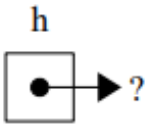
Vergara, Nyann Romijn H.
2020-00761

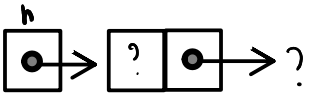
CMSC 21 - ST 2L
C- Exercise 6

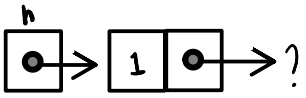
Pen and Paper Exercise

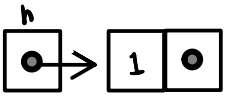
Now try it on your own and submit your answers to your lab instructor. Given the drawing convent discussed earlier, draw and the effect of each of the assignment statements in the given sample code.

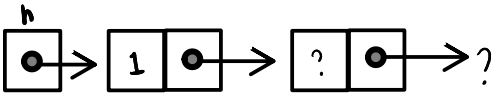
```
//Sample code for linked list
#include<stdio.h>

typedef struct nodetag{
  int x;
  struct nodetag *next;
}node;

int main(){
  node *h, *temp;

  //first node
  h=(node *)malloc(sizeof(node));


  h->x=1;


  h->next=NULL;


  //second node
  h->next=(node *)malloc(sizeof(node));


  h->next->x=2;


  h->next->next=NULL;


  //third node
  h->next->next=(node *)malloc(sizeof(node));


  h->next->next->x=3;


  h->next->next->next=NULL;
```

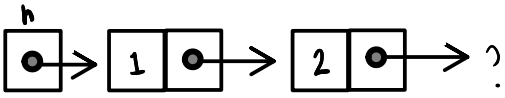


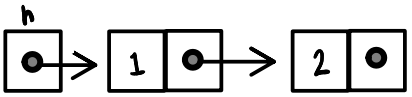


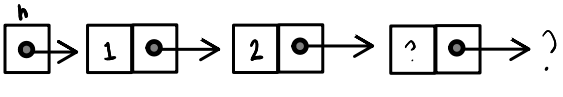


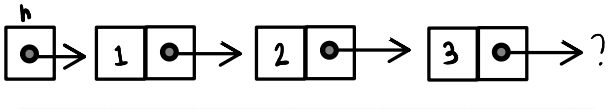


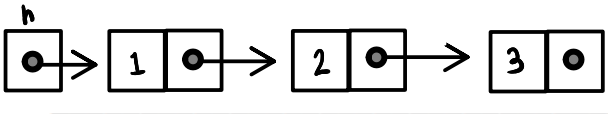






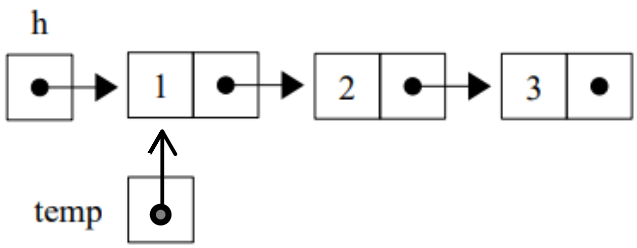




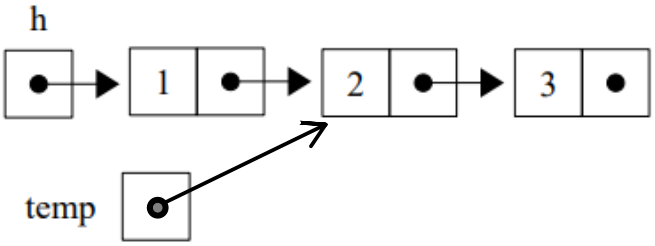


```
//display the contents of the linked list

temp=h;
while(temp!=NULL){
    printf("%3i ",temp->x);
    temp=temp->next;
}
print("\n");
```

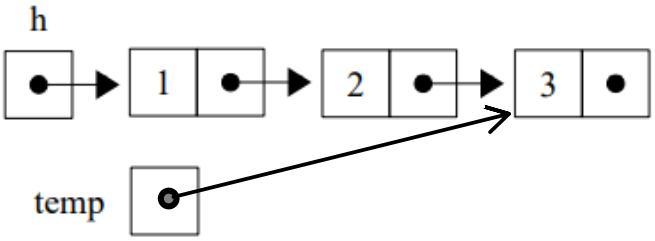
step 0: temp=h;



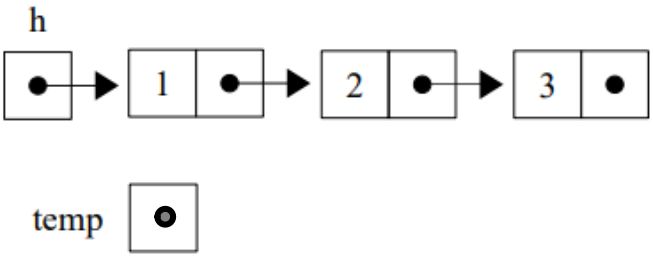
step 1: after (1st) temp=temp->next;



step 2: after (2nd) temp=temp->next;

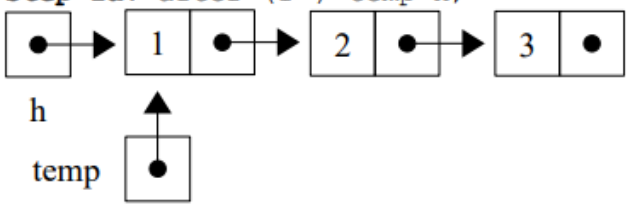


step 3:after (3rd) temp = temp->next;

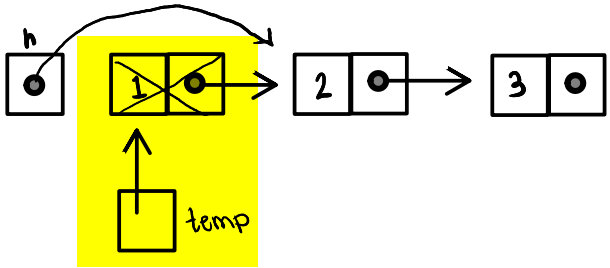



```
  //deallocation

  while(h!=NULL){
      temp=h;
      h=h->next;
      free(temp);
  }

  return(0);

}//end of main
```

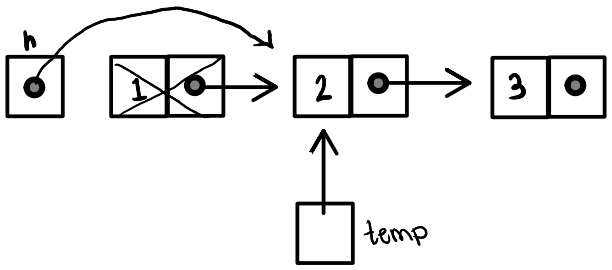
step 1a: after (1st) temp=h;



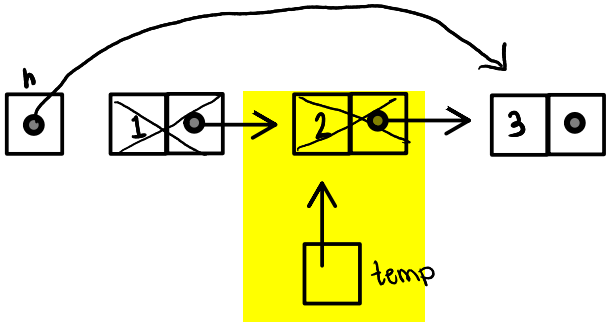
step 1b: after (1st) h=h->next;
free(temp);



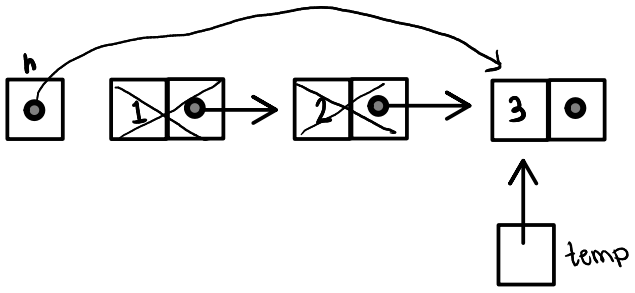
step 2a: after (2nd) temp=h;



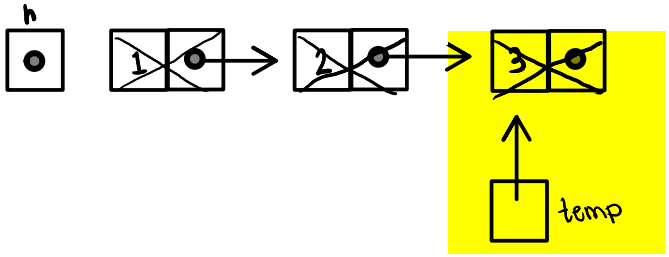
step 2b: after (2nd) h=h->next;
free(temp);



step 3a: after (3rd) temp=h;



step 3b: after (3rd) h=h->next;
free(temp);



