# Example 01

Prepared By: Sukarna Sarker

# Symbol Table implementation through List of Hashtables:

level = 0, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
        int x, y;
        …..
    }
}
```

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# Symbol Table implementation through List of Hashtables:

level = 1, bucket size= 7

```
1. void f(int a, int b) {
2.     double x;
3.     while (...) {
4.             int x, y;
5.             …..
6.     }
7. }
```

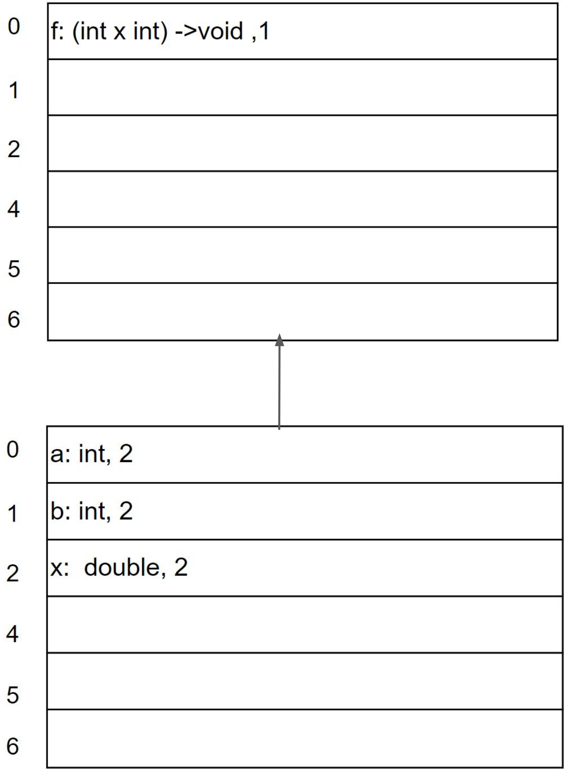
| | |
|---|---|
| 0 | f: (int x int) ->void ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

Prepared By: Sukarna Sarker

# Symbol Table implementation through List of Hashtables:

level = 2, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
            int x, y;
            …..
    }
}
```



| | |
|---|---|
| 0 | f: (int x int) ->void ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

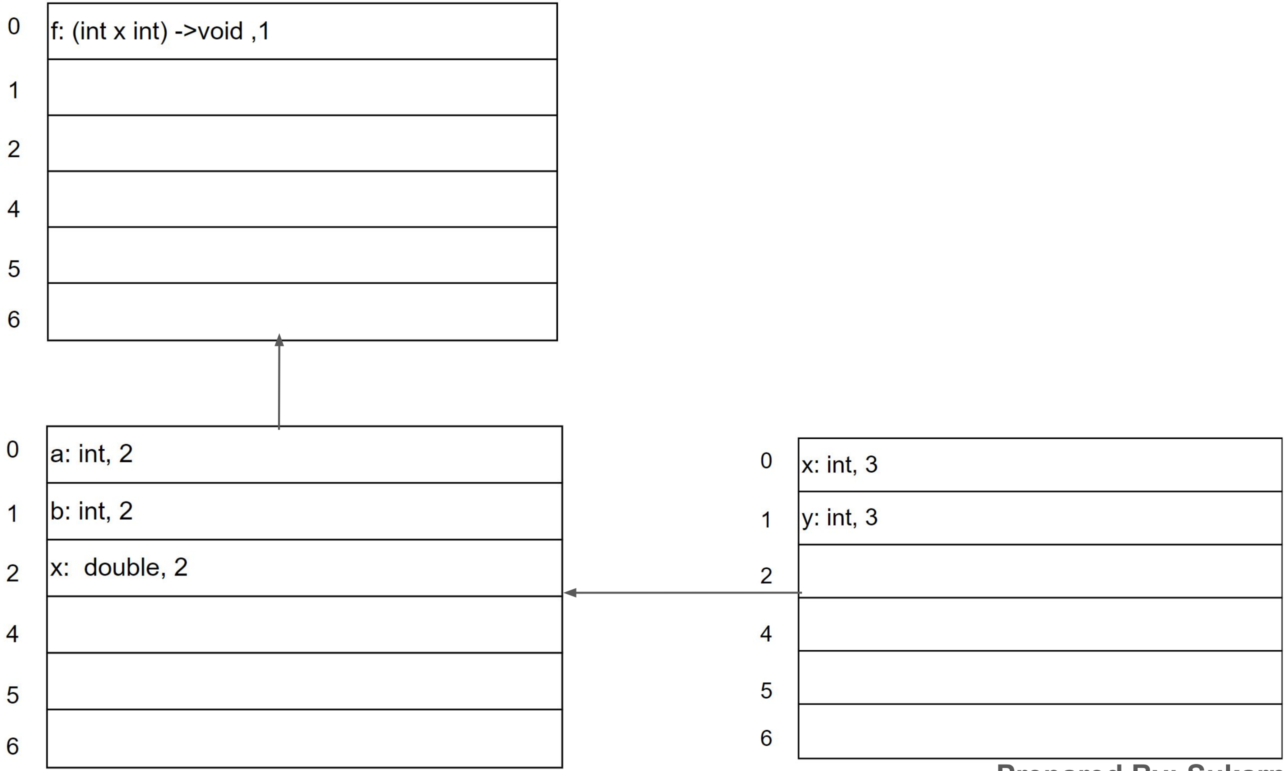
| | |
|---|---|
| 0 | a: int, 2 |
| 1 | b: int, 2 |
| 2 | x:  double, 2 |
| 4 | |
| 5 | |
| 6 | |

