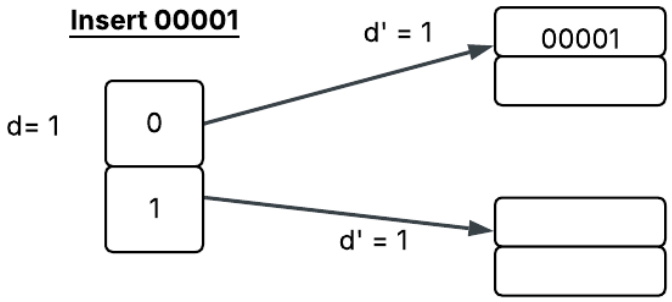
CS443 - Assignment 8

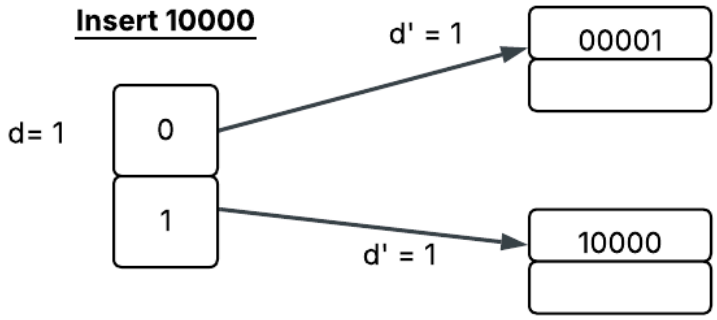
Question 1:

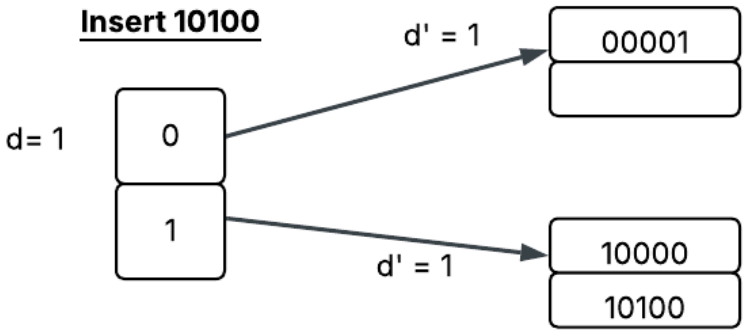
Use extended hashing technique to insert the employees in which their corresponding binary Empl_IDs are shown below. Assume you can have two employees per block. Show the depth of both global and local directories. The bits should be considered from left to right as shown in the lecture..

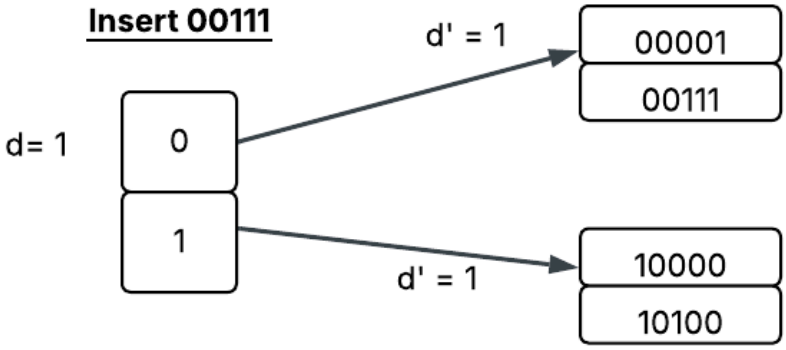
00001, 10000, 10100, 00111, 11011, 11101, 10010, 01111, 10101

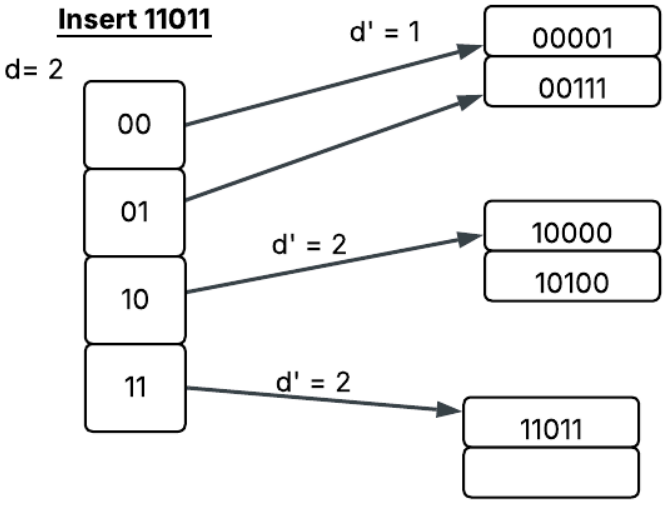
Pictures also included in the folder for better view quality



