week 5, continued


SAUCES
Hello
GABE
GSSO
STAFF

lunch this Fri 10/10, 1:15pm

cs50.harvard.edu/rsvp

no lecture on Mon 10/13

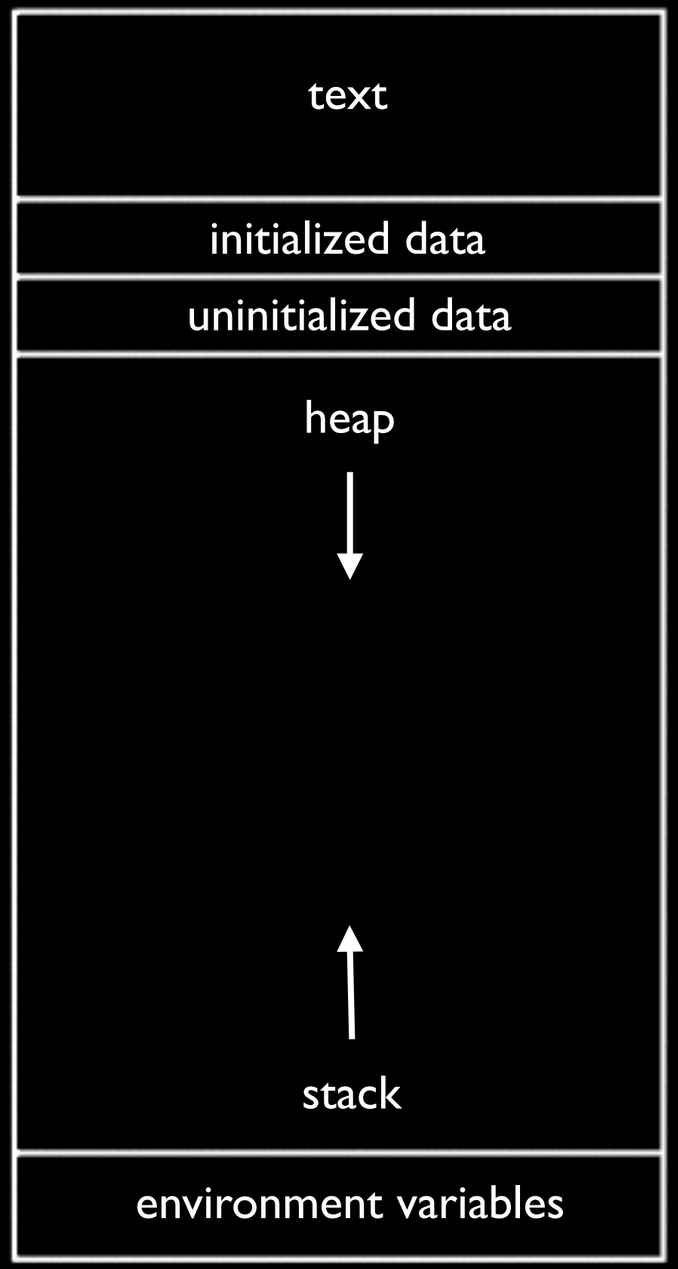
quiz 0 is Wed 10/15

cs50.harvard.edu/quizzes/0

review session on Mon 10/13

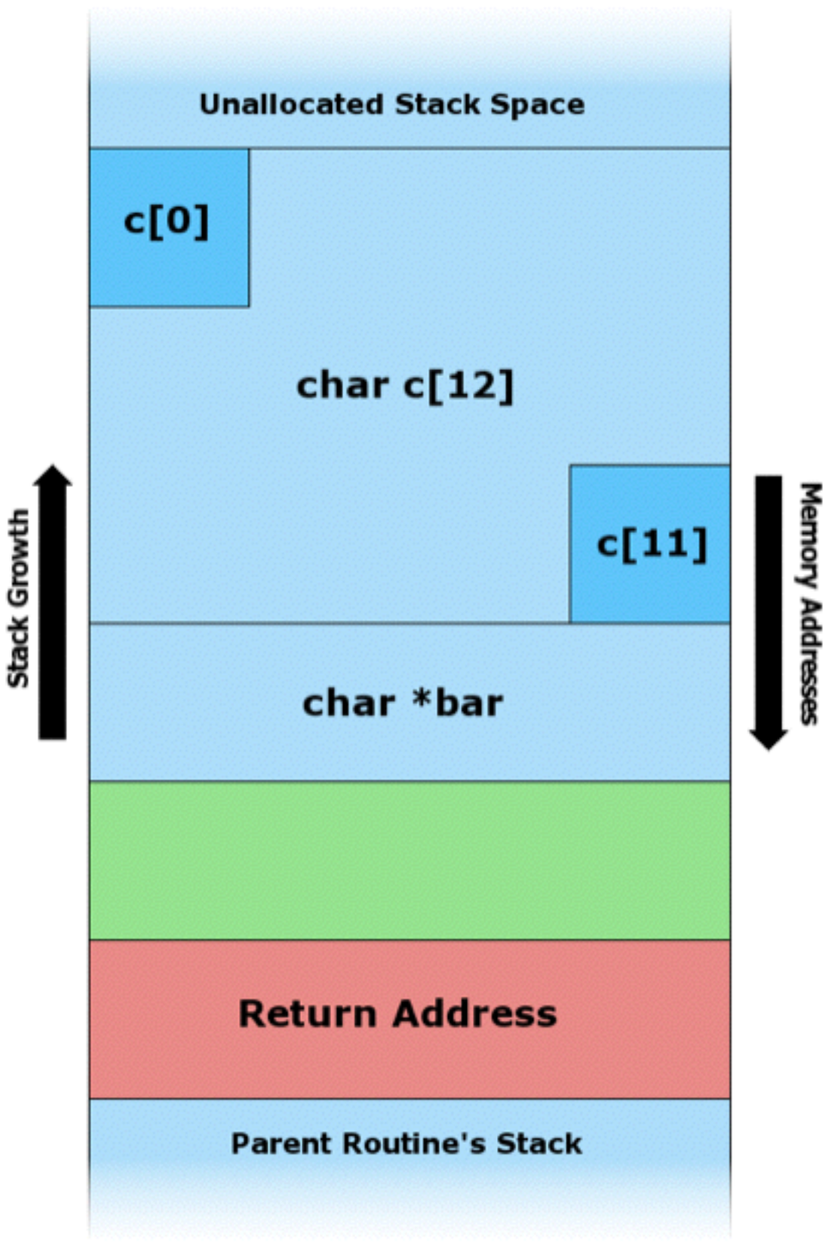
and sections

