Problem 1:

Fig1: Separate Chaining(size:10)

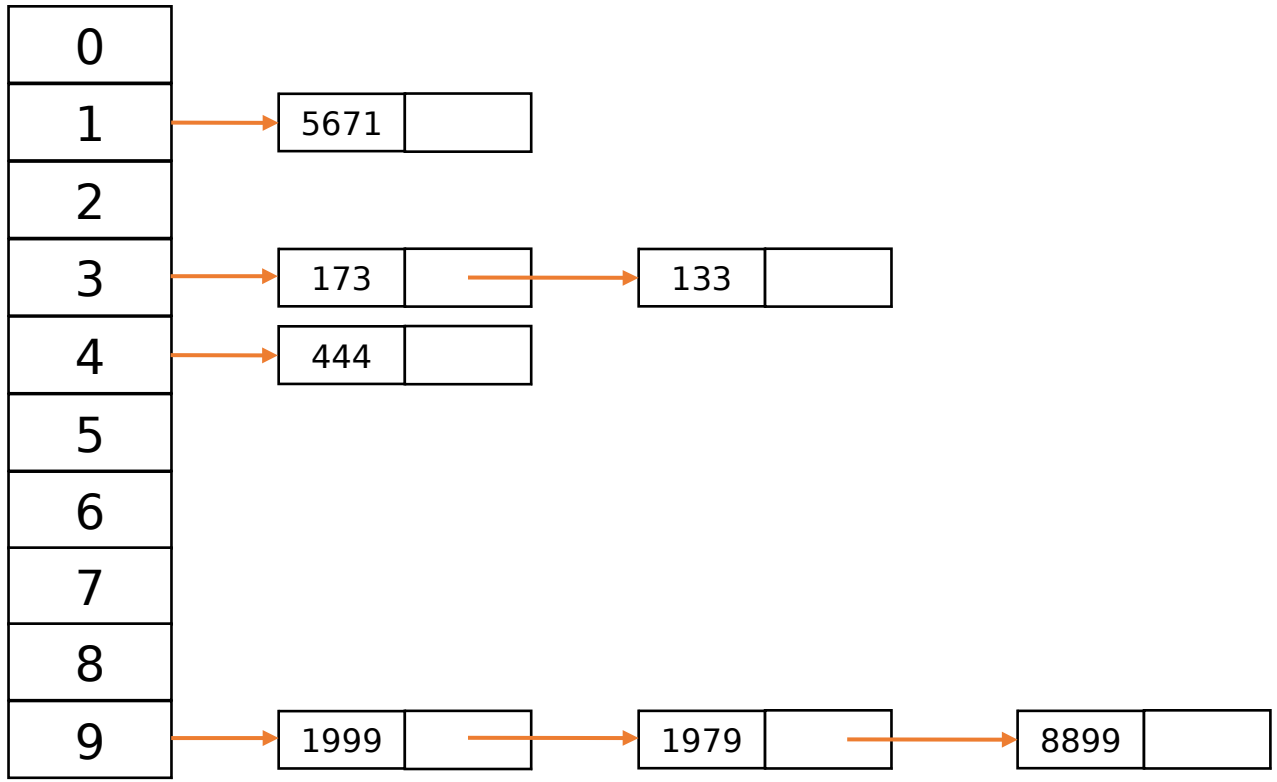

Fig2: Linear Probing(size:10)

0	1	2	3	4	5	6	7	8	9
1979	5671	1999	133	173	444				8899

Fig3: Quadratic Probing(size:10)

0	1	2	3	4	5	6	7	8	9
1979	5671		133	173	444			1999	8899

Fig4: Double Hashing(size:10)

0	1	2	3	4	5	6	7	8	9
	5671	1999	133	444	173		1979		8899

Problem 2:

Unsuccessful search : $U(L) = \frac{1}{2}\left[1 + \left(\frac{1}{1-L}\right)^2\right] \leq 13 \Rightarrow L \leq \frac{4}{5}$