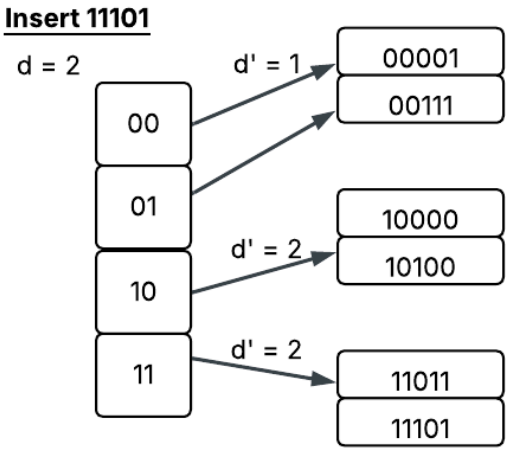



Insert 10100
d' = 1
00001
d= 1
0
1
10000
d' = 1
10100

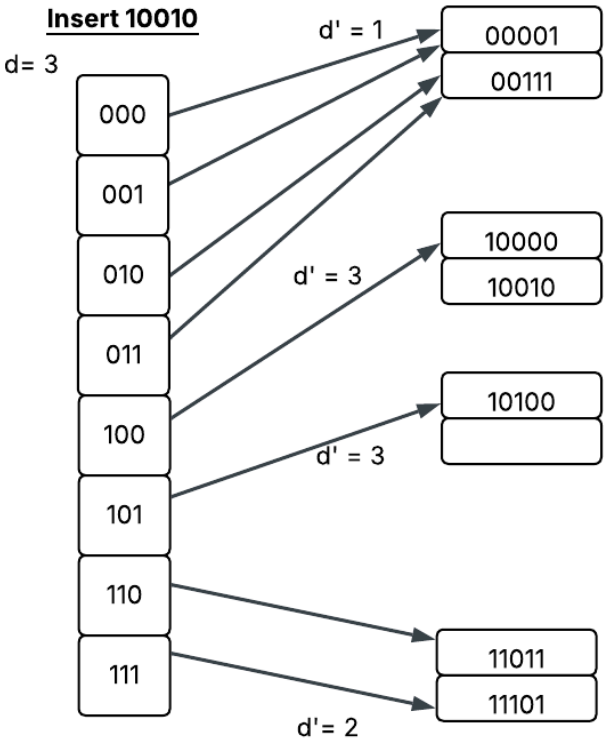

Insert 00111
d' = 1
00001
00111
d= 1
0
1
10000
d' = 1
10100

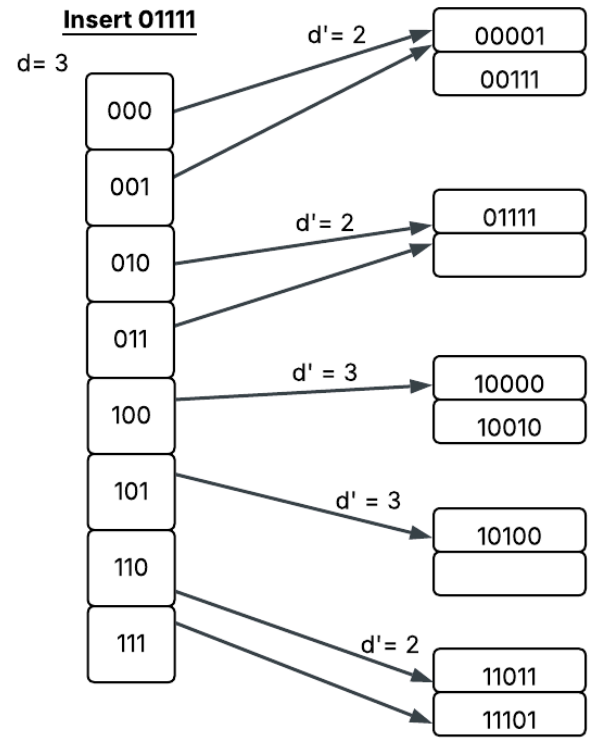

Insert 11011
d' = 1
00001
00111
d= 2
00
01
d' = 2
10000
10100
10
11
d' = 2
11011

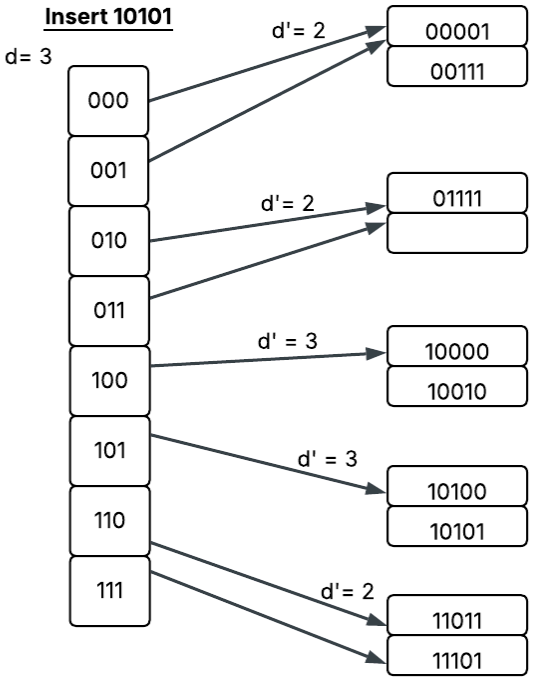
Insert 11101



Insert 10010




Insert 01111
d= 3
000
001
010
011
100
101
110
111
d'= 2
d'= 2
d' = 3
d' = 3
d'= 2
00001
00111
01111
10000
10010
10100
11011
11101

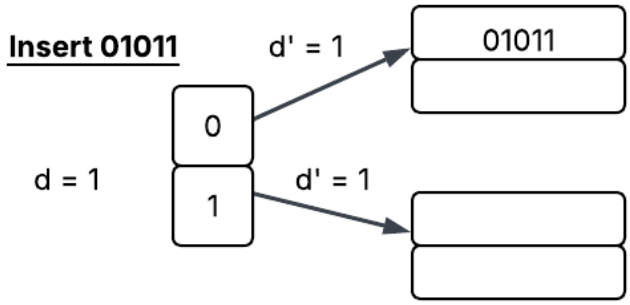

Insert 10101
d= 3
000
001
010
011
100
101
110
111
d'= 2
d'= 2
d' = 3
d' = 3
d'= 2
00001
00111
01111
10000
10010
10100
10101
11011
11101

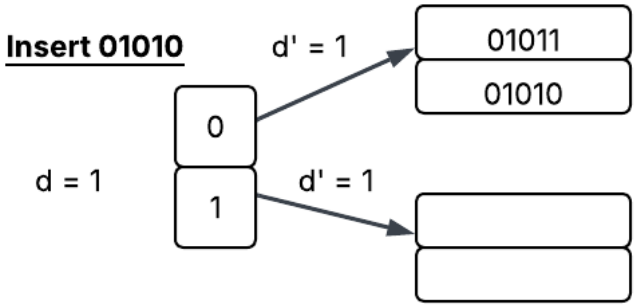
Question 2:

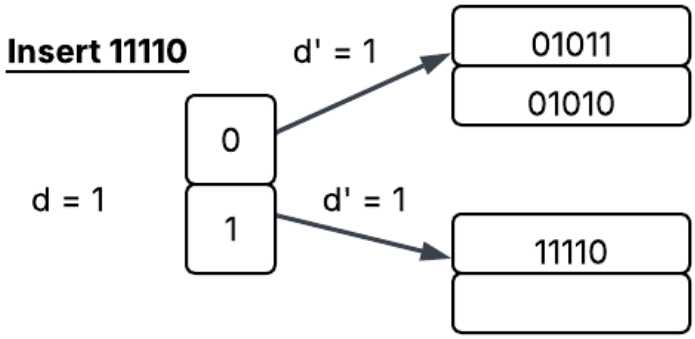
Use extended hashing technique to insert the employees in which their corresponding binary Empl_IDs are shown below. Assume you can have two employees per block. Show the depth of both global and local directories. The bits should be considered from left to right as shown in the lecture.

