

**605.441 PRINCIPLES OF DATABASE SYSTEMS
FINAL PROJECT PRESENTATION**

**CUSTOMER RELATIONSHIP MANAGEMENT
SYSTEM WITH PROJECT MANAGEMENT TRACKER**

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PROJECT REQUIREMENT

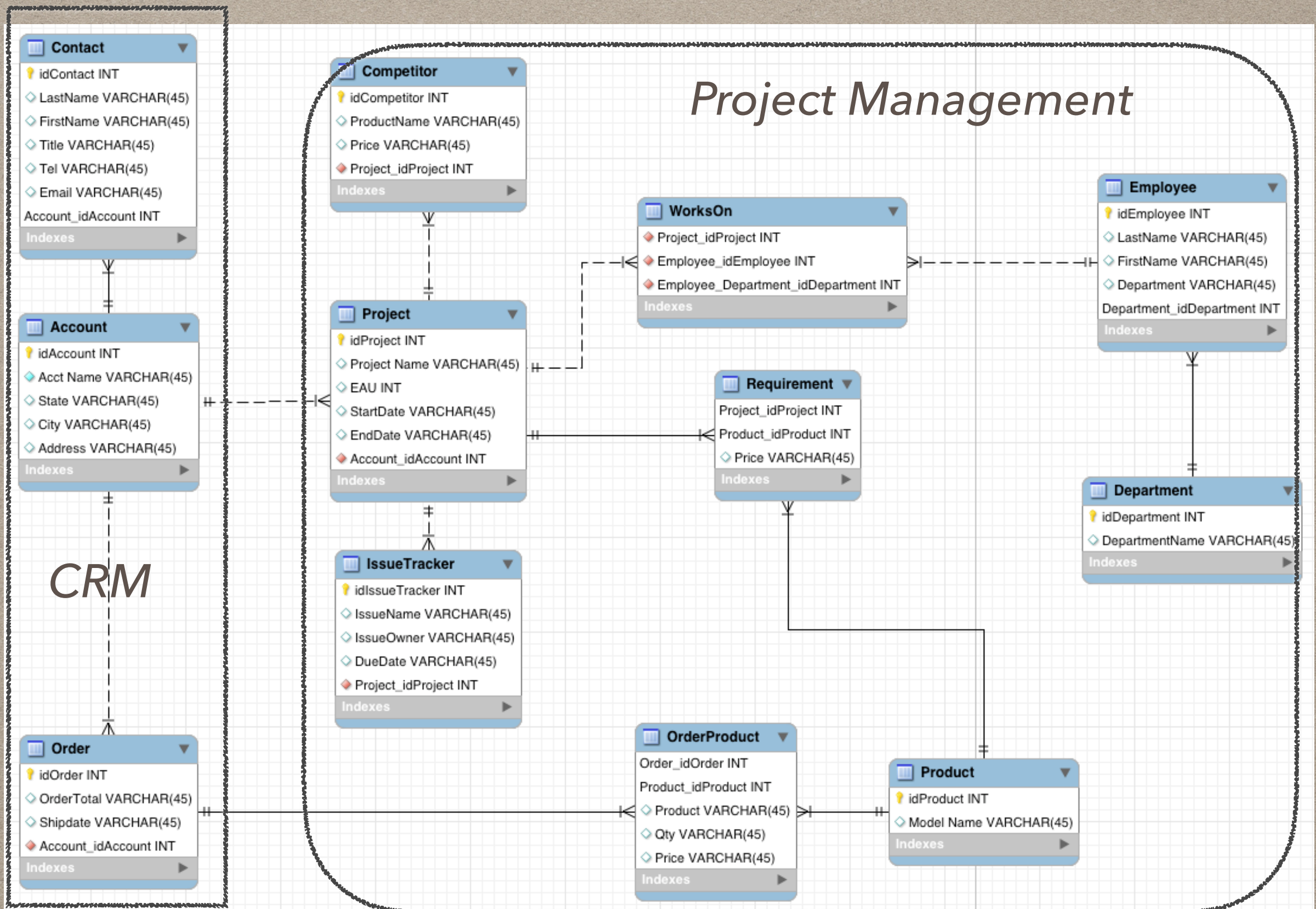
- Traditional CRM database implementation
- Add more project management tool features
- Reference commercial application such as Oracle Siebel and salesforce.com

The screenshot displays the Oracle Siebel CRM interface for a Service Request (SR) form. The top navigation bar includes 'File', 'Edit', 'View', 'Navigate', 'Query', 'Tools', and 'Help'. Below this is a 'Saved Queries' section. The main header shows the account 'Austin Consulting Group' and the SR number '1-2SUQ'. The form is divided into several sections: 'SR Information' (containing fields for SR #, Last Name, First Name, Account, Site, CSN #, Contact Account, Phone #, Email, Source, and Reproducible), 'Status and Ownership' (containing fields for Status, Sub Status, Priority, Owner, Creator, Group, Organization, and Severity), 'Customer Time Zone' (containing fields for Opened, Committed, and Closed), and 'Summary' (containing a text area for 'Issues with the billing component' and a 'Detailed Description' section). The form also includes a 'Menu' bar with options like 'New', 'Delete', 'Cancel', 'Query', 'Smart Answer', 'Auto Quote', 'Verify', 'Verify Best Time', and 'Create Case'.