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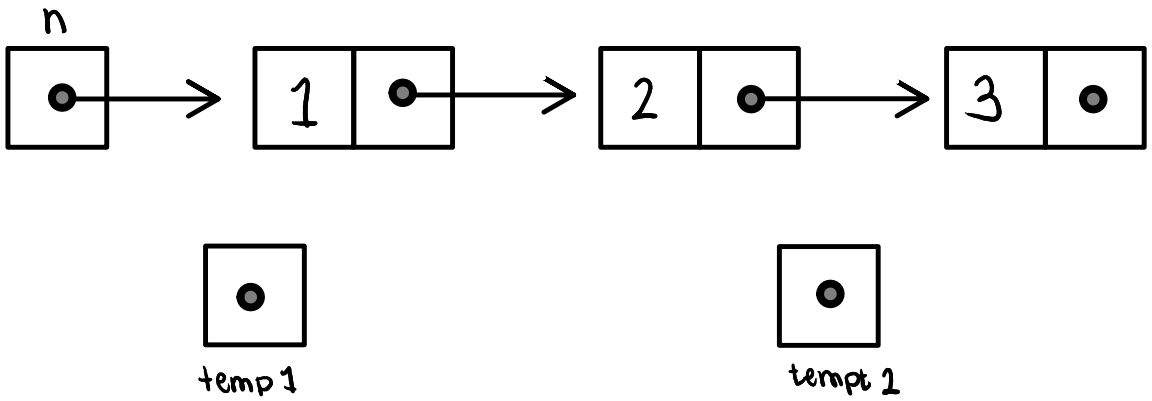
```
node *temple1=NULL; *temp2=NULL;
while (h!=NULL){
        temp1=h;
        h=h->next;
        temp1->next=temp2;
        temp2=temp1;
}
h=temp2;
```



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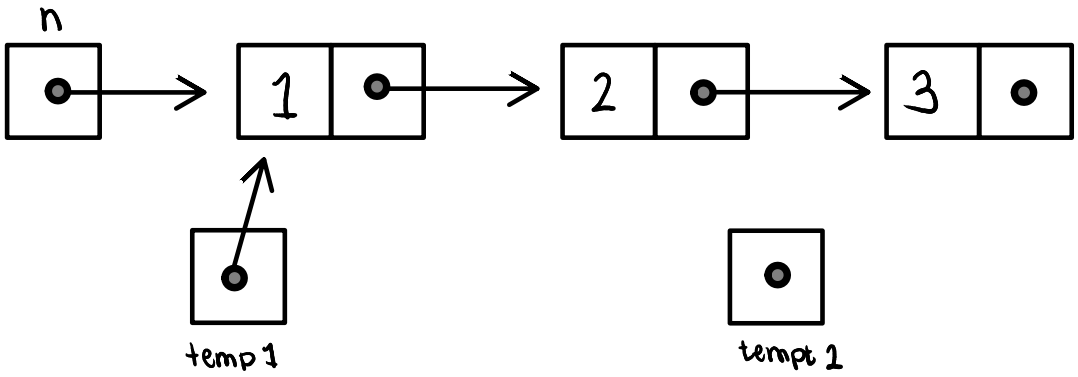