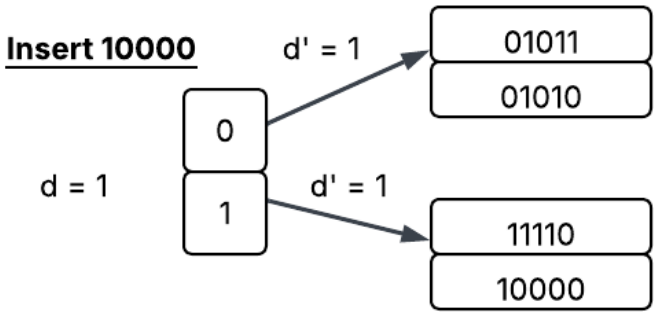
01011, 01010, 11110, 10000, 10010, 11111

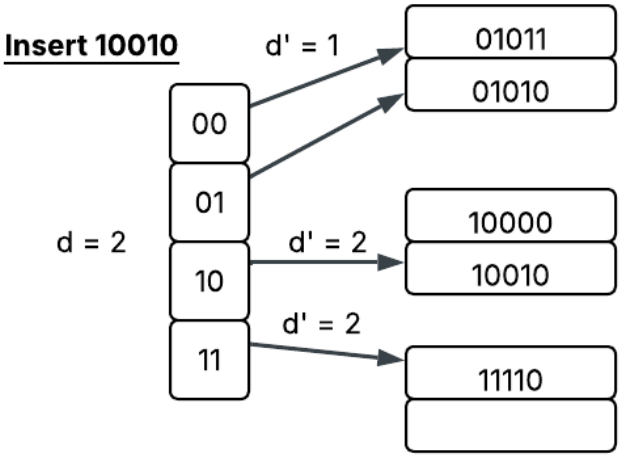
Pictures also included in the folder for better view quality

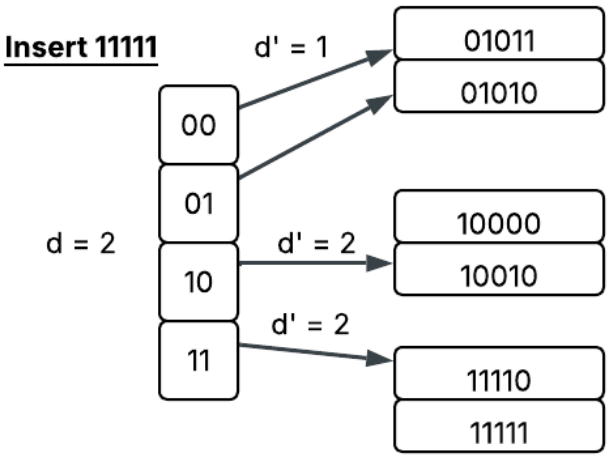







Insert 10000
d' = 1
01011
01010
0
d = 1
1
d' = 1
11110
10000


Insert 10010
d' = 1
01011
01010
00
01
d = 2
10000
d' = 2
10
10010
d' = 2
11
11110


Insert 11111
d' = 1
01011
01010
00
01
d = 2
10000
d' = 2
10
10010
d' = 2
11
11110
11111

Question 3:

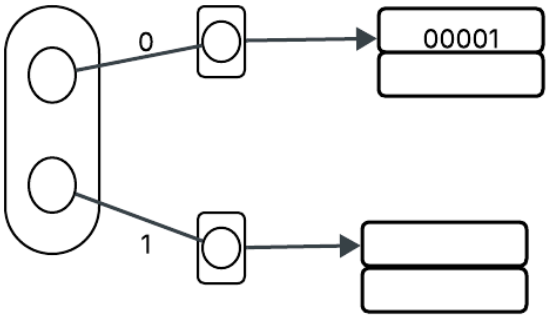
Consider the following records of question 1: (Again Digits should be considered from left to right)

00001, 10000, 10100, 00111, 11011, 11101, 10010, 01111, 10101

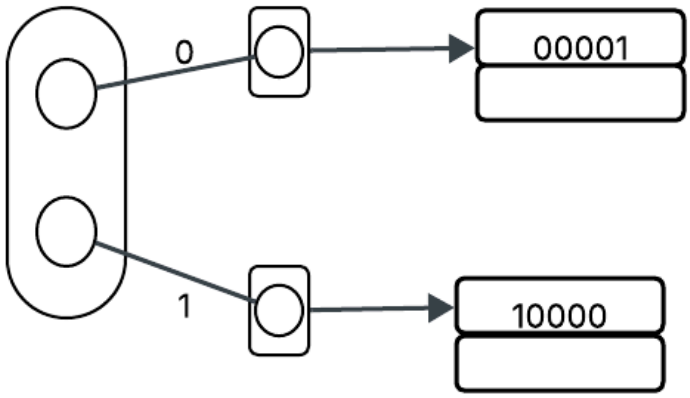
Load the records into files using Dynamic Hashing Scheme. You can put two records per block. Show the directory at each step, and the global and local depths.