lecture on Fri 10/17

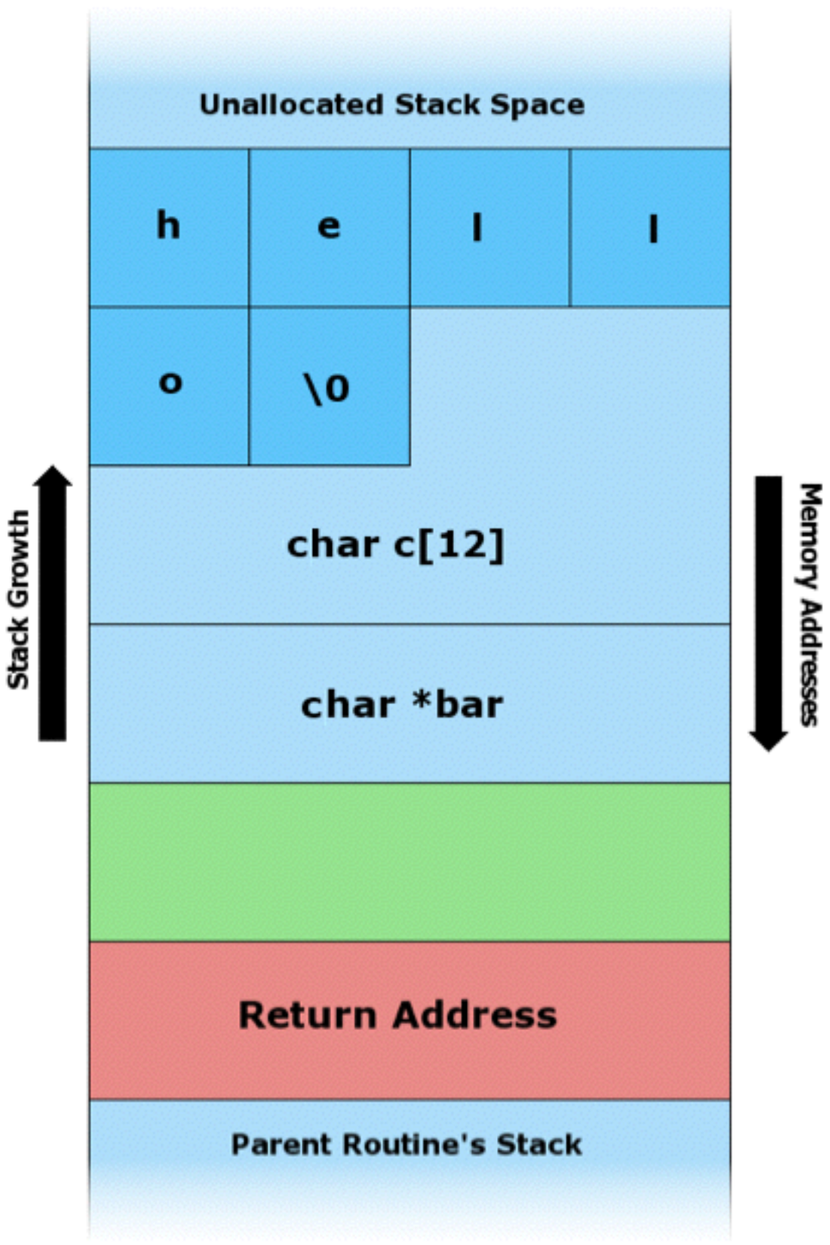

text
initialized data
uninitialized data
heap
stack
environment variables

```
#include <string.h>

void f(char* bar)
{
    char c[12];
    strncpy(c, bar, strlen(bar));
}

int main(int argc, char* argv[])
{
    f(argv[1]);
}
```