**Prepared By: Sukarna Sarker**

# Symbol Table implementation through List of Hashtables:

level = 3, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
            int x, y;
            .....
    }
}
```



| | |
|---|---|
| 0 | f: (int x int) ->void ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

| | |
|---|---|
| 0 | a: int, 2 |
| 1 | b: int, 2 |
| 2 | x:  double, 2 |
| 4 | |
| 5 | |
| 6 | |

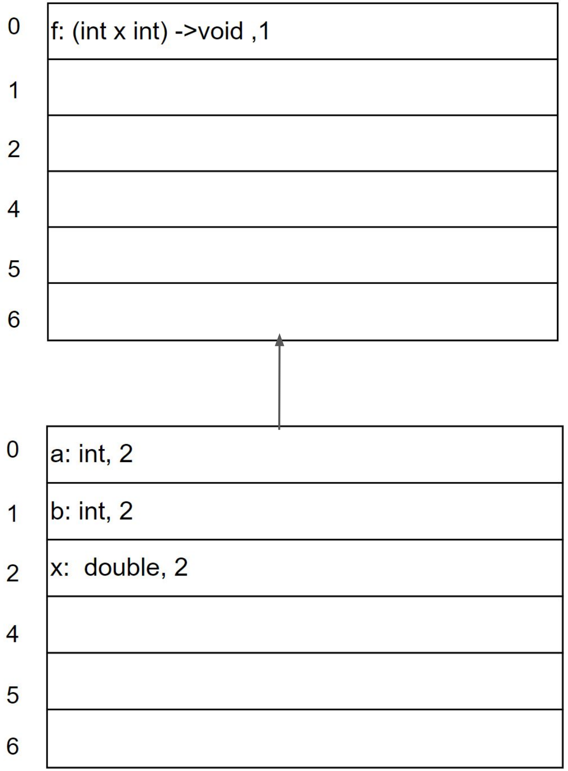
| | |
|---|---|
| 0 | x: int, 3 |
| 1 | y: int, 3 |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

Prepared By: Sukarna Sarker

# Symbol Table implementation through List of Hashtables:

level = 2, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
            int x, y;
            …..
    }
}
```



| | |
|---|---|
| 0 | f: (int x int) ->void ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

| | |
|---|---|
| 0 | a: int, 2 |
| 1 | b: int, 2 |
| 2 | x:  double, 2 |
| 4 | |
| 5 | |
| 6 | |

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# Symbol Table implementation through List of Hashtables:

level = 1, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
            int x, y;
            …..
    }
}
```

| | |
|---|---|
| 0 | f: (int x int) ->void ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

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# Symbol Table implementation through List of Hashtables:

level = 0, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
            int x, y;
            …..
    }
}
```

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# Symbol Table implementation through Hashtables of List:

level = 0, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
            int x, y;
            …..
    }
}
```

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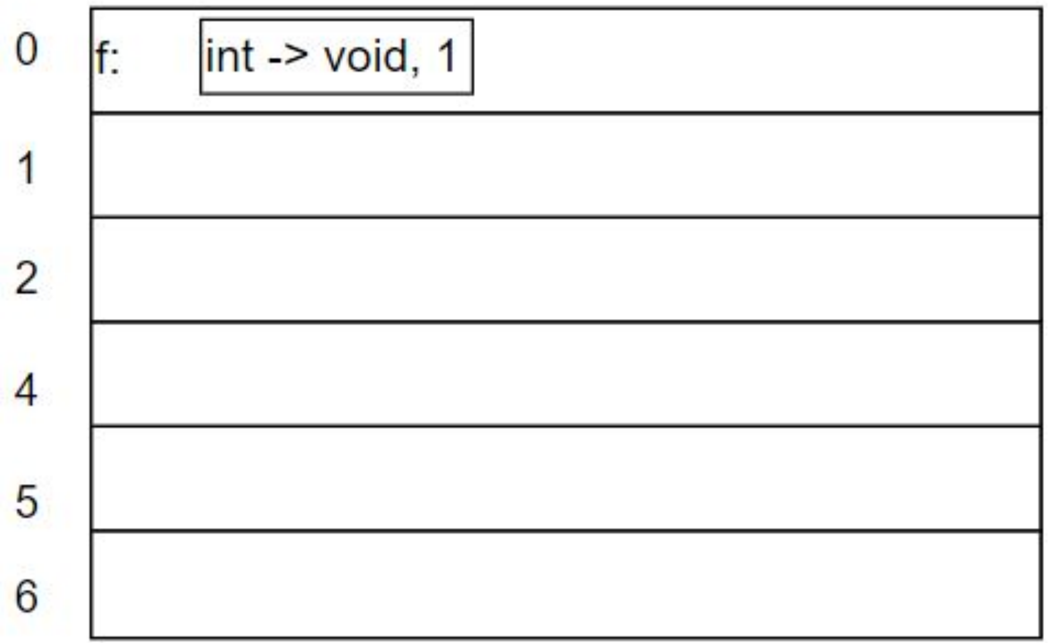
# Symbol Table implementation through Hashtables of List:

level = 1, bucket size= 7

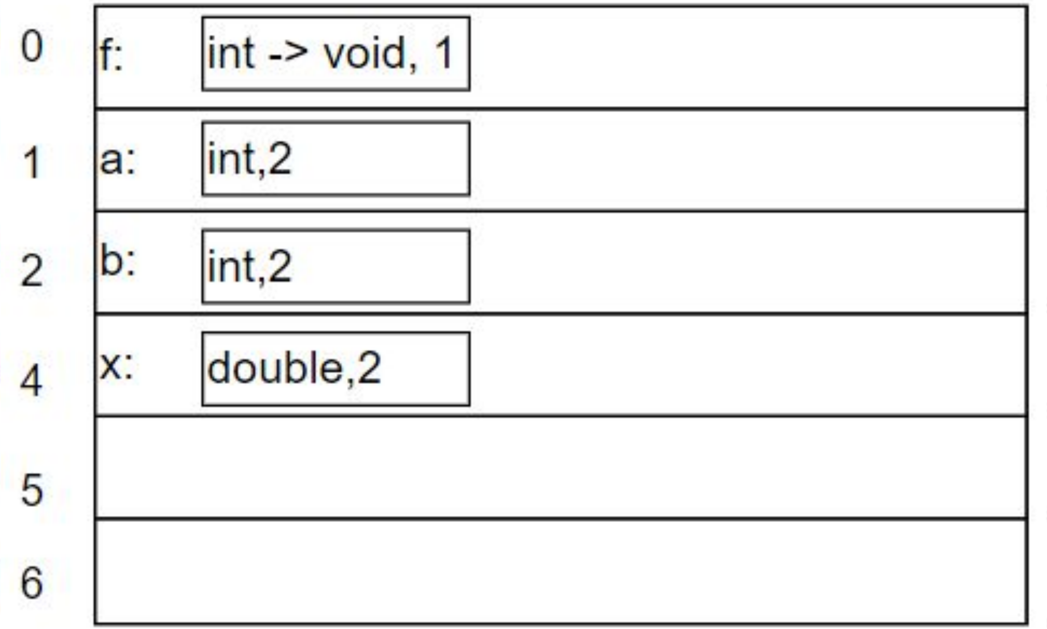
```
void f(int a, int b) {
    double x;
    while (...) {
        int x, y;
        …..
    }
}
```



# Symbol Table implementation through Hashtables of List:

level = 2, bucket size= 7

```
1. void f(int a, int b) {
2.     double x;
3.     while (...) {
4.             int x, y;
5.             …..
6.     }
7. }
```



|   |    |                  |
|---|----|------------------|
| 0 | f: | int -> void, 1   |
| 1 | a: | int,2            |
| 2 | b: | int,2            |
| 4 | x: | double,2         |
| 5 |    |                  |
| 6 |    |                  |

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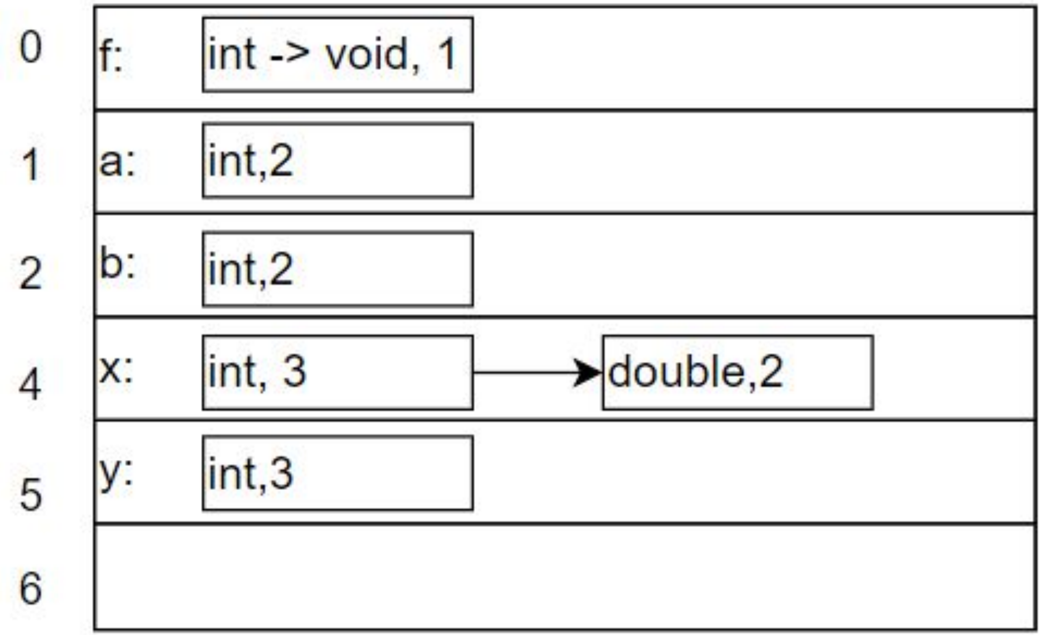
# Symbol Table implementation through Hashtables of List:

level = 3, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
         int x, y;
         .....
    }
}
```



| | | |
|---|---|---|
| 0 | f: | int -> void, 1 |
| 1 | a: | int,2 |
| 2 | b: | int,2 |
| 4 | x: | int, 3 → double,2 |
| 5 | y: | int,3 |
| 6 | | |

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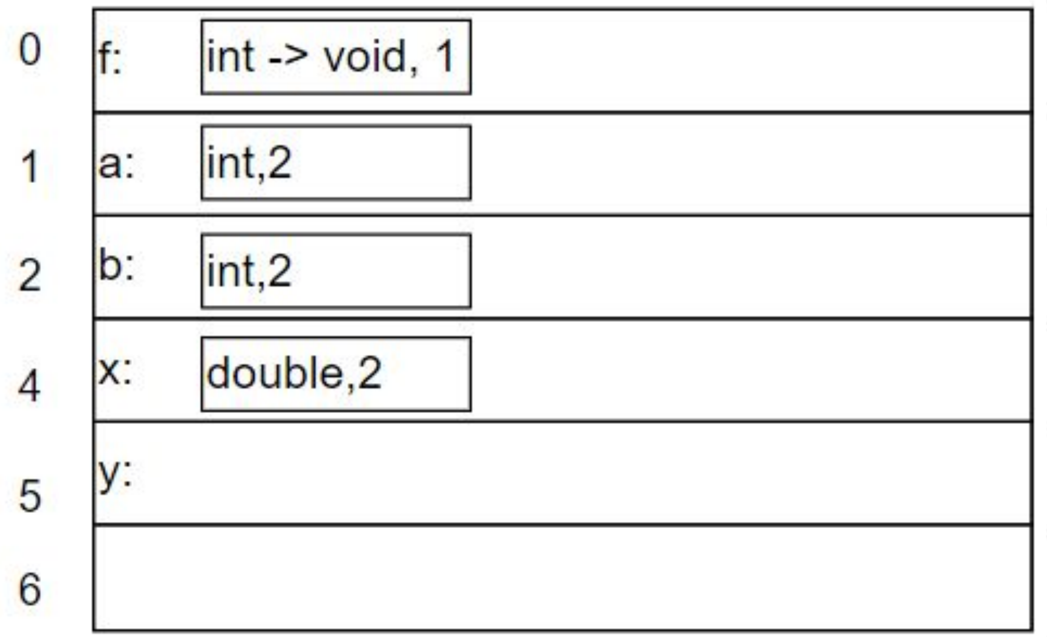
# Symbol Table implementation through Hashtables of List:

level = 2, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
          int x, y;
          .....
    }
}
```



| | | |
|---|---|---|
| 0 | f: | int -> void, 1 |
| 1 | a: | int,2 |
| 2 | b: | int,2 |
| 4 | x: | double,2 |
| 5 | y: | |
| 6 | | |

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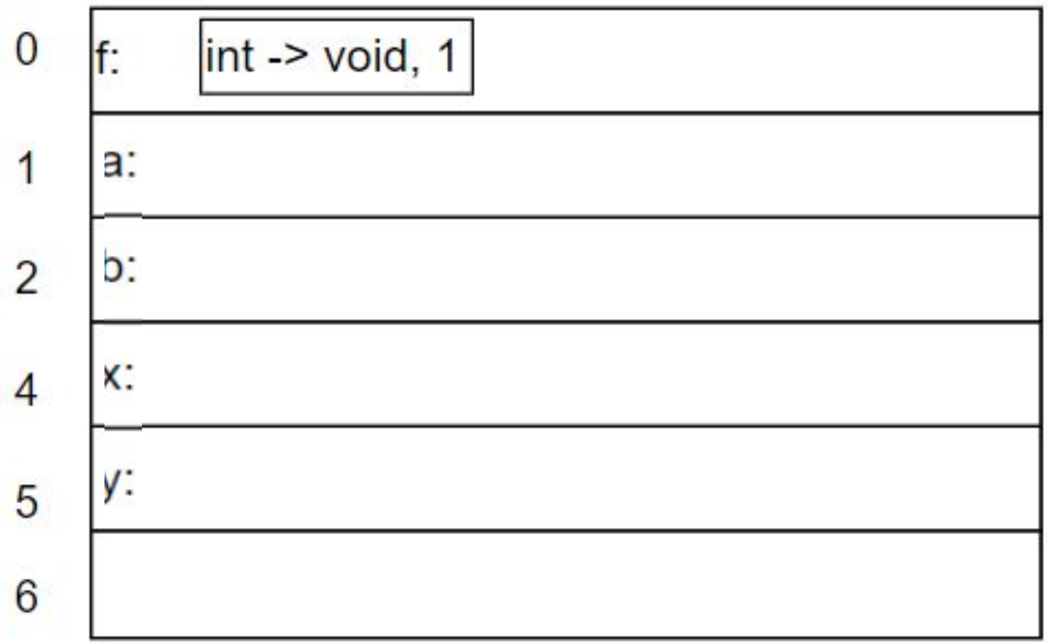
# Symbol Table implementation through Hashtables of List:

level = 1, bucket size= 7