Pictures also included in the folder for better view quality

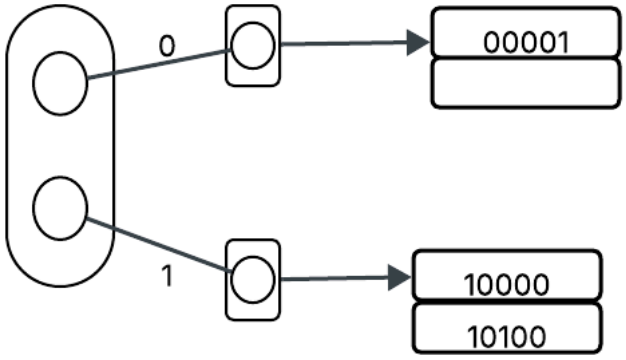
Insert 00001



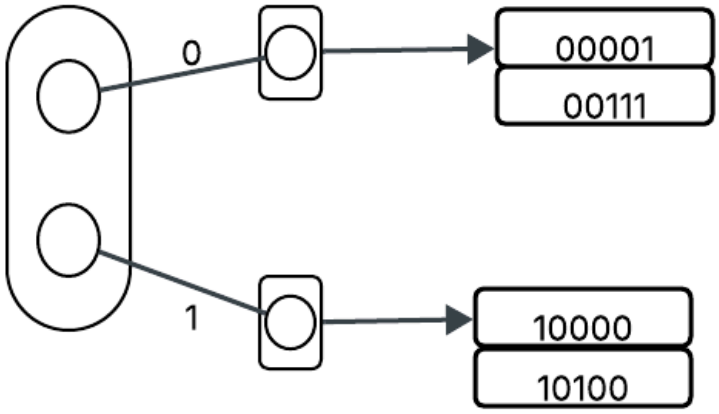
Insert 10000



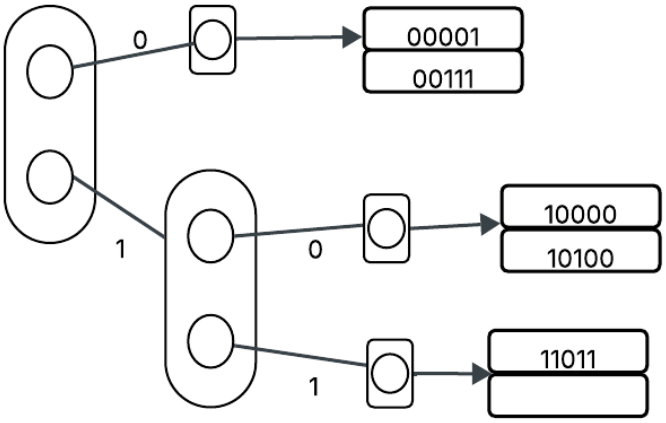
Insert 10100



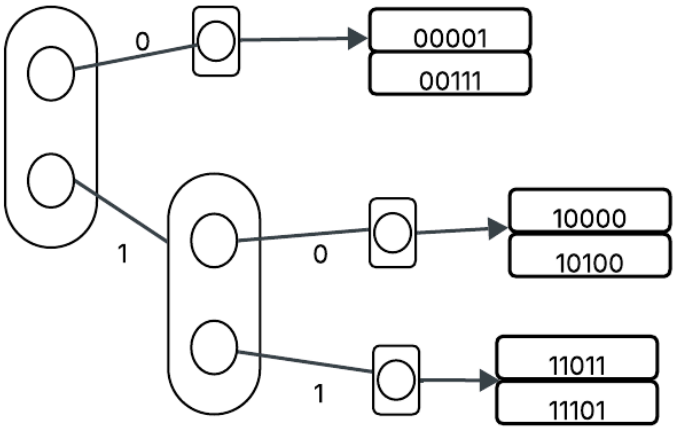
Insert 00111



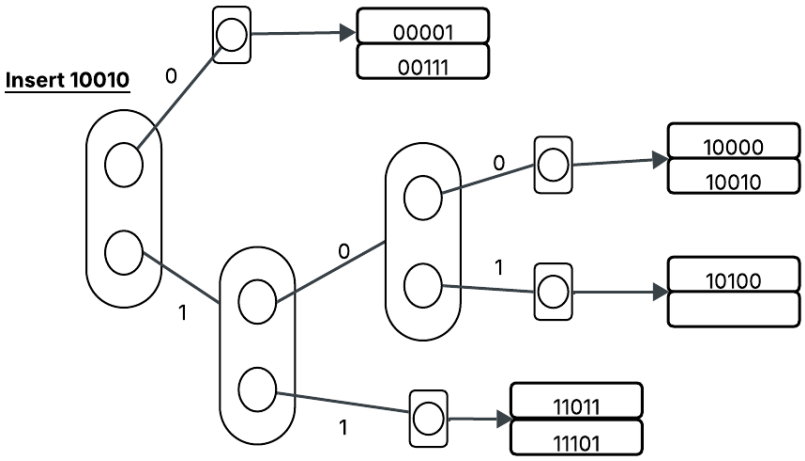
