.5

Thus, the path from E is taken

Node	Previous node	Shortest time from A

A	A	0
B	A	2.5
E	A	3
F	A	2
C	E	4.25
H		
G		
D		
I		

Looking at H:

Has three paths from C, E and F

From C time = 4.25 + 70/10 = 11.25

From E time = 3 + 60/20 = 6

From F time = 2 + 4/1 = 6

Thus, the path from F is taken

Node	Previous node	Shortest time from A
A	A	0
B	A	2.5
E	A	3
F	A	2
C	E	4.25
H	F	6
G		
D		
I		

Looking at G:

Has paths from H, F

Time from H = 6 + 22/5 = 10.4

Time from F = 2 + 12/3 = 6

Thus, the path from F is taken

Node	Previous node	Shortest time from A
A	A	0
B	A	2.5
E	A	3
F	A	2
C	E	4.25
H	F	6
G	F	6
D		
I		

Looking at D:

D only has a path from C

Time = 4.25 + 64/16 = 8.25

Node	Previous node	Shortest time from A
A	A	0
B	A	2.5
E	A	3
F	A	2
C	E	4.25
H	F	6
G	F	6

D	C	8.25
I		

Looking at I:

Has three paths D, H and G

Time from D = 8.25 + 30/5 = 14.25

Time from H = 6 + 5/1 = 11

Time from G = 6 + 15/3 = 11

Thus, the path from G is Taken

Node	Previous node	Shortest time from A
A	A	0
B	A	2.5
E	A	3
F	A	2
C	E	4.25
H	F	6
G	F	6
D	C	8.25
I	G	11

Shortest path = A,F,G,I with total time of 11