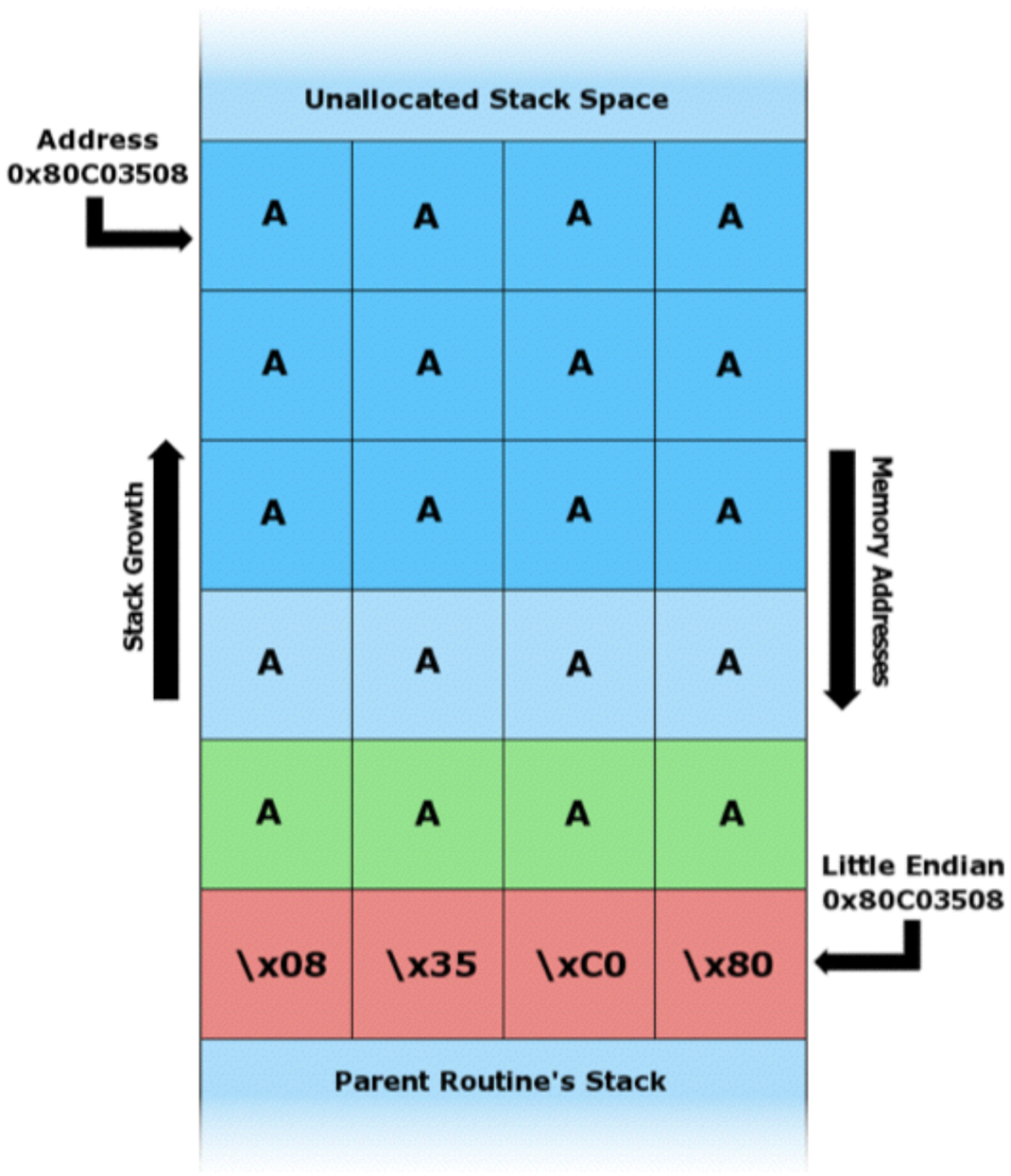
adapted from http://en.wikipedia.org/wiki/Stack_buffer_overflow