Insert 11011

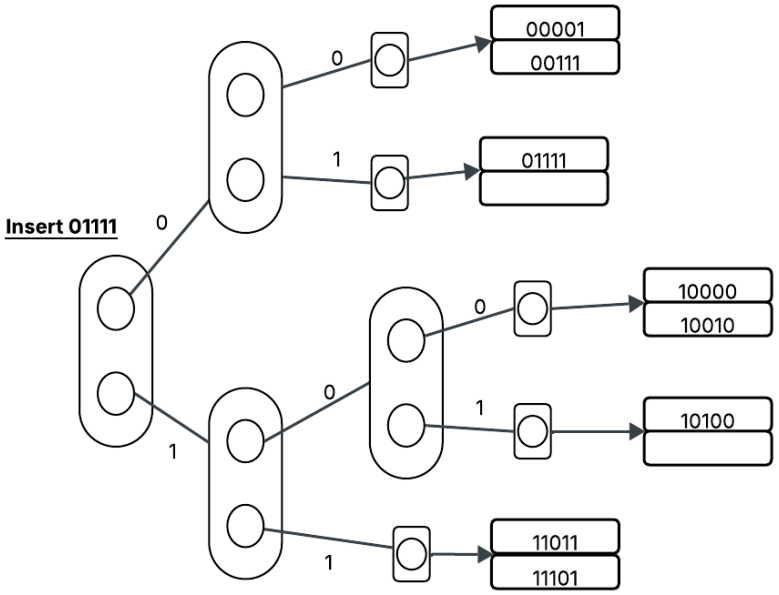


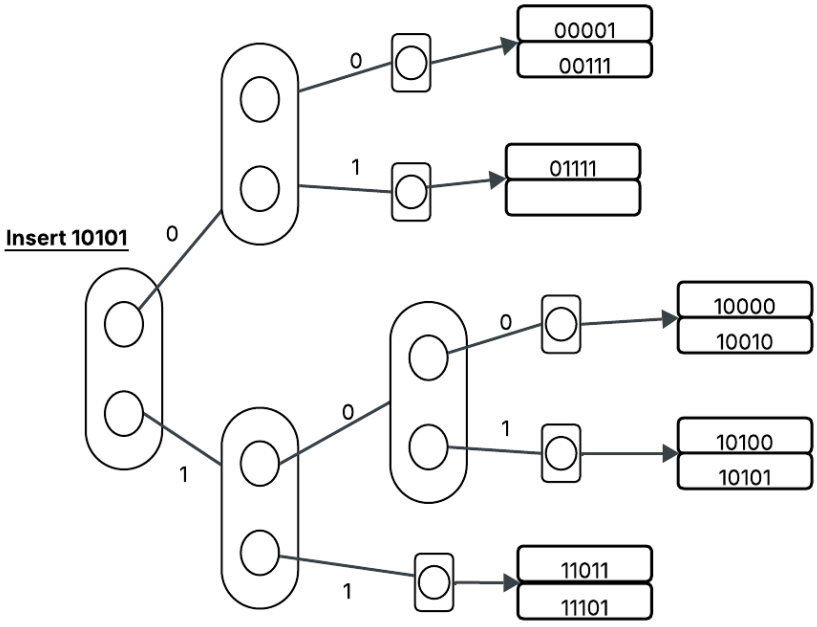
Insert 11101



Insert 10010




Insert 01111
0
1
0
1
0
1
0
1
00001
00111
01111
10000
10010
10100
11011
11101


Insert 10101
0
1
0
1
0
1
0
1
00001
00111
01111
10000
10010
10100
10101
11011
11101

