

Kadir Has University
Department of Computer Engineering
CE 242 - Data Structures and Algorithms
Spring 2009 - Ahmet Ardal
Lab Assignment 1

1. Using the reference linked list implementation, write a program as follows:
 - Create a linked list named pListGrades, (Hint: Use ListCreate() function)
 - Read id-grade pairs from the console and create Grade structures dynamically until the user enters a negative id value,
 - Append each Grade structure you created to pListGrades as you create it, (Hint: Use ListAppend() function)
 - After constructing and filling pListGrades, create two more lists with names pListFailed, pListPassed,
 - Traverse the grades list; when you encounter a Grade object whose grade field is less than 30 add it to the list named pListFailed and when you encounter a Grade object whose grade field is greater than or equal to 30 add it to the list named pListPassed,
 - Print all grades in the pListGrades and destroy pListGrades, (Hint: Use ListDestroy() function)
 - Print the grades those two lists (pListFailed, pListPassed) contain separately as “Failed Grades” and “Passed Grades”,
 - Finally, destroy pListFailed and pListPassed lists.

Notes:

- Grade structure:

```
struct Grade
{
    int studId;
    int grade;
};
```

- Example output of the program:

```
id: 1
grade: 11
id: 2
grade: 22
id: 3
grade: 33
id: 4
grade: 44
id: 5
grade: 55
id: 6
grade: 66
id: 7
grade: 77
id: -1
--- all grades -----
id: 1, grade: 11
id: 2, grade: 22
id: 3, grade: 33
id: 4, grade: 44
id: 5, grade: 55
id: 6, grade: 66
id: 7, grade: 77
--- passed grades ----
id: 3, grade: 33
id: 4, grade: 44
id: 5, grade: 55
id: 6, grade: 66
id: 7, grade: 77
```

```
--- failed grades ----  
id: 1, grade: 11  
id: 2, grade: 22  
Press any key to continue . . .
```