adapted from http://en.wikipedia.org/wiki/Stack_buffer_overflow



adapted from http://en.wikipedia.org/wiki/Stack_buffer_overflow



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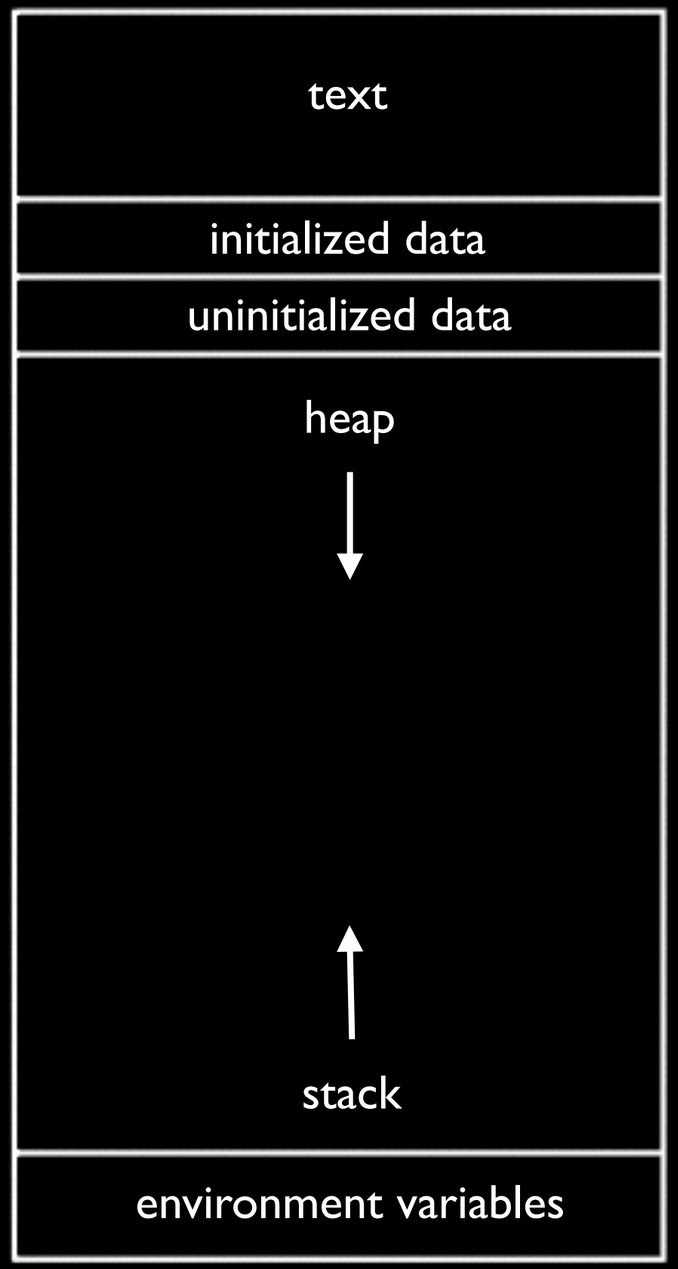
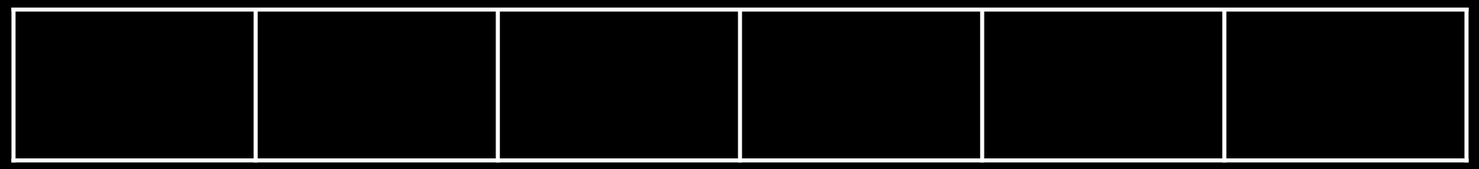
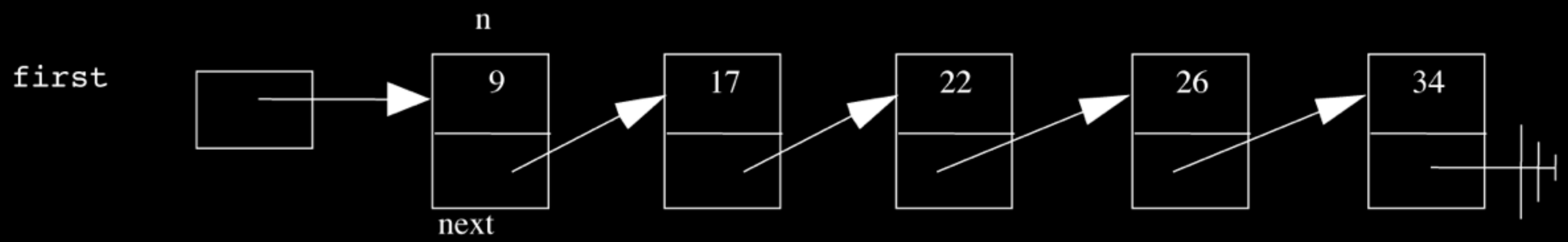
malloc


text
initialized data
uninitialized data
heap
stack
environment variables

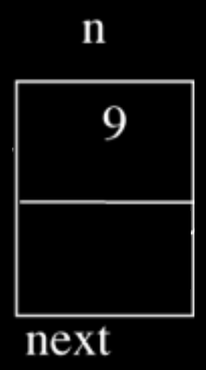
free

arrays





http://cs.calvin.edu/books/c++/ds/1e/


n
9
next

```
typedef struct
{
    string name;
    string house;
}
student;
```

```
typedef struct node
{
    int n;
    struct node* next;
}
node;
```

