Task 1:

#include <iostream>

using namespace std;

struct ListRec{

char value;

ListRec\* next;

};

int main(){

struct ListRec \*head = nullptr, \*loc1, \*loc2, \*loc3;

head = loc1;

loc1->value = 'A';

loc1->next = loc2;

loc2->value = 'C';

loc2->next = loc3;

loc3->value = 'M';

loc3->value = NULL;

return 0;

}

Task 2:

#include <iostream>

using namespace std;

struct ListRec{

char value;

ListRec\* next;

};

void print(ListRec\* listHead){

while (listHead->next != NULL){

cout << " " << listHead->value;

listHead = listHead->next;

}

cout << " " << listHead->value << endl;

}

int main(){

struct ListRec \*head = nullptr, \*loc1, \*loc2, \*loc3;

loc1 = (struct ListRec \*)malloc(sizeof(struct ListRec));

loc2 = (struct ListRec \*)malloc(sizeof(struct ListRec));

loc3 = (struct ListRec \*)malloc(sizeof(struct ListRec));

head = loc1;

loc1->value = 'A';

loc1->next = loc2;

loc2->value = 'C';

loc2->next = loc3;

loc3->value = 'M';

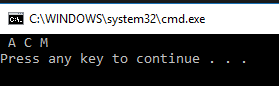
loc3->next = NULL;

print(head);

return 0;

}

Output:



Task 3:

#include <iostream>

using namespace std;

struct ListRec{

char value;

ListRec\* next;

};

void print(ListRec\* listHead) {

while (listHead->next != NULL) {

cout << " " << listHead->value;

listHead = listHead->next;

}

cout << " " << listHead->value << endl;

}

void deepCopy(ListRec\* oldListHead, ListRec\* newListHead) {

newListHead = NULL;

newListHead = oldListHead;

print(newListHead);

}

int main(){

struct ListRec \*head = nullptr, \*loc1, \*loc2, \*loc3, \*newHead = nullptr;

loc1 = (struct ListRec \*)malloc(sizeof(struct ListRec));

loc2 = (struct ListRec \*)malloc(sizeof(struct ListRec));

loc3 = (struct ListRec \*)malloc(sizeof(struct ListRec));

head = loc1;

loc1->value = 'A';

loc1->next = loc2;

loc2->value = 'C';

loc2->next = loc3;

loc3->value = 'M';

loc3->next = NULL;

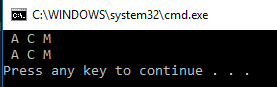
print(head);

deepCopy(head, newHead);

return 0;

}

Output:



Task 4:

#include <iostream>

using namespace std;

struct ListRec{

char value;

ListRec\* next;

};

void print(ListRec\* listHead) {

while (listHead->next != NULL) {

cout << " " << listHead->value;

listHead = listHead->next;

}

cout << " " << listHead->value << endl;

}

void deepCopy(ListRec\* oldListHead, ListRec\* newListHead) {

newListHead = NULL;

newListHead = oldListHead;

print(newListHead);

}

int main(){

struct ListRec \*head = nullptr, \*loc1, \*loc2, \*loc3, \*newHead = nullptr;

loc1 = (struct ListRec \*)malloc(sizeof(struct ListRec));

loc2 = (struct ListRec \*)malloc(sizeof(struct ListRec));

loc3 = (struct ListRec \*)malloc(sizeof(struct ListRec));

head = loc1;

loc1->value = 'A';

loc1->next = loc2;

loc2->value = 'C';

loc2->next = loc3;

loc3->value = 'K';

loc3->next = NULL;

print(head);

deepCopy(head, newHead);

loc3->value = 'B';

deepCopy(head, newHead);

return 0;

}

Output:

