

Integers

- `#include <stdint.h>`

`uint32_t`

`int32_t`

`uint16_t`

`int8_t`

- This helps with midsquare so you know exactly how big each int is.
- Take the middle 4 or 8 bits.

Chaining

- What is in the chain in a hashtable?

Bucket	Item
0	
1	
2	
3	
4	

Insert:

5, Apple
3, Orange
8, Banana
10, Coffee

Function Pointer Examples

```
typedef void(*DataVisitor)(void*);
```

```
typedef struct ListElement
{
    void *psData;
    struct ListElement *psNext;
} ListElement;
```

```
typedef struct List
{
    ListElement *psHead;
    DataVisitor pPrinter;
    DataVisitor pInitializer;
    DataVisitor pUpdater;
} List;
```

```
void printList(List* pList)
{
    ListElement *pItem;

    pItem = pList->psHead;
    while( pItem )
    {
        (*pList->pPrinter) (pItem->psData);

        pItem = pItem ->psNext;
    }
}
```

```
void printInt(void* pInt) // must match DataVisitor!    void()(void*)
{
    printf("%d", *(int*) pInt);
}

void printChar(void* pChar)
{
    printf("%c", *(char*) pChar);
}

int main()
{
    List sIntList;
    List sCharList;

    sIntList.pPrinter = printInt;
    sCharList.pPrinter = printChar;

    // add ints to sIntList
    // add chars to sCharList

    printList(&sIntList);
    printList(&sCharList);
}
```