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    int n;
    struct node* next;
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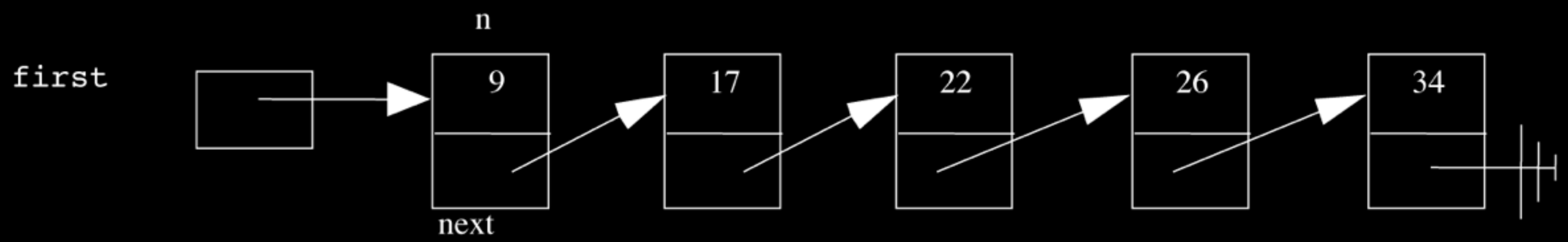
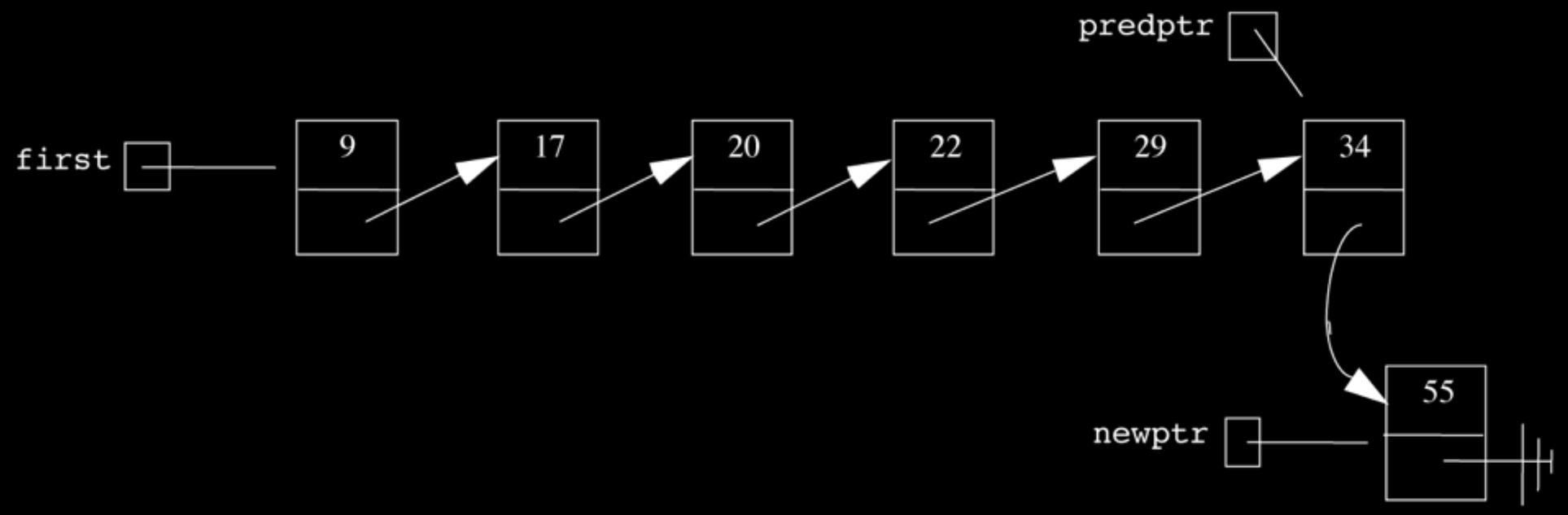


