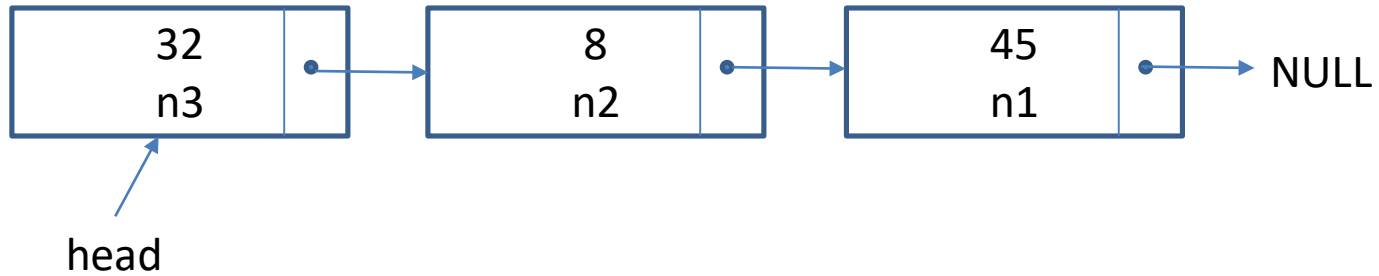# CSCI 112

# Programming with C
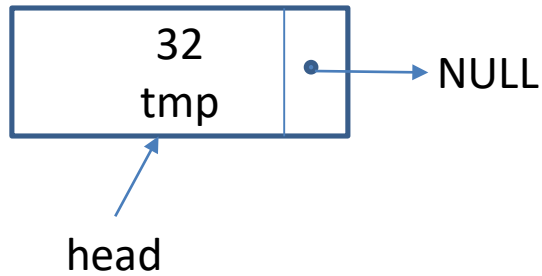
Linked Lists – Pgm 2

# Linked List
# linkedlist1.c



```
typedef struct node {
    int value;
    struct node *next;
} node_t;
```

# Linked List
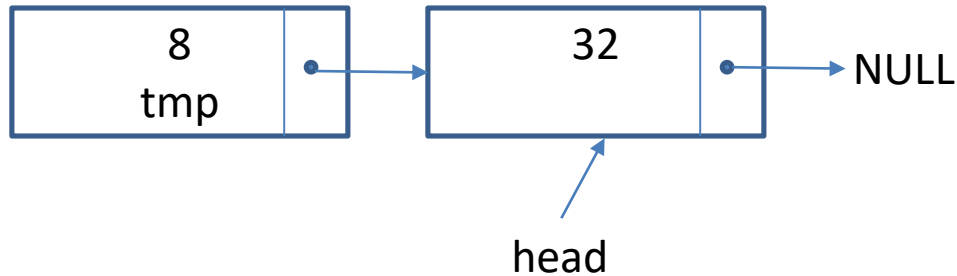# linkedlist2.c



```
tmp = create_new_node(32);
head = tmp;
```

```
typedef struct node {
    int value;
    struct node *next;
} node_t;
```
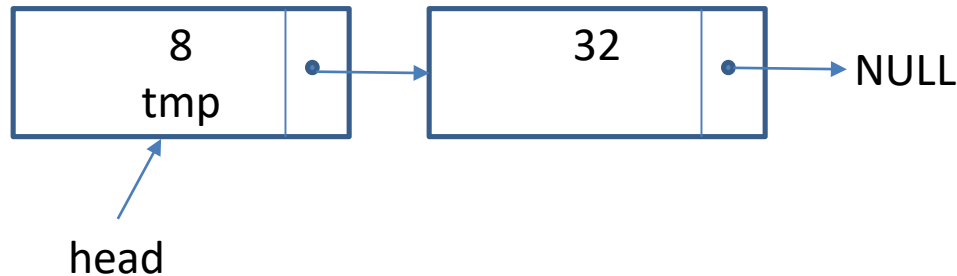
# Linked List
# linkedlist2.c

```
typedef struct node {
    int value;
 struct node *next;
} node_t;
```
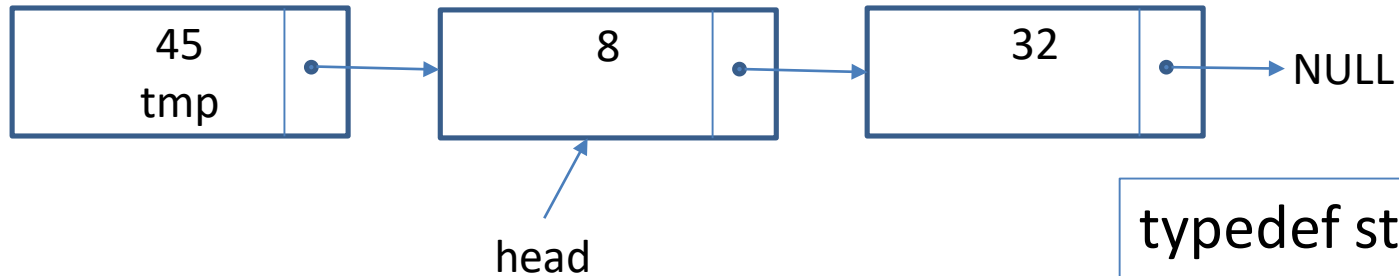
```
     8            →       32        → NULL
    tmp                            
                    head
```

