

National Taipei University of Technology

Communication Software Design (Fall, 2013)

Project 1 – Text Parsing

(Due: 2013/10/15, Tuesday before noon AM11:59)

The goal of this course in this semester is to complete a “Graphical Modeling System” using Qt C++ programming language features and some supporting source code libraries.

(I) Project Descriptions:

In this first homework, you are asked to implement text parsing application to record and parse. The text contents of a Graphical Modeling System, include new or load the xml file, add new item, print out the content, and write a review. In order to facilitate recording, you are asked to transform and parse the item information accordingly into the XML formatted file, and the XML file should be able to be loaded and parsed for displaying the formatted content on the screen. At first, you have to create a Function menu as follows, (See Figure 1).

```
Welcome
[1] Graphical Modeling System
[2] Exit
>
```

Figure 1

There are 2 major functions in this home work.

```
[1] Graphical Modeling System
[2] Exit
```

They should be accordingly implemented as the following assignments. Details about the Function list will be introduced one by one as follows.

Graphical Modeling System

When the user entered "1" at Welcome menu, the program should out put the following menu (Figure 2).

```
Graphical Modeling System
[1] New / Load a XML record
[2] Add component
[3] Display current components
[4] Back to Welcome menu
>
```

Figure 2

If users choose options not exist, print an error message.

```
Graphical Modeling System
[1] New / Load a XML record
[2] Add component
[3] Display current components
[4] Back to Welcome menu
> X

Option not exist, please select again

Graphical Modeling System
[1] New / Load a XML record
[2] Add component
[3] Display current components
[4] Back to Welcome menu
>
```

Figure 3

New / Load xml file

In this menu user can load the existing xml file, create a new xml file, and go back to GMS menu.

```
New / Load a XML record
```

[1] Create new xml record
[2] Load a XML record
[3] Back to GMS menu
>

Figure 4

Graphical Modeling System
[1] New / Load a XML record
[2] Add component
[3] Display current components
[4] Back to Welcome menu
> 1

New / Load a XML record
[1] Create new xml record
[2] Load a XML record
[3] Back to GMS menu
> 4

Option not exist, please select again

New / Load a XML record
[1] Create new xml record
[2] Load a XML record
[3] Back to GMS menu
> 1

Enter new record path
> c:/gms1.xml

Record created.

New / Load a XML record
[1] Create new xml record
[2] Load a XML record
[3] Back to GMS menu
> 1

Enter new record path

> c:/gms1.xml

Record of this path and name already exist, please select another path or record name.

New / Load a XML record

[1] Create new xml record

[2] Load a XML record

[3] Back to GMS menu

> 2

Enter record path

> c:/gms2.xml

Record of this path and name not exist, please select another path or record name.

Enter record path

> c:/gms1.xml

Record loaded.

New / Load a XML record

[1] Create new xml record

[2] Load a XML record

[3] Back to GMS menu

> 3

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

[4] Back to Welcome menu

>

Figure 5

Add component

In this menu users must be able to create new components of current XML record, enter 2 in GMS menu to access this function

To add a component, select type and enter its name. You also should record the ID of the component, and this ID should be isolated. All XML should have its own component list and ID list(not related to other XML).

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

[4] Back to Welcome menu

> 2

No XML record loaded.

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

[4] Back to Welcome menu

> 1

New / Load a XML record

[1] Create new xml record

[2] Load a XML record

[3] Back to GMS menu

> 2

Enter record path

> c:/gms1.xml

Record loaded.

New / Load a XML record

[1] Create new xml record

[2] Load a XML record

[3] Back to GMS menu

> 3

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

[4] Back to Welcome menu

> 2

Select component type

[1]Cube [2]Pyramid [3]Sphere

> 1

Enter component name

> First Cube

A component of Cube type added, name: First Cube, ID: 1

Option not exist, please select again.

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

[4] Back to Welcome menu

>

Figure 7

Display current component

When users select this option, the system should output all the components information of current XML record.

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

[4] Back to Welcome menu

> 3

Components:

Type	ID	Name
C	1	First Cube
S	2	First Sphere
P	3	First Pyramid
P	4	Second Pyramid
P	5	Third Pyramid
P	6	Fourth Pyramid
C	7	SC
C	8	Third Cube
S	9	Second Sphere
C	10	Fourth Cube
S	11	Third Sphere
S	12	FP

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

[4] Back to Welcome menu

>

Figure 8

Back to Welcome menu

This option will back to the welcome menu

Graphical Modeling System

[1] New / Load a XML record

[2] Add component

[3] Display current components

```

[4] Back to Welcome menu
> 4

Welcome
[1] Graphical Modeling System
[2] Exit
>

```

Figure 9

Exit

This option should print a good bye message and exit the program.

```

Welcome
[1] Graphical Modeling System
[2] Exit
> 2

Good bye!

```

(II) Homework Report:

You have to write a report for this homework that should include the following items:

- (1) The features that you finished in this homework.
- (2) Write comment for each function. (Just be concise.)
- (3) Snapshots of program execution.
- (4) Measure the time that you spent in this homework. Please record the time precisely in the following table.

homework#1(total: 18 hours)			
Date	Start	Stop	Comment
20131001	19:30	22:00	New / Load a XML record
20131002	19:00	21:45	Display current components
20131004	13:10	15:25	New / Load a XML record
20131007	14:55	17:30	Add component

Total hours: 10

(III) Homework Grading:

- (1) GMS (70%)
 - a. [1] New / Load XML record (20%)
 - b. [2] Add item to the system (20%)
 - c. [3] Display current components (20%)
 - d. [4] Back to Welcome Menu (10%)
- (2) Exit (5%)
- (3) Coding style and code quality (10%)
- (4) Report (15%)

(IV) Homework Submission:

Please zip your homework before upload to e-learning.

And you must include:

- (1) Your source code (the entire project)
- (2) Report (both word and PDF)