***COSC 222 – LAB 8***

QUESTION 1

1. Linear Probing (I,i+1,i+2,i+3,…)

Add 17:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  | 17 |  |  |  |

Add 25:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  | 17 | 25 |  |  |

Add 11 (Collision with 25):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  | 17 | 25 | 11 |  |

Add 46 (Collision with 25 then with 11):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  | 17 | 25 | 11 | 46 |

Add 14:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** | 14 |  |  | 17 | 25 | 11 | 46 |

1. Quadratic Probing (i, i+1^2, i+2^2, i+3^2, ...)

Add 17:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  | 17 |  |  |  |

Add 25:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  | 17 | 25 |  |  |

Add 11 (Collision with 25):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  | 17 | 25 | 11 |  |

Add 46 (Collision with 25 then with 11):

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  | 46 | 17 | 25 | 11 |  |

Add 14:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** | 14 |  | 46 | 17 | 25 | 11 |  |

1. Separate Chaining (storing a list at each index)

Add 17:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  |  |  |  |  |

17

Add 25:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  |  |  |  |  |

25

17

Add 11:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  |  |  |  |  |

25

17

11

Add 46:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  |  |  |  |  |

25

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46

Add 14:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| **Values** |  |  |  |  |  |  |  |

25

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14

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46