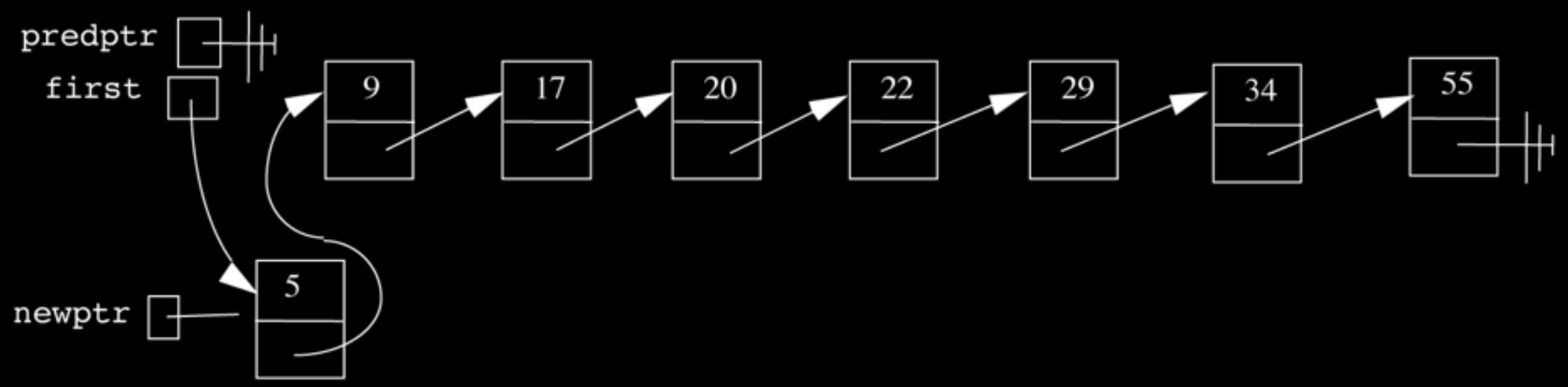
http://cs.calvin.edu/books/c++/ds/1e/

insert at tail



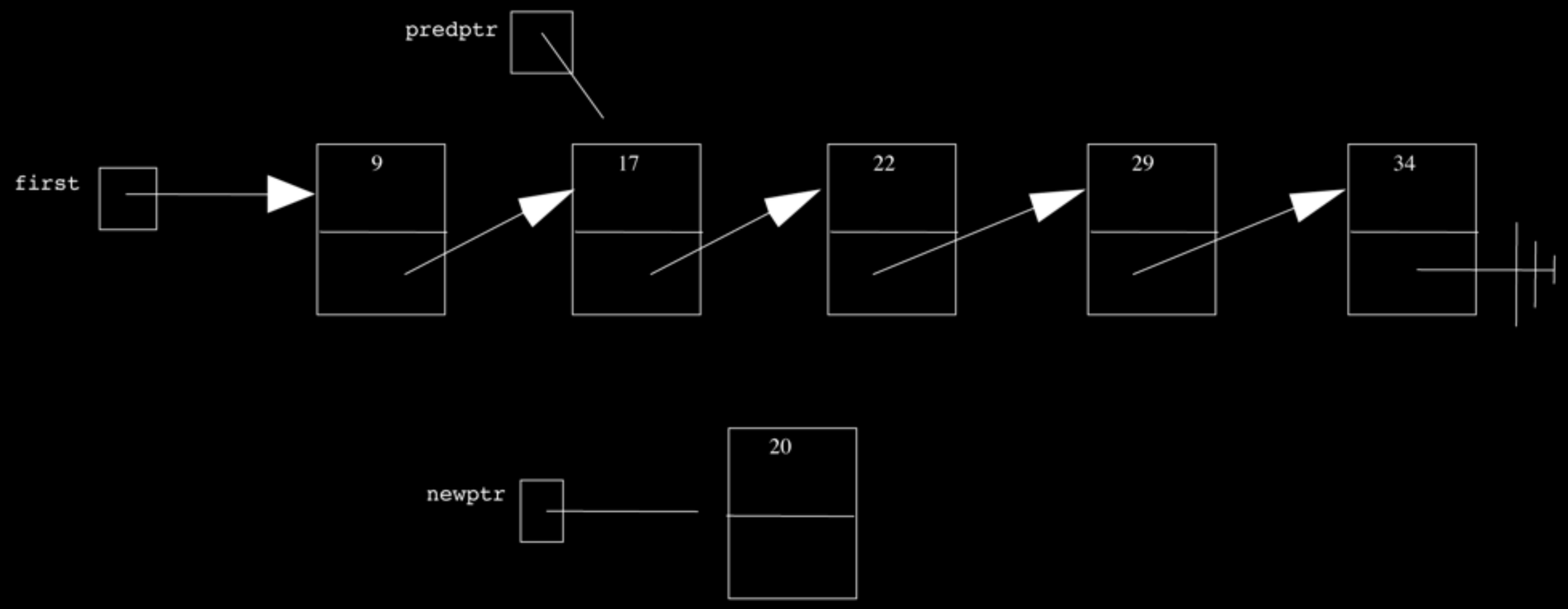
http://cs.calvin.edu/books/c++/ds/1e/

insert at head



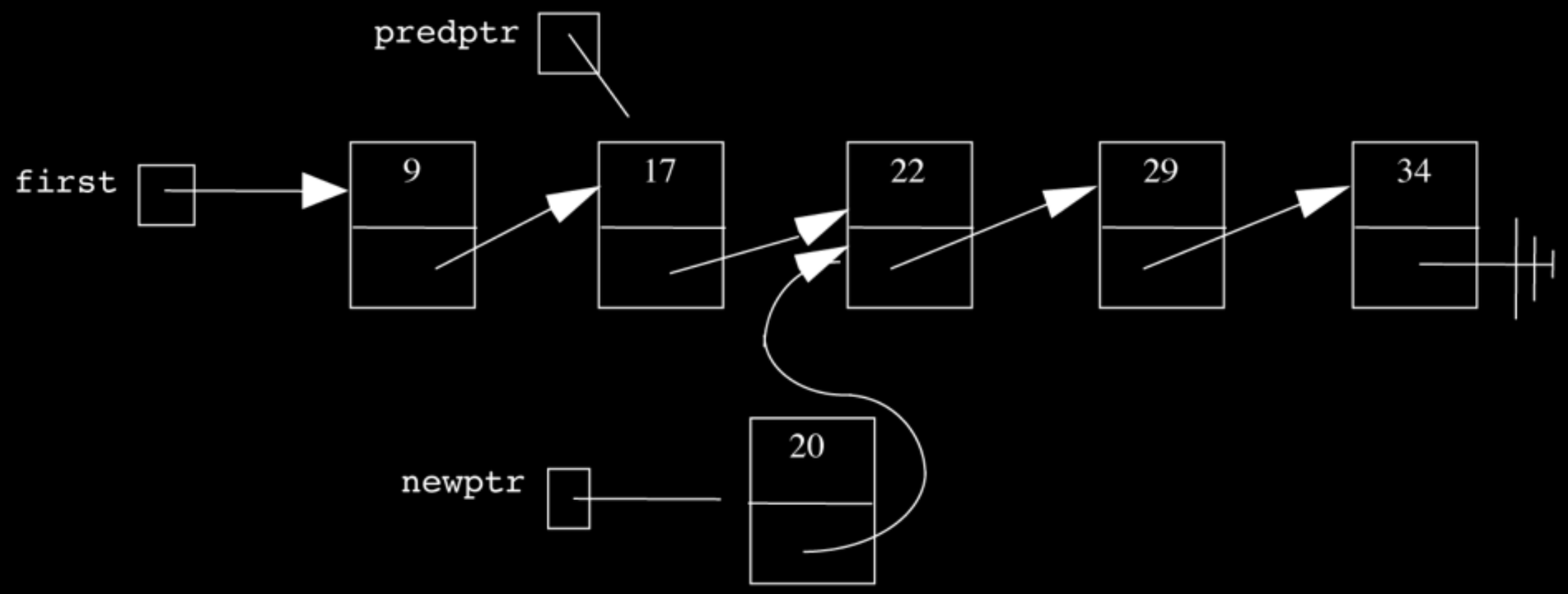
http://cs.calvin.edu/books/c++/ds/1e/