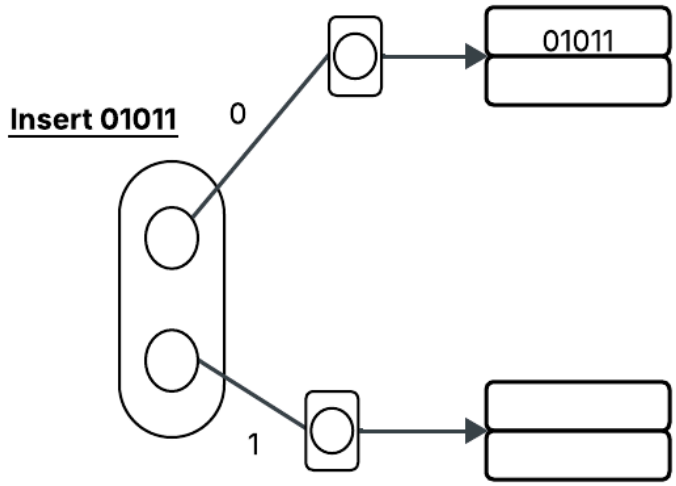
Question 4:

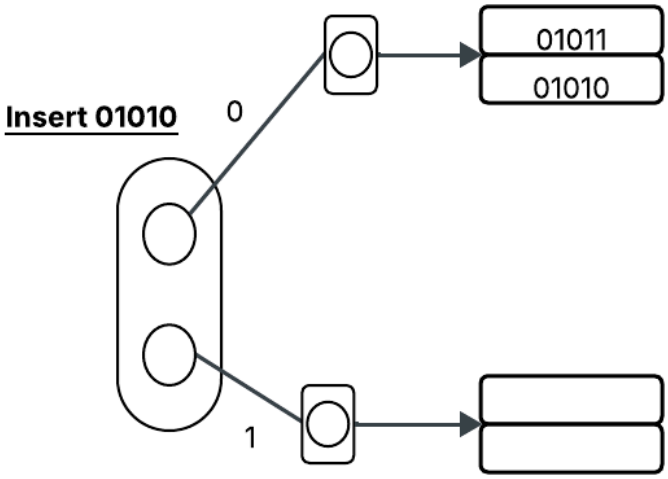
Consider the following records of question 1: (Again Digits should be considered from left to right)

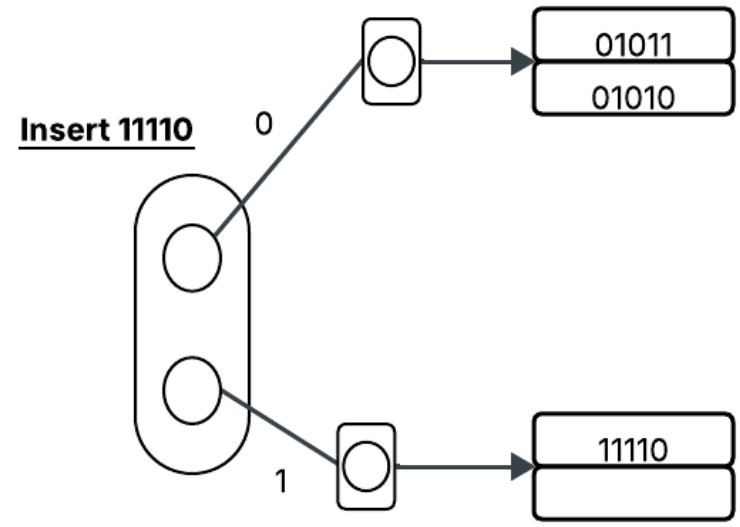
01011, 01010, 11110, 10000, 10010, 11111

