|  |  |
| --- | --- |
| address |  |
| 0 | 10 |
| 1 | 25 |
| 2 | 12 |
| 3 | 8 |
| 4 | 30 |

Key = 10 25 12 8 30

1 10 % 5 = 0

2 25 % 5 = 0, + 1

3 12 % 5 = 2

4 8 % 5 =

5 30 % 5 = 0

0 + i

0 + 1 = 1

0 + 2 = 2

0 + 3 = 3

0 + 4 = 4

|  |  |
| --- | --- |
| 0 | 10 |
| 1 | 25 |
| 2 | 12 |
| 3 | 8 |
| 4 | 30 |

10 25 12 8 30

10 % 5 = 0

25 % 5 = 0

1 = 0 + 1 \* 1

8 % 5 = 0

1 = 0 + 1 \* 1

2 = 0 + 2 \* 2

3 = 0 + 3 \* 3

30 % 5 = 0

1 = 0 + 1 \* 1

2 = 0 + 2 \* 2

3 = 0 + 3 \* 3

10 25 12 8 30 22 40

|  |  |
| --- | --- |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |

10 25 30

12 22

8

F(i) , F(I)

|  |  |
| --- | --- |
| 0 | 10 |
| 25 |
| 30 |
| 1 | 40 |
|  |
|  |
| 2 | 12 |
| 22 |
|  |
| 3 | 8 |
|  |
|  |

50 71 88 100 85 90 74 57 48 101

|  |  |
| --- | --- |
| 0 | 50 |
| 1 | 71 |
| 2 | 100 |
| 3 | 90 |
| 4 | 74 |
| 5 | 85 |
| 6 | 101 |
| 7 | 57 |
| 8 | 88 |
| 9 | 48 |

50 % 10 = 0

71 % 10 = 1

100 % 10 = 2(0 + 2)

90 % 10

= 0 + 7

100 0 + 1 = 1

0 + 2 = 2

50 71 88 100 85 90 74 57 48 101

|  |  |
| --- | --- |
| 0 | 50 |
| 1 | 71 |
| 2 | 48 |
| 3 | 74 |
| 4 | 100 |
| 5 | 85 |
| 6 | 101 |
| 7 | 57 |
| 8 | 88 |
| 9 | 90 |

100 0 + 1 \* 1 = 1

0 + 2 \* 2 = 4

90 0 + 1 \* 1 = 1

0 + 2 \* 2 = 4

0 + 3 \* 3 = 9

74 4 + 1 \* 1 = 5

4 + 2 \* 2 = 8

4 + 3 \* 3 = 13

13 % 10 = 3

48 8 + 1 \* 1 = 9

8 + 2 \* 2 = 12

12 % 10 = 2

101 1 + 1 \* 1 = 2

1 + 2 \* 2 = 5

1 + 3 \* 3 = 10

1 + 4 \* 4 = 17

1 + 5 \* 5 = 26 = 26 % 10

bucket

50 71 88 100 85 90 74 57 48 101

|  |  |
| --- | --- |
| 0 | 50 |
| 100 |
| 90 |
| 1 | 71 |
| 101 |
|  |
| 2 |  |
|  |
|  |
| 3 |  |
|  |
|  |
| 4 | 74 |
|  |
|  |
| 5 | 85 |
|  |
|  |
| 6 |  |
|  |
|  |
| 7 | 57 |
|  |
|  |
| 8 | 88 |
| 48 |
|  |
| 9 |  |
|  |
|  |

Linked lists

50 71 88 100 85 90 74 57 48 101

|  |  |  |  |
| --- | --- | --- | --- |
| 0 | 50 | 100 | 90 |
| 1 | 71 | 101 |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 | 74 |  |  |
| 5 | 85 |  |  |
| 6 |  |  |  |
| 7 | 57 |  |  |
| 8 | 88 | 48 |  |
| 9 |  |  |  |

25 27 14 48 37 30 26 41 31 43 54 40

linear

|  |  |
| --- | --- |
| 0 | 48 |
| 1 | 25 |
| 2 | 14 |
| 3 | 27 |
| 4 | 37 |
| 5 | 26 |
| 6 | 30 |
| 7 | 41 |
| 8 | 31 |
| 9 | 43 |
| 10 | 54 |
| 11 | 40 |

37 % 12 = 1, 1 + 1 = 2, 1 + 2 = 3, 1 + 3 = 4

26 % 12 = 2, 1 + 2 = 3, 1 + 3 = 4, 1 + 4 = 5

41 % 12 = 5, 1 + 5 = 6, 1 + 6 = 7

31 % 12 = 7, 1 + 7 = 8

43 % 12 = 7, 7 + 1 = 8, 1 + 8 = 9

54 % 12 = 6, 1 + 6 = 7, 1 + 7 = 8. 1 + 8 = 9, 1 + 9 = 10

40 % 12 = 4, 1 + 4 = 5, 1 + 5 = 6, 1 + 6 = 7, 1 + 7 = 8,,,1 + 10 = 11

25 27 14 48 37 30 26 41 31 43 54 40

qua

|  |  |
| --- | --- |
| 0 | 48 |
| 1 | 25 |
| 2 | 14 |
| 3 | 27 |
| 4 | 40 |
| 5 | 37 |
| 6 | 30 |
| 7 | 31 |
| 8 | 43 |
| 9 | 41 |
| 10 | 54 |
| 11 | 26 |

48 % 12 = 0

25 % 12 = 1

14 % 12 = 2

27 % 12 = 3

40 % 12 = 4

37 % 12 = 1, 1 + 1 \* 1 = 2, 1 + 2 \* 2 = 5

30 % 12 = 6

31 % 12 = 7

43 % 12 = 7, 7 + 1 \* 1 = 8

41 % 12 = 5,5 + 1 \* 1 = 6, 5 + 2 \* 2

54 % 12 = 6, 6 + 1 \* 1 = 7, 6 + 2 \* 2 = 10,6 + 3 \* 3 = 15,6 + 4 \* 4 = 22, 22 % 12 = 10

26 % 12 = 2, 2 + 1 \* 1 = 3, 2 + 2 \* 2 = 5, 2 + 3 \* 3 = 11

25 27 14 48 37 30 26 41 31 43 54 40

Bucket

|  |  |
| --- | --- |
| 0 |  |
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| 9 |  |
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| 10 |  |
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| 11 |  |
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