Successful search : $S(L) = \frac{1}{2}\left[1 + \frac{1}{1-L}\right] \leq 10 \Rightarrow L \leq \frac{18}{19}$

$L \leq \frac{4}{5}$

Load factor : $L = \frac{|s|}{n} \leq \frac{4}{5}$

Table size : $n \geq \frac{5}{4} \cdot 1000 = 1250$

Problem 3:

Fig5: Separate Chaining(size:19)

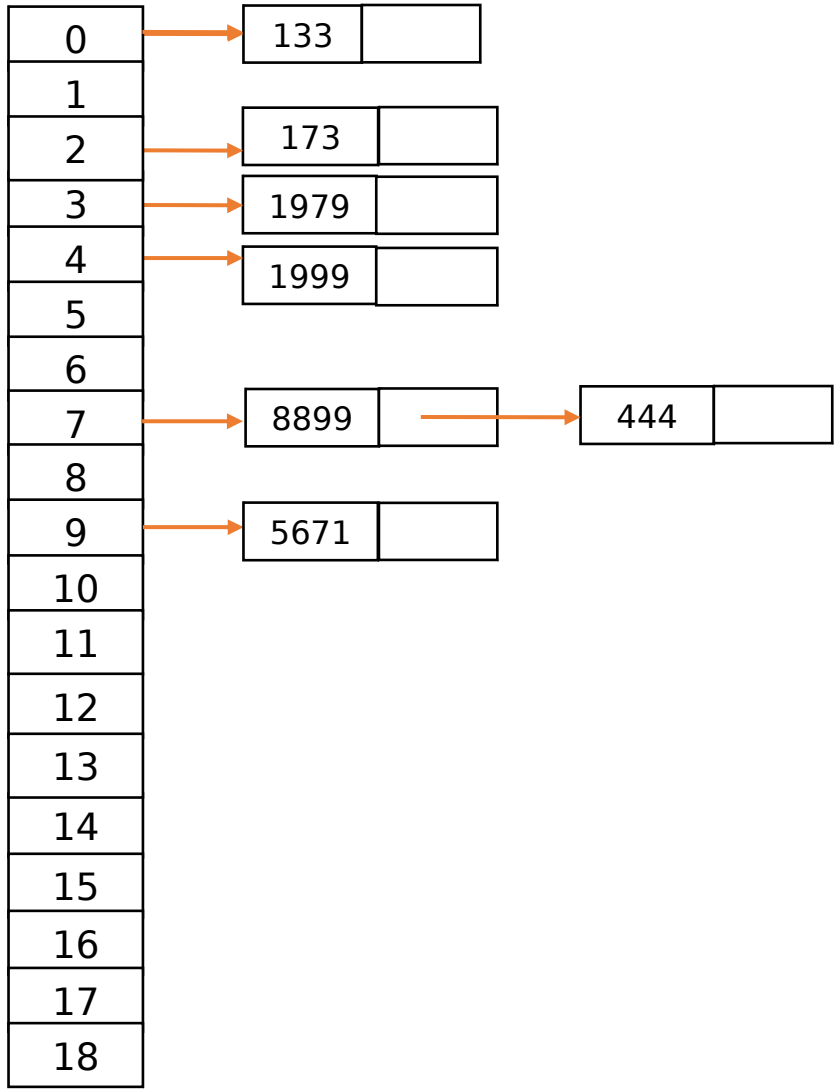

Fig6: Linear Probing(size:19)

0	1	2	3	4	5	6	7	8	9
133		173	1979	1999			444	8899	5671

10	11	12	13	14	15	16	17	18	

Fig7: Quadratic Probing(size:19)

0	1	2	3	4	5	6	7	8	9
133		173	1979	1999			444	8899	5671

10	11	12	13	14	15	16	17	18	

Fig8: Double Hashing(size:19)

0	1	2	3	4	5	6	7	8	9
133		173	1979	1999			444		5671

10	11	12	13	14	15	16	17	18	
		8899							