Lesson 15 Lab

Task 1: to define a program to allocate a memory block with the size of 10 integers, and then resize it to as big as 20 integers, deallocate it before exiting the program

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Task 2: to define a function (named find\_sum) using what we just learnt, to traverse a linked list to figure out and return the sum of data in all nodes

Assume: we already have the setup as below:

Typedef struct node node;

struct node {

int data;

node \*next;

}

int find\_sum (node\* head);

/\* return the sum of all nodes’ value, return 0 if the list is empty or head is null \*/

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| --- |
| int find\_sum (node\* head) {  /\* your code goes here\*/  } |

Task 3: to define a function (named insert\_asc) using what we just learnt, to traverse a linked list with double pointer to insert a value into the linked list in ascending order

Assume: we already have the setup as below:

Typedef struct node node;

struct node {

int data;

node \*next;

}

int insert\_asc(node\*\* phead, int value) ;

/\* return 1 if inserting is succeeded; return 0 otherwise \*/

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| --- |
| int insert\_asc(node\*\* phead, int value) {  /\* your code goes here\*/  } |

Task 4: to define a function (named insert\_end) to insert a given value into the linked list at the end

[Hint: 1) loop through the list to find the current last node, 2) may need a double pointer]

Assume: we already have the setup as below:

typedef struct node node;

struct node {

int data;

node \*next;

}

/\* return 1 if inserting is succeeded; return 0 otherwise \*/

|  |
| --- |
| int insert\_end (node\*\* phead, int value){  /\* your code goes here\*/  } |

Task 5: To define a function named remove to remove all nodes with same value as the input

Assume: we already have the setup as below:

Typedef struct node node;

struct node {

int data;

node \*next;

}

Eg, before remove(), the list as 1 -> 2 -> 3 -> 2 -> 1

after calling remove(&head, 2); the list as 1 -> 3 -> 1

/\* return 1 if removing is succeeded; return 0 otherwise \*/

|  |
| --- |
| int remove (node\*\* phead, int value) {  /\* your code go here\*/  } |