Name : _____ CS 100 Quiz #10

Give the output of the C program shown below when run with the command **./a.out 13 24 52**

```
#include <stdio.h>
#include <stdlib.h>
typedef struct node {
        char ch;
        struct node *next;
} Node;
int main(int argc, char *argv[]) {
    Node a, b, c, d;
    a.ch = 'T'; a.next = &b;
    b.ch = 'I'; b.next = &c;
    c.ch = 'D'; c.next = &d;
    d.ch = 'E'; d.next = &a;
    Node *ptr = &a;
    for (int a=1; a<argc; a++) {
        int x = atoi(argv[a]);
        int y = x / 10;
        int z = x % 10;
        for (int a=0; a<y; a++)
            ptr = ptr->next;
        for (int b=0; b<z; b++)
            printf("%c", ptr->ch);
        printf("\n");
    }
    return 0;
}
```

Give the output of the C program shown below when run with the command **./a.out ABC**

```
typedef struct node {
    char val;
    struct node *next;
} Node;
Node *function(Node *head, char ch) {
    Node *temp1 = malloc( sizeof(Node) );
        temp1->val = ch; temp1->next = head;
    Node *ptr = temp1;
    while (ptr->next) ptr = ptr->next;
    Node *temp2 = malloc( sizeof(Node) );
        temp2->val = ch; temp2->next = NULL;
    ptr->next = temp2;
    return temp1;
}
int main(int argc, char *argv[]) {
    Node *ptr = NULL;
    for (int a=0; a<strlen(argv[1]); a++)
        ptr = function(ptr, argv[1][a]);
    while (ptr){
        printf("%c", ptr->val);
        ptr = ptr->next;
    }
    printf("\n");
    return 0;
}
```