tmp = create_new_node(8);
tmp->next = head;

```
     8            →       32        → NULL
    tmp                            
    head
```

head = tmp;

# Linked List
# linkedlist2.c



```
typedef struct node {
    int value;
 struct node *next;
} node_t;
```

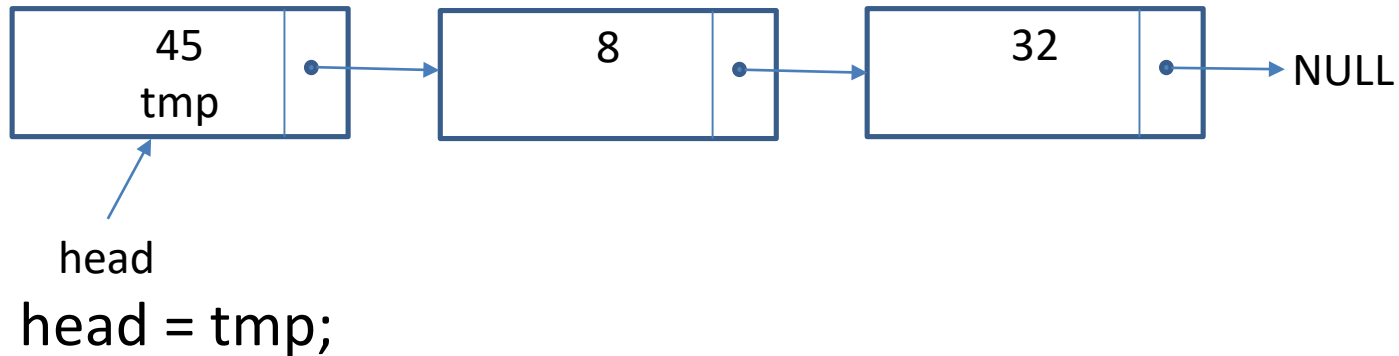tmp = create_new_node(45);
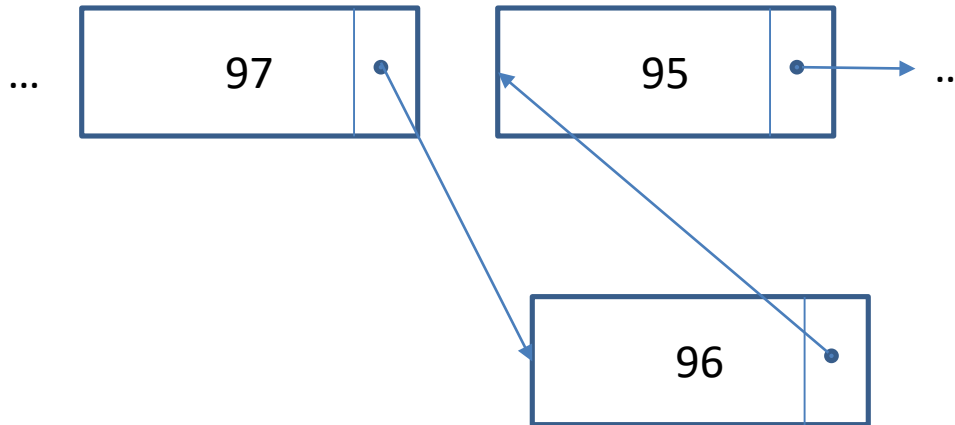tmp->next = head;

head = tmp;

# Add a node
# linkedlist6.c

```
… [ 97 | •]    [ 95 | •] → …

          [ 96 | •]
```

```
typedef struct node {
    int value;
 struct node *next;
} node_t;
```

# Linked List
# linkedlist1.c

```
           ┌─────────┬──┐      ┌─────────┬──┐      ┌─────────┬──┐
           │   32    │ ●├────→ │    8    │ ●├────→ │   45    │ ●├───→ NULL
           │   n3    │  │      │   n2    │  │      │   n1    │  │
           └─────────┴──┘      └─────────┴──┘      └─────────┴──┘
              ↑
            head
```

```
typedef struct node {
    int value;
  struct node *next;
} node_t;
```

# Linked List
# linkedlist2.c

```
      ┌──────────┬───┐
      │    32    │ ●─┼──→ NULL
      │   tmp    │   │
      └──────────┴───┘
          ↑
        head
```
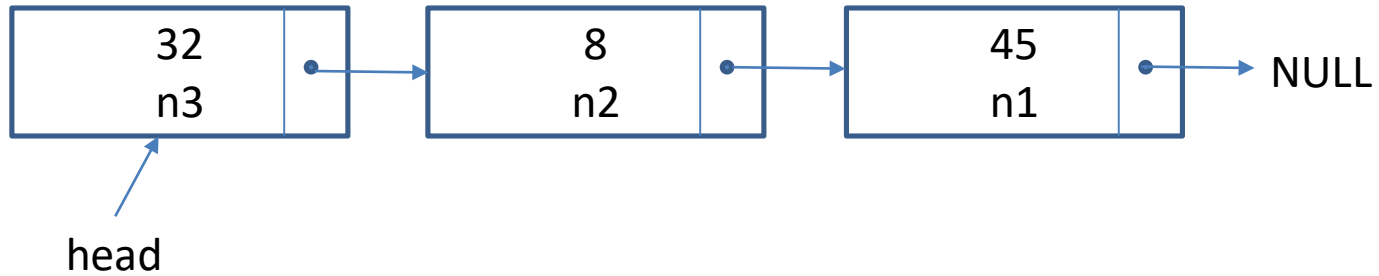
tmp = create_new_node(32);
head = tmp;

```
typedef struct node {
    int value;
  struct node *next;
} node_t;
```

# Linked List
# linkedlist2.c

```
typedef struct node {
    int value;
    struct node *next;
} node_t;
```
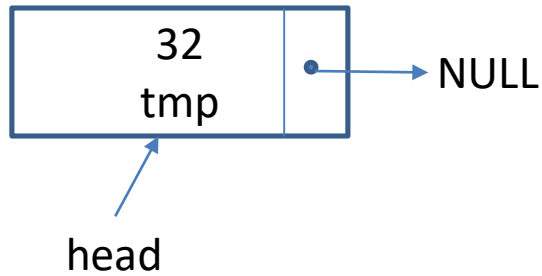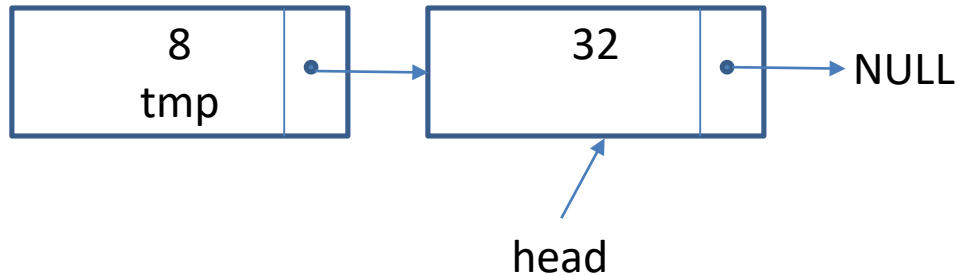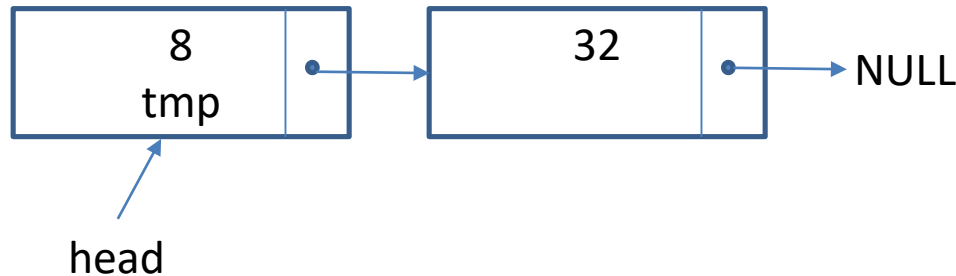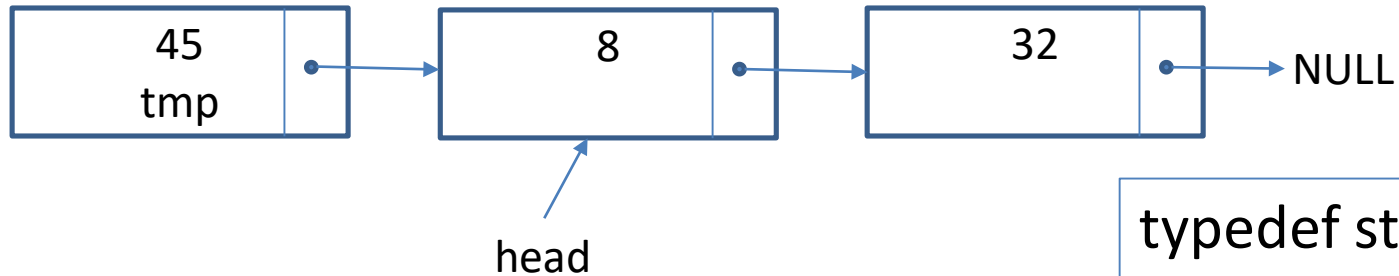
```
    8           →    32        → NULL
   tmp
                     ↑
                    head
```

tmp = create_new_node(8);
tmp->next = head;

```
    8           →    32        → NULL
   tmp
    ↑
   head
```

head = tmp;