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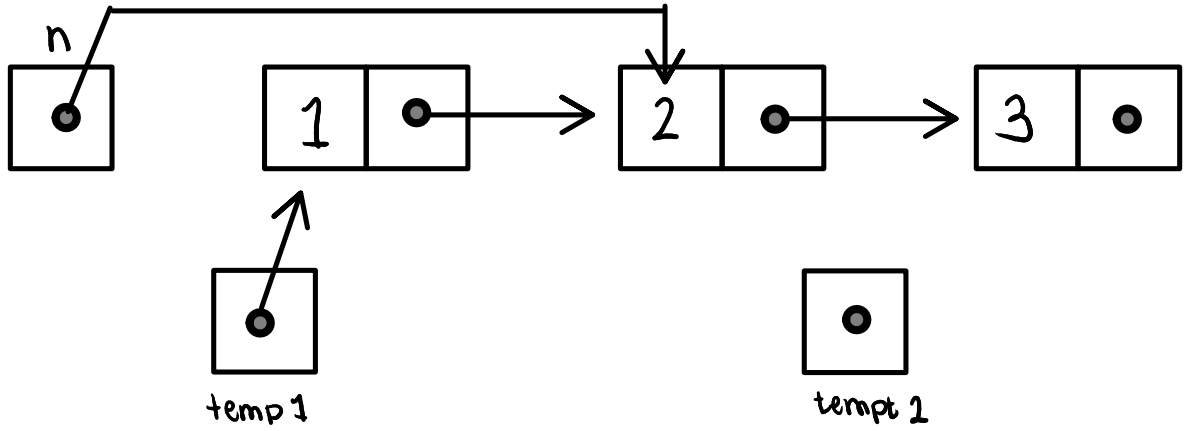

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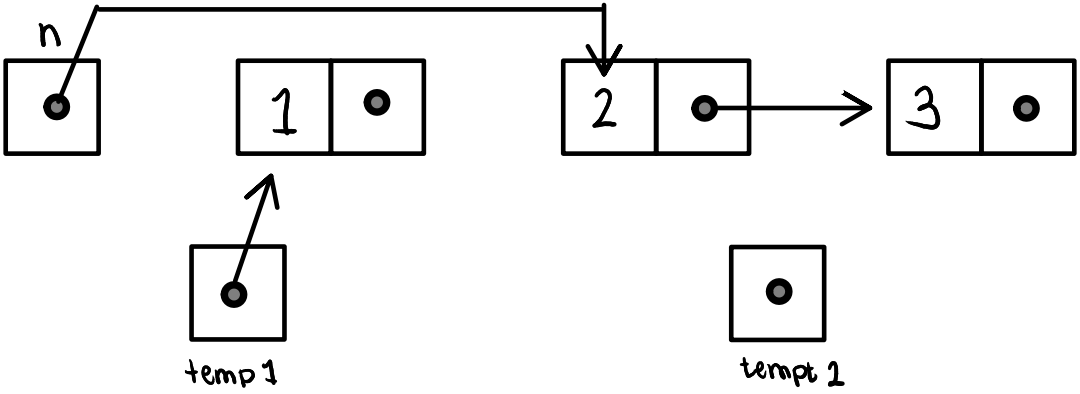

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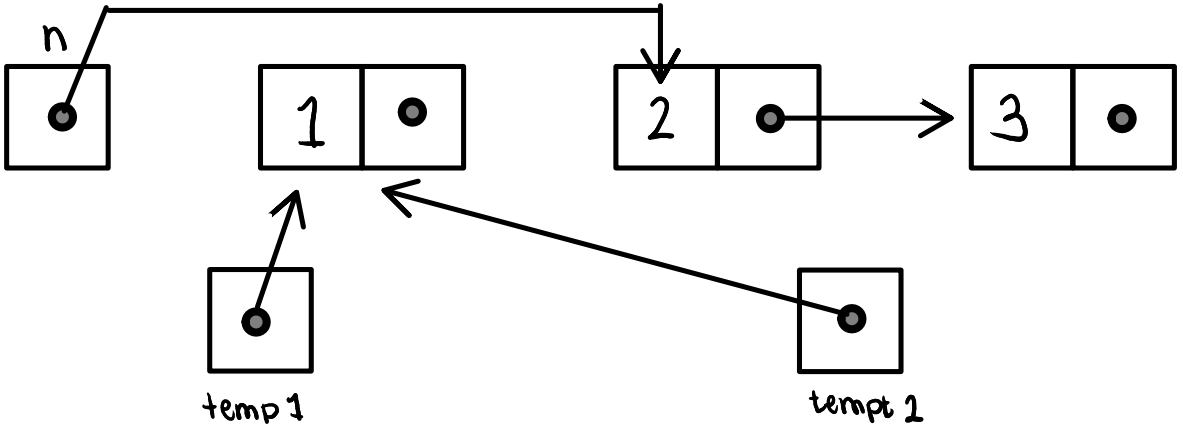