insert in middle



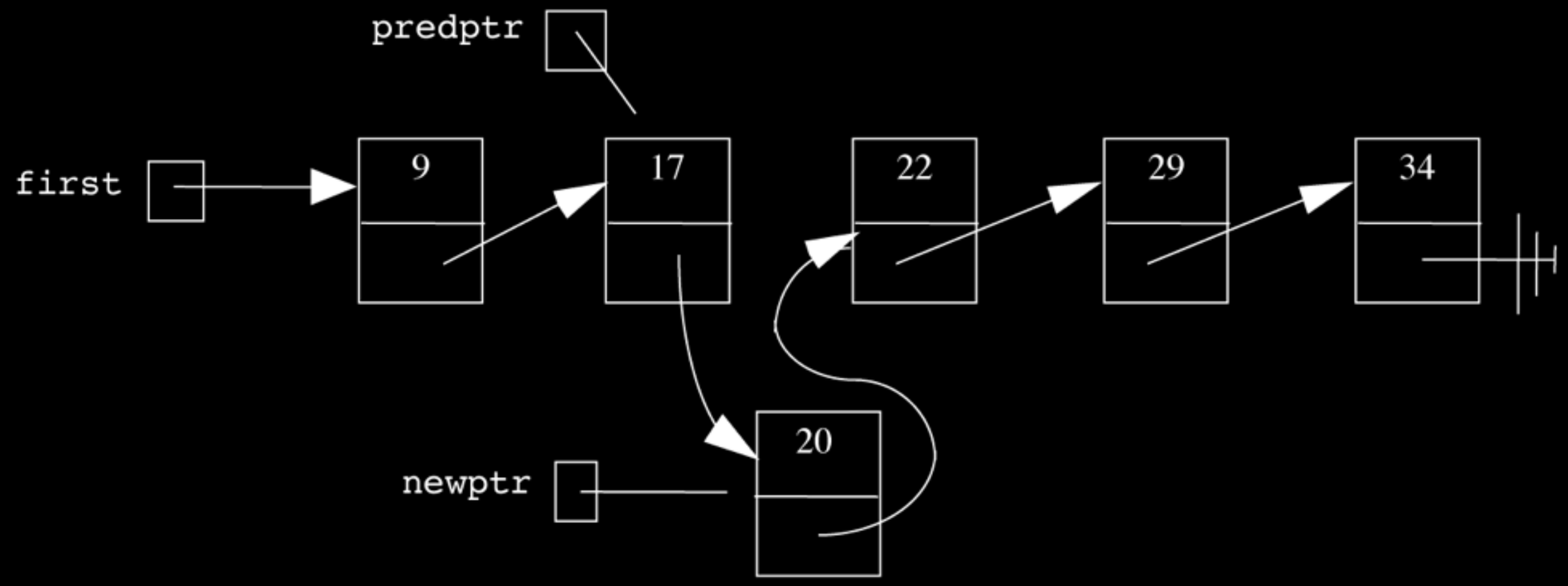
http://cs.calvin.edu/books/c++/ds/1e/

insert in middle



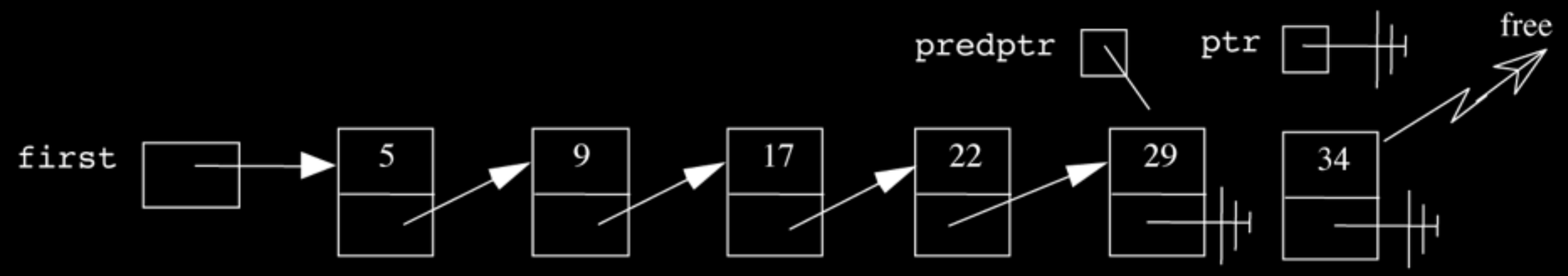
http://cs.calvin.edu/books/c++/ds/1e/

insert in middle



http://cs.calvin.edu/books/c++/ds/1e/

remove tail