```
1. void f(int a, int b) {
2.     double x;
3.     while (...) {
4.           int x, y;
5.           …..
6.     }
7. }
```



|  |  |
|---|---|
| 0 | f: int -> void, 1 |
| 1 | a: |
| 2 | b: |
| 4 | x: |
| 5 | y: |
| 6 |  |

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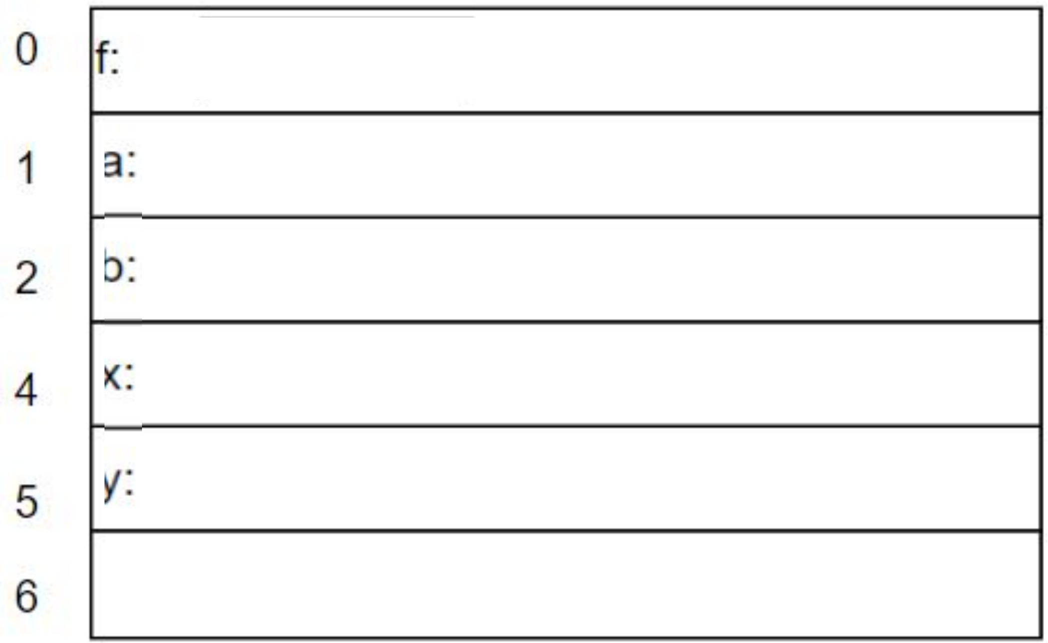
# Symbol Table implementation through Hashtables of List:

level = 0, bucket size= 7

```
void f(int a, int b) {
    double x;
    while (...) {
            int x, y;
            …..
    }
}
```



|   |    |
|---|----|
| 0 | f: |
| 1 | a: |
| 2 | b: |
| 4 | x: |
| 5 | y: |
| 6 |    |

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# Example 02

# Symbol Table implementation through List of Hashtables:

level = 0, bucket size= 7

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```

# Symbol Table implementation through List of Hashtables:

level = 1, bucket size= 7

```
1.    int func(int a, float b) {
2.          return a+b;
3.    }
4.
5.    void main () {
6.          int a, b, c, i;
7.          int e, f[10];
8.          a = 1;
9.          b = 2;
10.         c = func(a, b);
11.
12.         float d;
13.  }
```

| | |
|---|---|
| 0 | func: (int x float) ->int ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

Prepared By: Sukarna Sarker

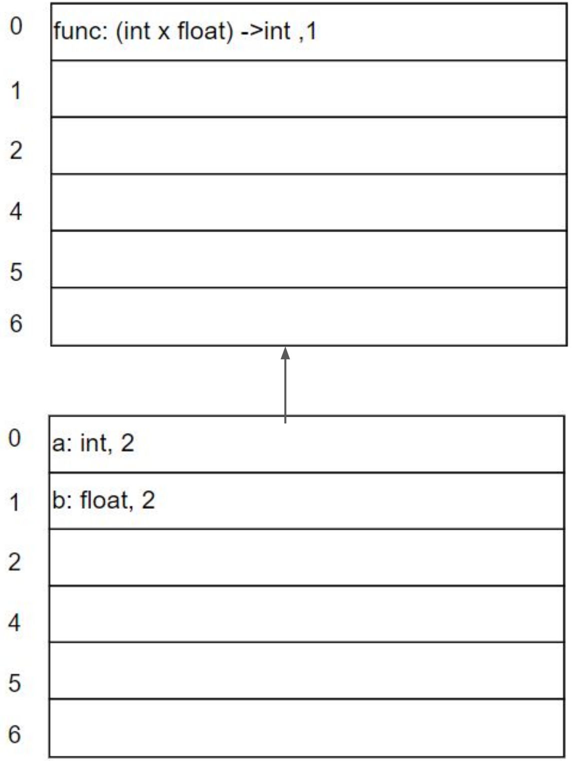
# Symbol Table implementation through List of Hashtables:

level = 2, bucket size= 7

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```



| | |
|---|---|
| 0 | func: (int x float) ->int ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

| | |
|---|---|
| 0 | a: int, 2 |
| 1 | b: float, 2 |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

Prepared By: Sukarna Sarker

# Symbol Table implementation through List of Hashtables:

level = 1, bucket size= 7