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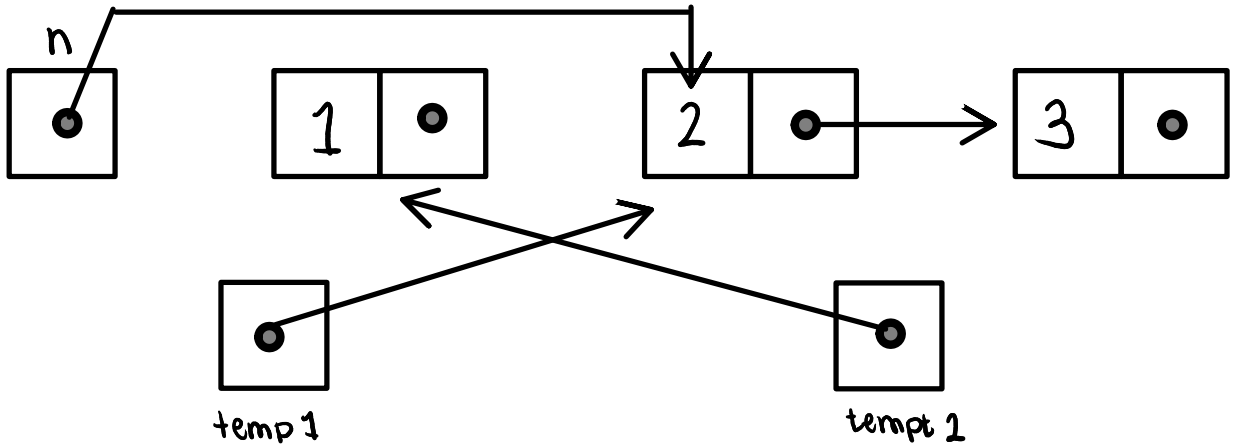

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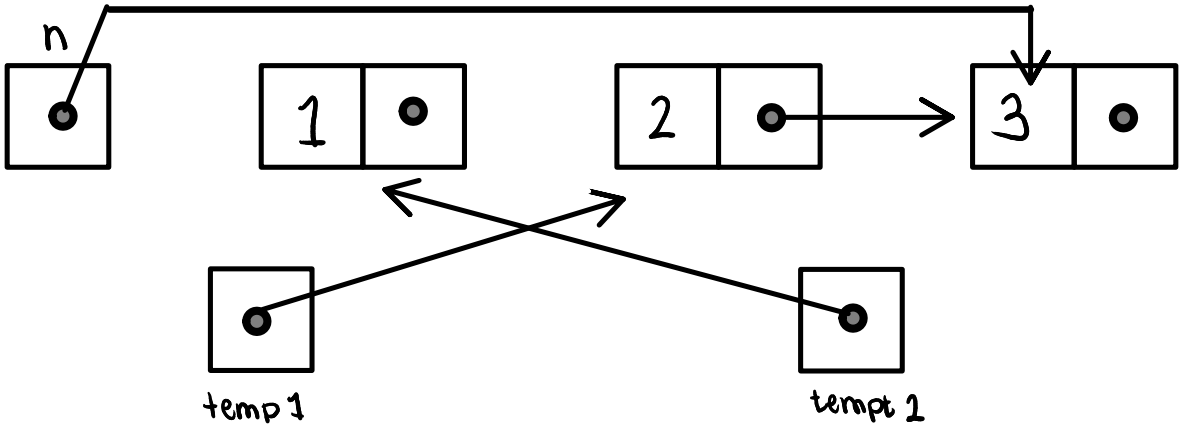

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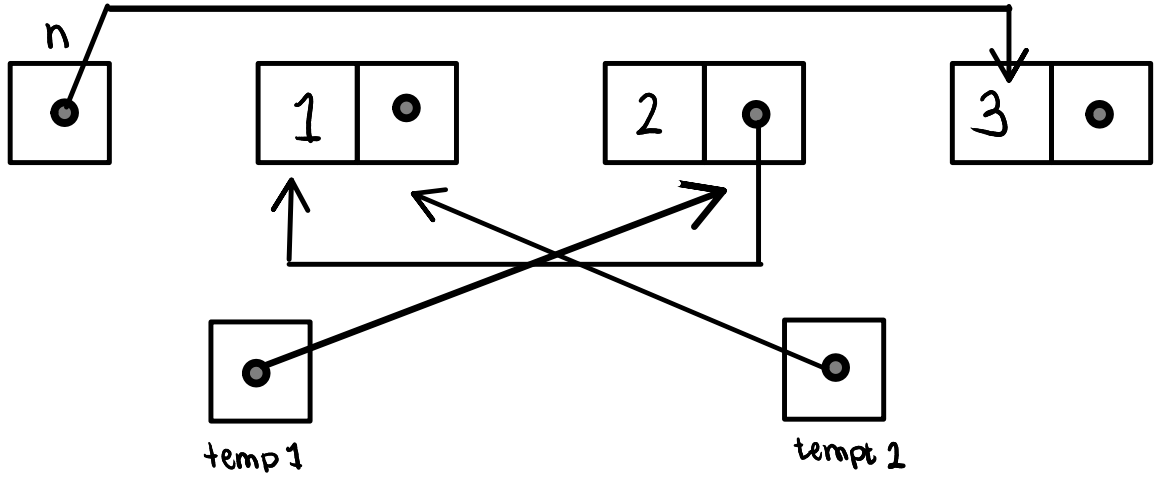