# Linked List
# linkedlist2.c

45
tmp

8

32

NULL
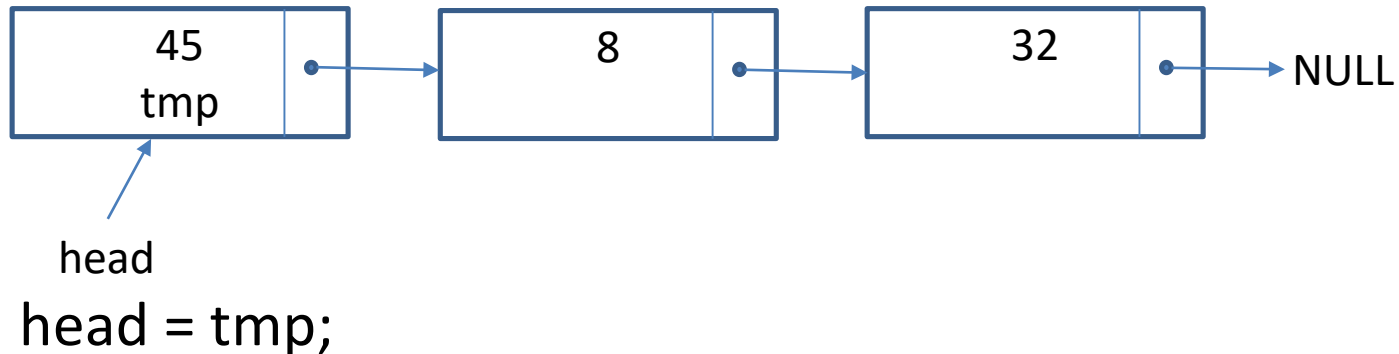
head
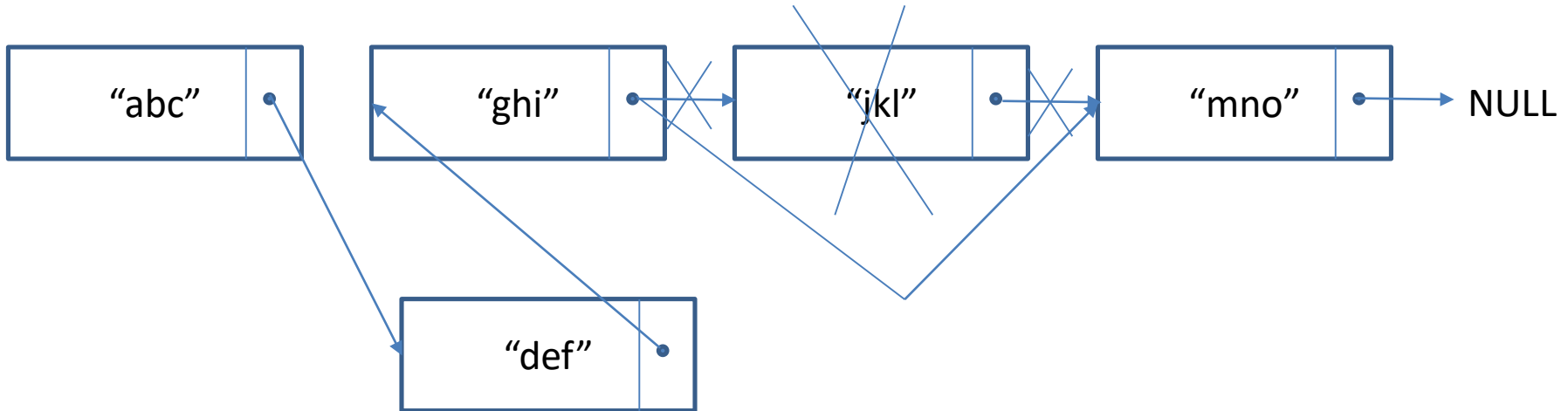
tmp = create_new_node(45);
tmp->next = head;

```
typedef struct node {
    int value;
 struct node *next;
} node_t;
```

45
tmp

8

32

NULL

head

head = tmp;

# Remove a node



```
typedef struct list_node_t {
    char alph[10];
    struct node_t *next;
} list_node_t;
```