```
1.    int func(int a, float b) {
2.          return a+b;
3.    }
4.
5.    void main () {
6.          int a, b, c, i;
7.          int e, f[10];
8.          a = 1;
9.          b = 2;
10.         c = func(a, b);
11.
12.         float d;
13.   }
```

| | |
|---|---|
| 0 | func: (int x float) ->int ,1 |
| 1 | |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

Prepared By: Sukarna Sarker

# Symbol Table implementation through List of Hashtables:

level = 1, bucket size= 7

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```

| | |
|---|---|
| 0 | func: (int x float) ->int ,1 |
| 1 | main: () -> void,1 |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

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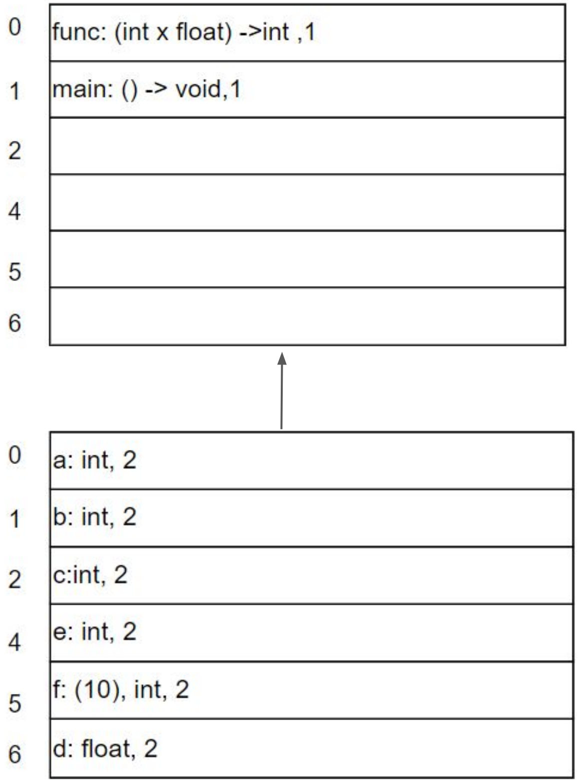
# Symbol Table implementation through List of Hashtables:

level = 2, bucket size= 7

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```



| | |
|---|---|
| 0 | func: (int x float) ->int ,1 |
| 1 | main: () -> void,1 |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

| | |
|---|---|
| 0 | a: int, 2 |
| 1 | b: int, 2 |
| 2 | c:int, 2 |
| 4 | e: int, 2 |
| 5 | f: (10), int, 2 |
| 6 | d: float, 2 |

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# Symbol Table implementation through List of Hashtables:

level = 1, bucket size= 7

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```

| | |
|---|---|
| 0 | func: (int x float) ->int ,1 |
| 1 | main: () -> void,1 |
| 2 | |
| 4 | |
| 5 | |
| 6 | |

Prepared By: Sukarna Sarker