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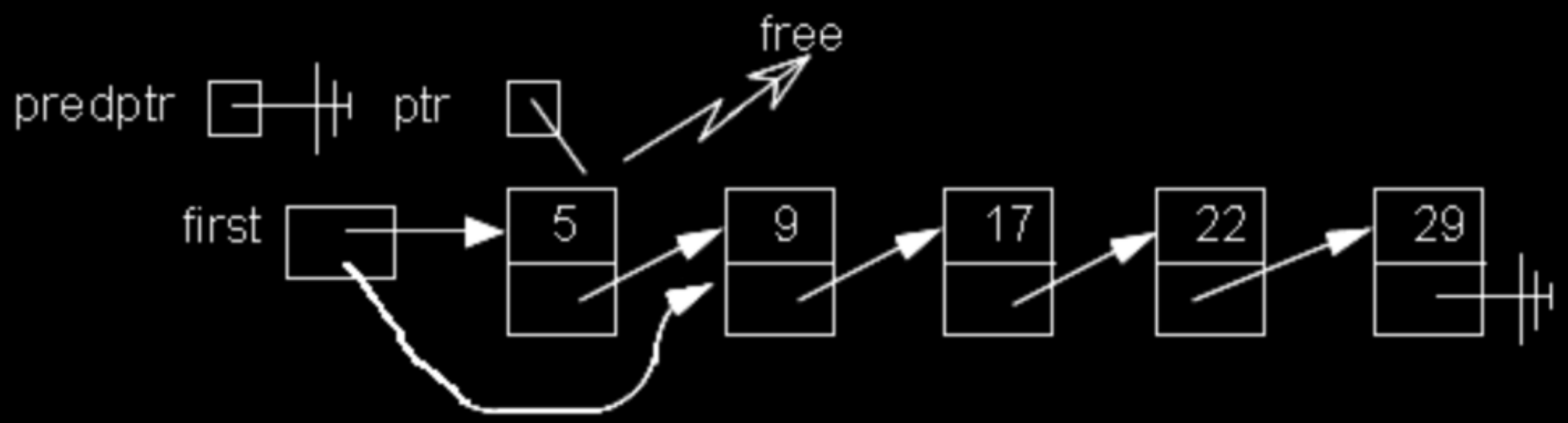
remove head



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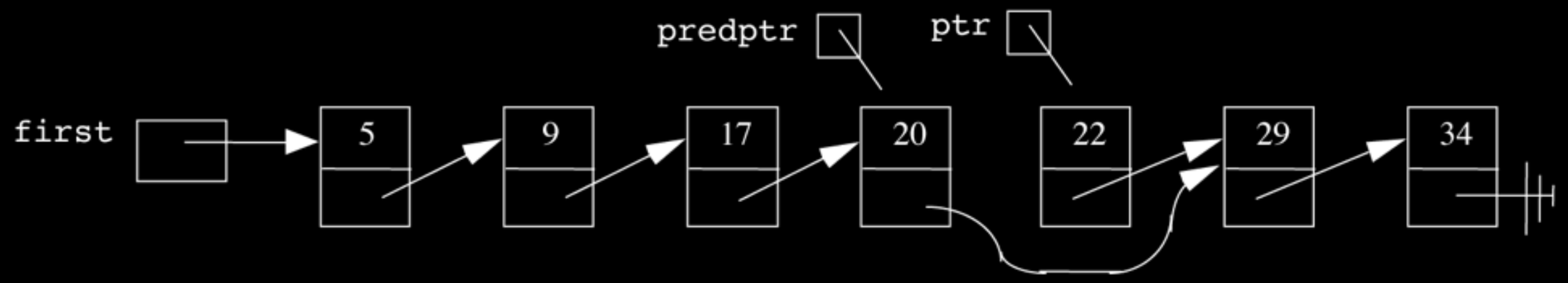
remove in middle



http://cs.calvin.edu/books/c++/ds/1e/

$O\ \Omega$

$O(1)$

to be continued...