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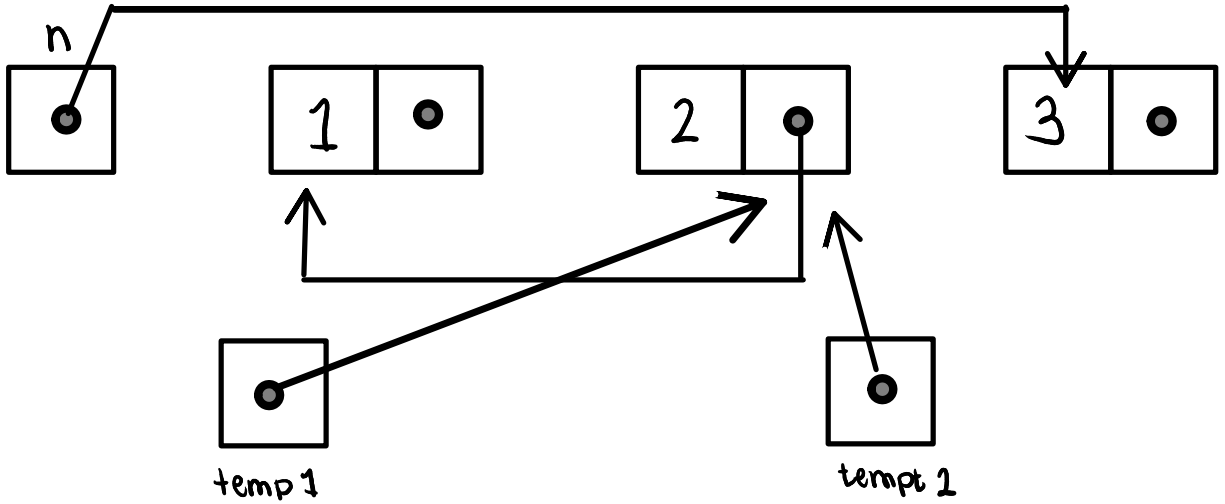

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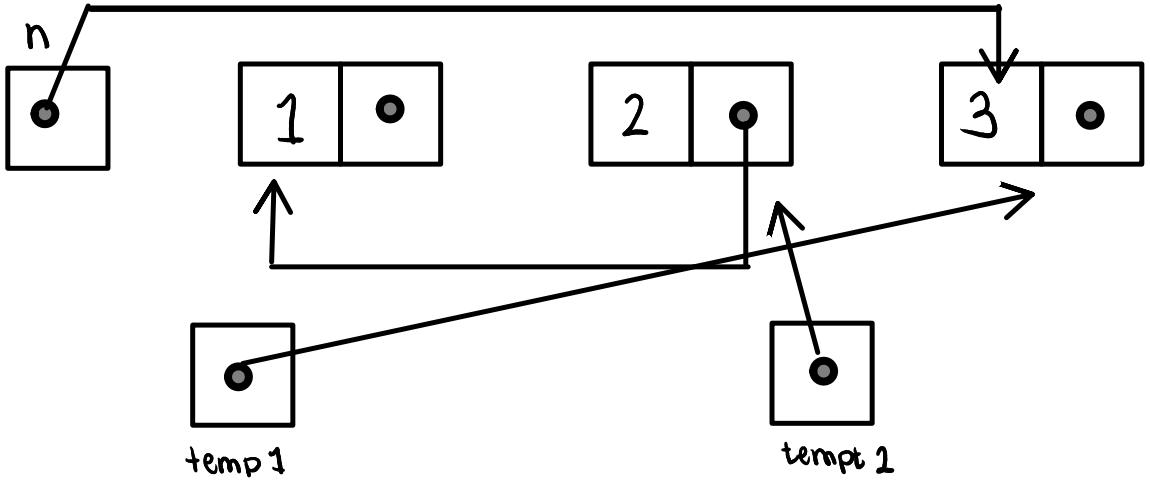

