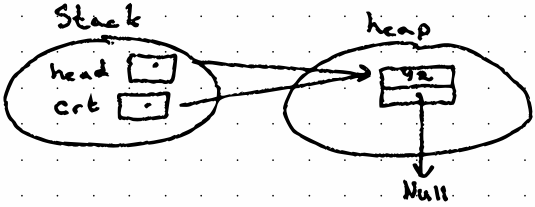
Edwin (Shang) Sparks
10-6-21

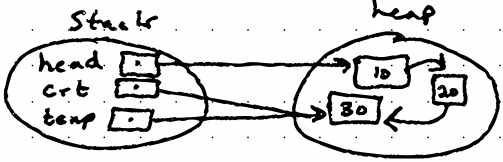
Lab 07 - Linked List / A List

1)



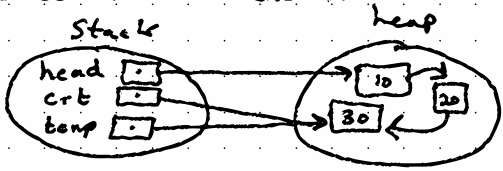
2)

Code ScreenShot at end...



3)

Code ScreenShot at end...



Part 1:

Execute | Share main.c STDIN

```c
/* The integer member of struct Node is named vertNum (for vertex number) b/c
in the next program it will be used to store the number of a graph vertex. In
this warmup exercise it does not mean anything.*/
#include <stdio.h>
#include <stdlib.h>
// A structure to represent each node of a linked list
struct Node {
    int vertNum;
    struct Node* next;
};
// A utility function to dynamically create a new node for the linked list
// Returns a pointer to the new node
struct Node* createNewNode(int number) {
    struct Node* pNewNode = (struct Node*) malloc(
                                sizeof(struct Node));
    pNewNode->vertNum = number;
    pNewNode->next = NULL;      //initially unconnected
    return pNewNode;
}
void printlist(struct Node *crt){
    while(crt){
        printf("%d --> ", crt->vertNum);
        crt=crt->next;
    }
}
int main() {
    struct Node* head;  //pointer to the head of the list
    struct Node* crt;   //pointer to the current node in the list
    struct Node* temp;

    //This is the first node-DO NOT CHANGE head until the list is deleted!
    head = createNewNode(10);
    crt = head;

    temp=createNewNode(20);
    head->next=temp;
    crt=head->next;

    temp=createNewNode(30);
    head->next->next=temp;
    crt=head->next->next;

    crt=head;
    printlist(crt);
}

```

Result

```
$gcc -o main *.c -lm
$main
10 --> 20 --> 30 -->
```