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Design/Analysis
of Algorithms

Solution to #3

LinkedList.h definitions

```
    void evenMean();
    /*-------------------------------------------------------------------------
    Determine the mean value among the even elements in the list.
    Precondition: none
    Postcondition:
    -------------------------------------------------------------------------*/

    void oddMean();
    /*-------------------------------------------------------------------------
   Determine the mean value among the odd elements in the list.
   Precondition: none
   Postcondition:
   -------------------------------------------------------------------------*/
```

LinkedList.cpp implementation

CMakeLists.txt × | LinkedList.h × | LinkedList.cpp × | Linked_List_Tester.cpp ×

```
174  // Definition for the mean in an even length linked list
175  void LinkedList::evenMean() {
176      Node * fastPtr = first;
177      Node * slowPtr = first;
178      if (first != NULL) {
179          while (fastPtr!=NULL && fastPtr->next!=NULL) {
180              fastPtr = fastPtr->next->next;
181              slowPtr= slowPtr->next;
182          }
183          cout << slowPtr->data;
184      }
185  }
186  // Definition for the mean in an odd length linked list
187  void LinkedList::oddMean() {
188      int count = 0;
189      Node *middle = first;
190      while(first!= NULL){
191          if(count%2==1){
192              middle= middle->next;
193
194          }
195          count++;
196          first=first->next;
197      }
198      if(middle!=NULL){
199          cout << middle->data;
200      }
201  }
202
```

Linked_List_Tester.cpp

```
LinkedList intList;


cout << "\n\nConstructing intList" << endl << endl;

// Test insert()
intList.insert(1, 0);
intList.display(cout);
cout << endl;

intList.insert(2, 1);
intList.display(cout);
cout << endl;

intList.insert(2, 2);
intList.display(cout);
cout << endl;

intList.insert(3, 3);
intList.display(cout);
cout << endl;

cout << "\nFinal linked list: " << endl;
intList.display(cout);
cout << endl;
cout << "\nEven mean: " << endl;
intList.evenMean();
cout << endl;
cout << "\nOdd mean" << endl;
intList.oddMean();
cout << endl;
```

LinkedList OUTPUT