# Symbol Table implementation through List of Hashtables:

level = 0, bucket size= 7

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```

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# Symbol Table implementation through Hashtables of List:

level = 0, bucket size= 12

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```

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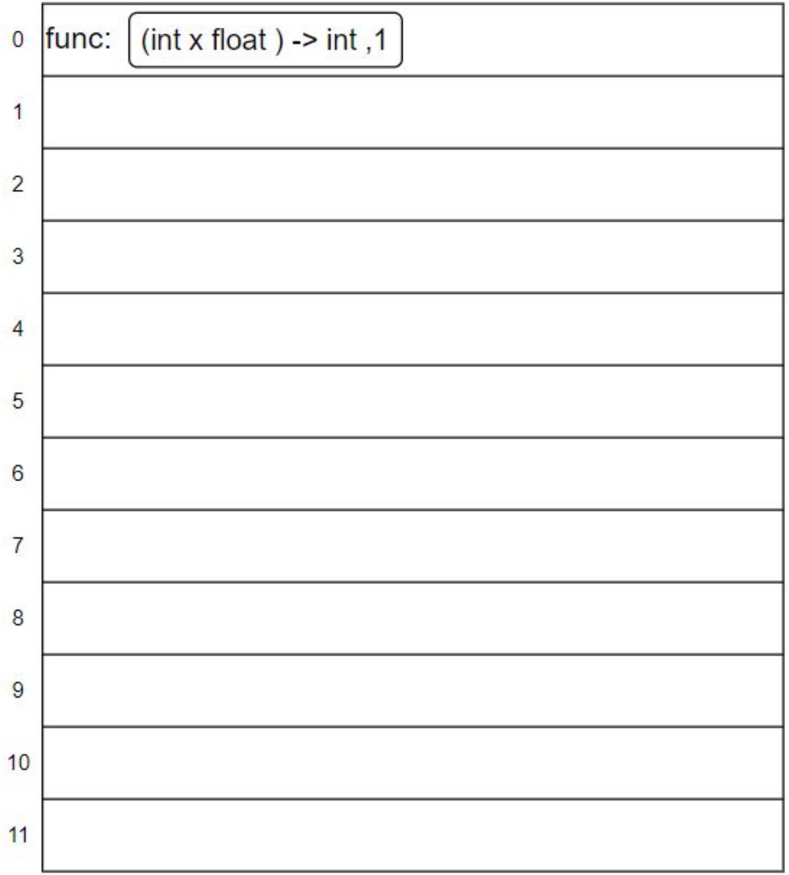
# Symbol Table implementation through Hashtables of list:

level = 1, bucket size= 12

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```



| | |
|---|---|
| 0 | func: (int x float ) -> int ,1 |
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |

# Symbol Table implementation through Hashtables of list:

level = 2, bucket size= 12

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```

| | | |
|---|---|---|
| 0 | func: | (int x float ) -> int ,1 |
| 1 | a: | int,2 |
| 2 | b: | float,2 |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |

Prepared By: Sukarna Sarker

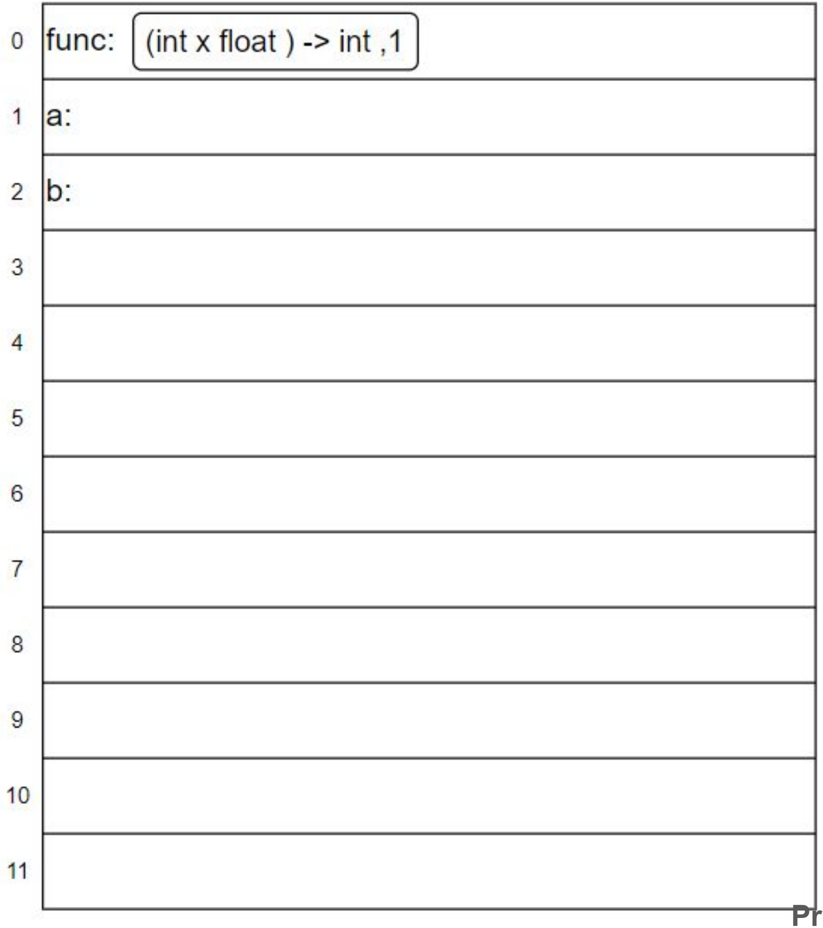
# Symbol Table implementation through Hashtables of list:

level = 1, bucket size= 12

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```



| | |
|---|---|
| 0 | func: (int x float ) -> int ,1 |
| 1 | a: |
| 2 | b: |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |

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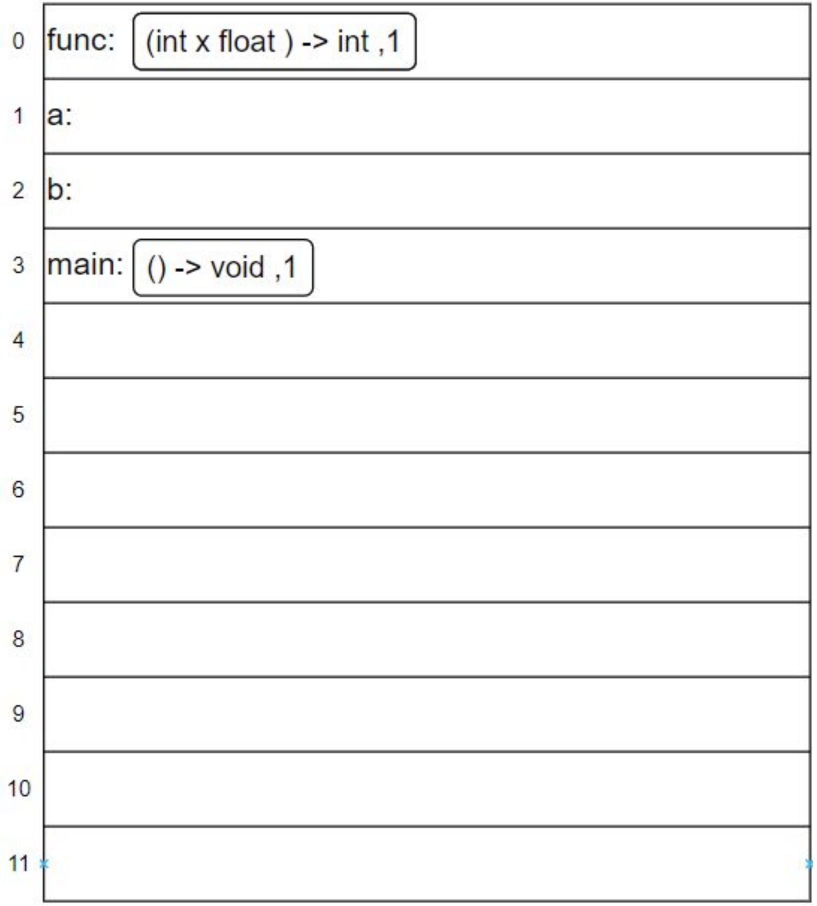
# Symbol Table implementation through Hashtables of list:

level = 1, bucket size= 12