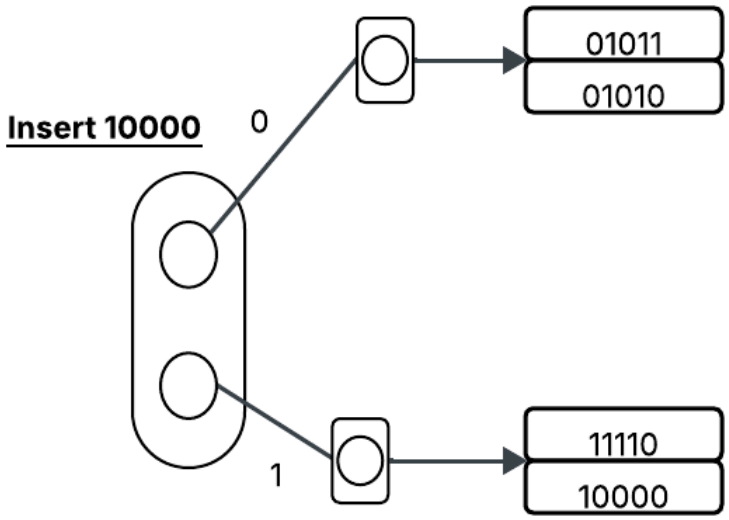
Load the records into files using Dynamic Hashing Scheme. You can put two records per block. Show the directory at each step, and the global and local depths.

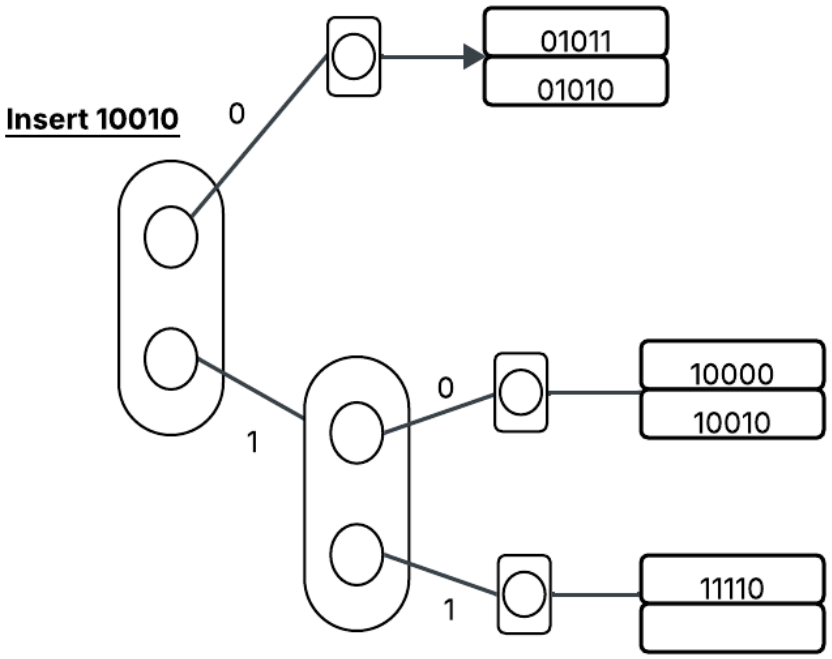
Pictures also included in the folder for better view quality

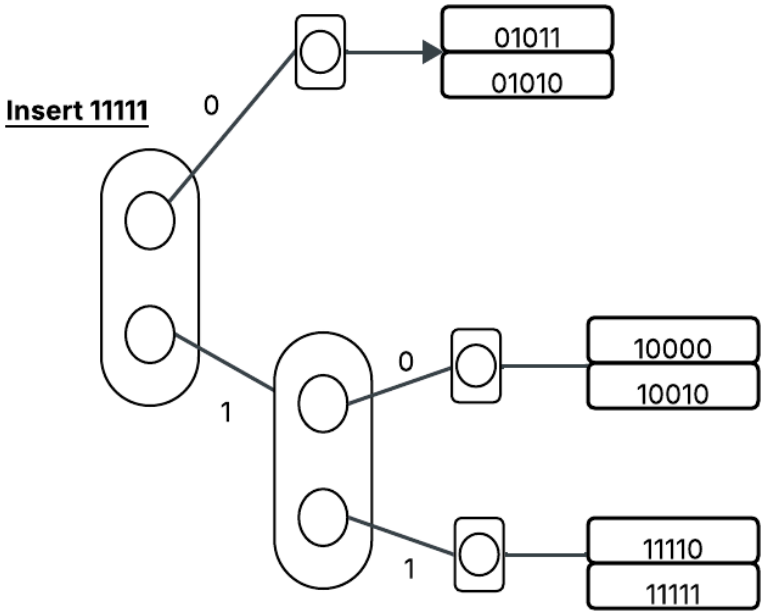





Insert 11110
0
1
01011
01010
11110


Insert 10000
0
1
01011
01010
11110
10000


Insert 10010
0
1
0
1
01011
01010
10000
10010
11110


Insert 11111
0
1
0
1
01011
01010
10000
10010
11110
11111