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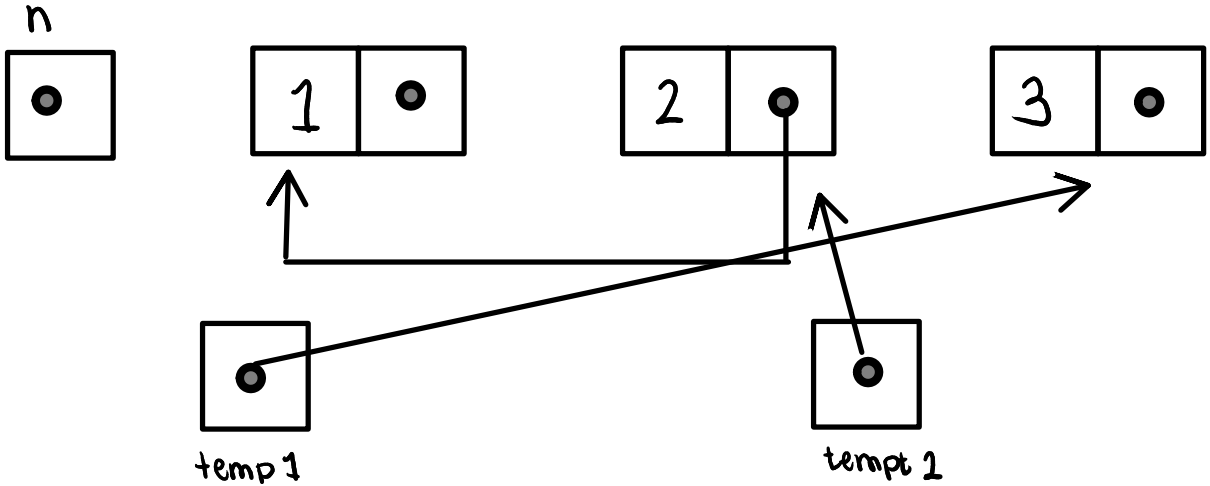

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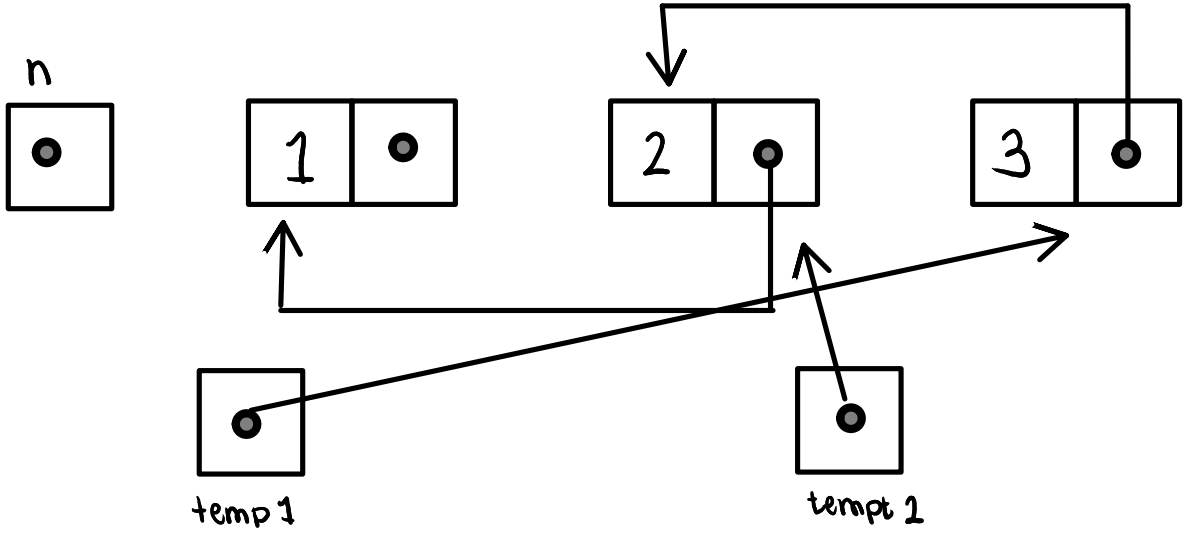