```
1.    int func(int a, float b) {
2.          return a+b;
3.    }
4.
5.    void main () {
6.          int a, b, c, i;
7.          int e, f[10];
8.          a = 1;
9.          b = 2;
10.         c = func(a, b);
11.
12.         float d;
13.  }
```



| | | |
|---|---|---|
| 0 | func: | (int x float ) -> int ,1 |
| 1 | a: | |
| 2 | b: | |
| 3 | main: | () -> void ,1 |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |

Prepared By: Sukarna Sarker

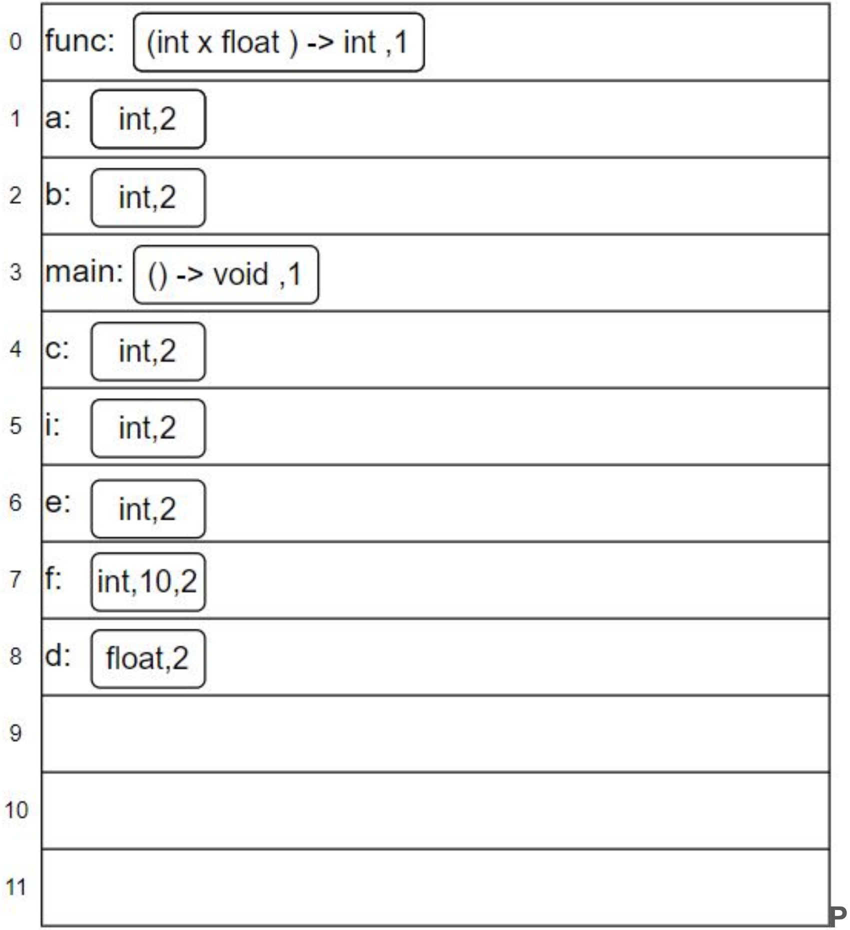
# Symbol Table implementation through Hashtables of list:

level = 2, bucket size= 12

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```



| | | |
|---|---|---|
| 0 | func: | (int x float ) -> int ,1 |
| 1 | a: | int,2 |
| 2 | b: | int,2 |
| 3 | main: | () -> void ,1 |
| 4 | c: | int,2 |
| 5 | i: | int,2 |
| 6 | e: | int,2 |
| 7 | f: | int,10,2 |
| 8 | d: | float,2 |
| 9 | | |
| 10 | | |
| 11 | | |

Prepared By: Sukarna Sarker

# Symbol Table implementation through Hashtables of list:

level = 1, bucket size= 12

```
int func(int a, float b) {
        return a+b;
}

void main () {
        int a, b, c, i;
        int e, f[10];
        a = 1;
        b = 2;
        c = func(a, b);

        float d;
}
```

| | |
|---|---|
| 0 | func: (int x float ) -> int ,1 |
| 1 | a: |
| 2 | b: |
| 3 | main: () -> void ,1 |
| 4 | c: |
| 5 | i: |
| 6 | e: |
| 7 | f: |
| 8 | d: |
| 9 | |
| 10 | |
| 11 | |

# Symbol Table implementation through Hashtables of list:

level = 0, bucket size= 12

```
int func(int a, float b) {
    return a+b;
}

void main () {
    int a, b, c, i;
    int e, f[10];
    a = 1;
    b = 2;
    c = func(a, b);

    float d;
}
```

| | |
|---|---|
| 0 | func: |
| 1 | a: |
| 2 | b: |
| 3 | main: |
| 4 | c: |
| 5 | i: |
| 6 | e: |
| 7 | f: |
| 8 | d: |
| 9 | |
| 10 | |
| 11 | |

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