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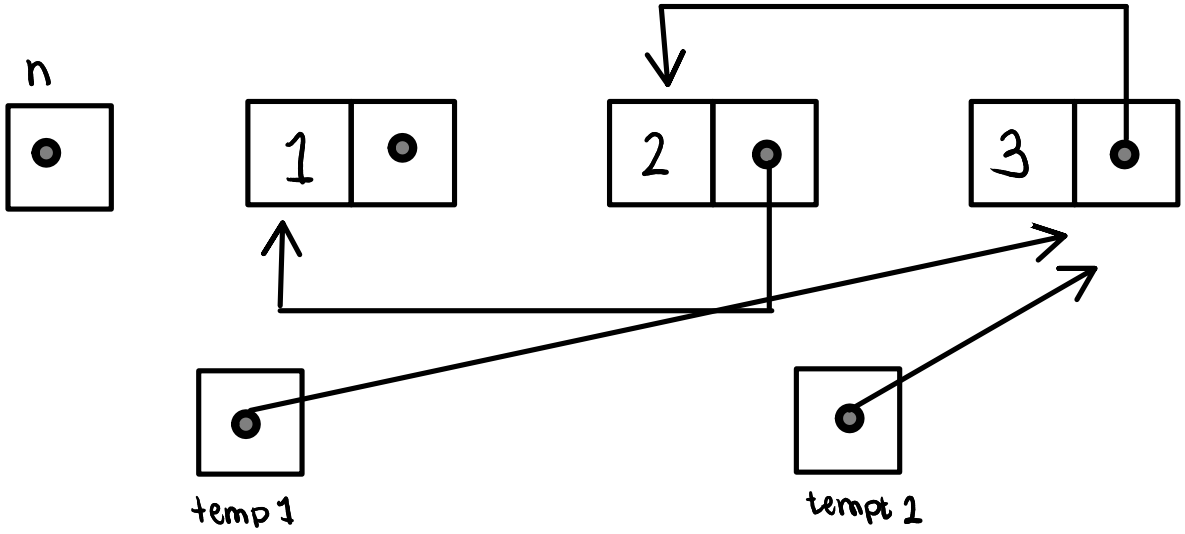

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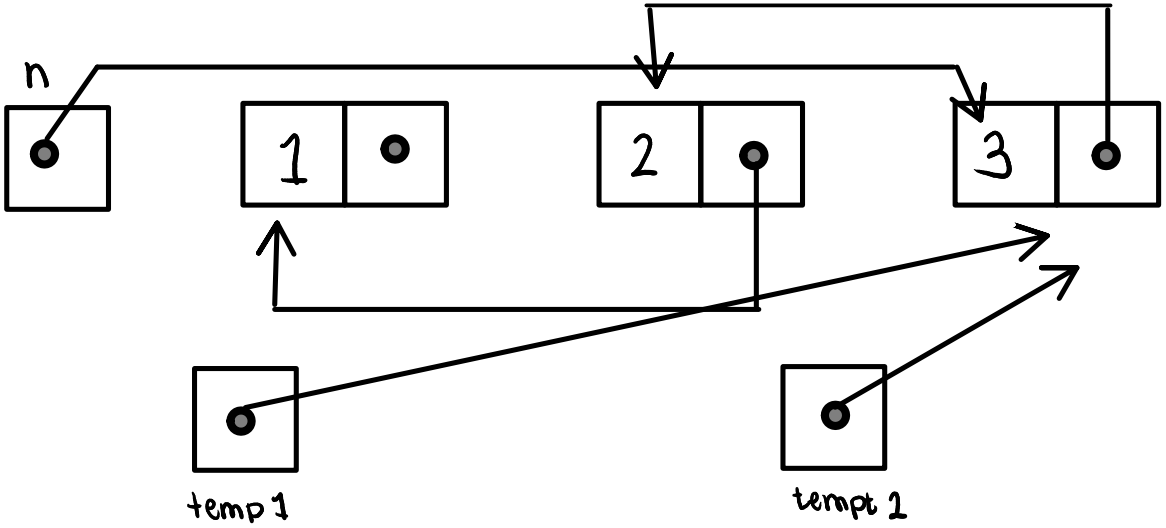

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