The screenshot displays the Salesforce CRM interface for a Project detail page. The top navigation bar includes 'Home', 'Getting Started', 'Summary', 'Projects', 'Tasks with Time', 'Milestones', 'Tasks', and 'Times'. The main header shows the project name 'HOWTO: Get Started with Milestones PM' and the owner 'AppBuddy Demo'. The project status is 'Active'. The description states: 'The sample project contains milestones and tasks designed to help you understand how to get the most out of Milestones PM.' Below the project details, there are two sections: 'Metrics: Hours & Expenses (Calculated)' and 'Metrics: Milestone Information (Calculated)'. The 'Hours & Expenses' section includes metrics for Total Hours Budget from Milestones (6.00), Total Hours Estimate (10.00), Total Hours Incurred (62.00), Total Expense Budget from Milestones (\$0.00), Total Expense Estimate (\$507.00), and Total Expense Incurred (\$0.00). The 'Milestone Information' section includes metrics for Number of Incomplete Milestones (0), Number of Incomplete Top Milestones (0), Total Open Task Count (0), Total Complete Task Count (24), Next Project Milestone Due Date, Next Project Top Milestone Due Date, Total Blocked Task Count (0), and Total Late Task Count (0). The page also includes a 'Customize Page | Edit Layout | Printable View | Help for this Page' link.

E/R DIAGRAM

Project Management



DB IMPLEMENTATION: MYSQL

- ❖ Programming Language : HTML, CSS, Java (JSP)
- ❖ Development Environment : Eclipse
- ❖ Server/ Deployment : Tomcat 8.0/ Amazon Web Service
- ❖ Database: MySQL



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CRUD

5.2. List of Functions

F1: Customer contact information for particular Account-

F2: Open order for particular Account-

F3: Sales history for particular Account-

F4: List of inactive Account-

F5: Ongoing project by EAU more than X

F6: Open Issue

F7: Best Selling Product

F8: List of employee working on project X

F9: create/update/delete a new project

F10: competitor on particular project

5.1. List of Entity Types

E1: Account

E2: Competitor

E3: Contact

E4: Department

E5: Employee

E6: IssueTracker

E7: Order

E8: OrderProduct

E9: Product

E10: Project

E11: Requirement

E12: WorksOn

[illegible]

DATA DICTIONARY

Account

Field	Type	Null	Key	Default	Extra
idAccount	int(11)	NO	PRI	NULL	
Acct Name	varchar(45)	NO		NULL	
State	varchar(45)	YES		NULL	
City	varchar(45)	YES		NULL	
Address	varchar(45)	YES		NULL	

Contact

Field	Type	Null	Key	Default	Extra
idContact	int(11)	NO	PRI	NULL	
LastName	varchar(45)	YES		NULL	
FirstName	varchar(45)	YES		NULL	
Title	varchar(45)	YES		NULL	
Tel	varchar(45)	YES		NULL	
Email	varchar(45)	YES		NULL	
Account_idAccount	int(11)	NO	PRI	NULL	

Project

Field	Type	Null	Key	Default	Extra
idProject	int(11)	NO	PRI	NULL	
Project Name	varchar(45)	YES		NULL	
EAU	int(11)	YES		NULL	
StartDate	datetime	YES		NULL	
EndDate	datetime	YES		NULL	
Account_idAccount	int(11)	NO	MUL	NULL	

Employee








Field	Type	Null	Key	Default	Extra
idEmployee	int(11)	NO	PRI	NULL	
LastName	varchar(45)	YES		NULL	
FirstName	varchar(45)	YES		NULL	
Department	varchar(45)	YES		NULL	
Department_idDepartment	int(11)	NO	PRI	NULL	
Bonus	int(11)	YES		NULL	

DEMO: SAMPLE OPERATION

CRM related:







- Customer contact information for particular Account-

```
SELECT * FROM mydb.Contact where Account_idAccount=5;
```

Result Grid   Filter Rows: <input type="text" value="Search"/>							Edit:   		Export/Import:  	
idContact	LastName	FirstName	Title	Tel	Email	Account_idAccount				
8	H	Hayden	Procurement Dr.	9998887777	HaydenH@yahoo.com	5				
9	I	Ilionis	Egnineer	8887776666	Illionil@yahoo.com	5				
10	J	Jonh	BDM	6665554444	JohnJ@yahoo.com	5				

- Sales history for particular Account-

```
SELECT * FROM mydb.`Order` where Account_idAccount=2;
```

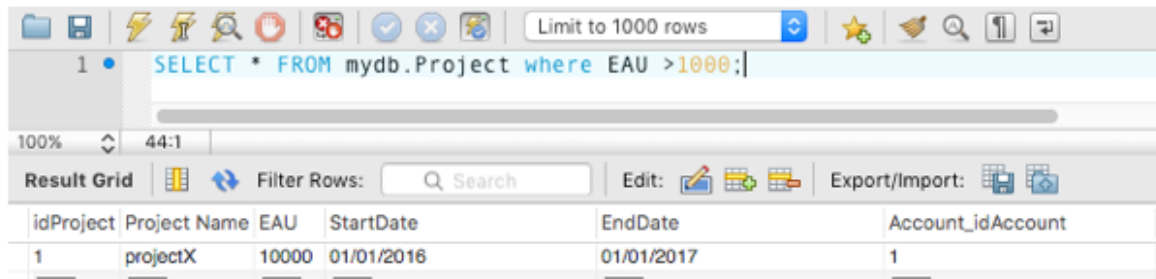
Result Grid   Filter Rows: <input type="text" value="Search"/>				
	idOrder	OrderTotal	Shipdate	Account_idAccou...
▶	3	3000	03/03/2016	2
	4	4000	04/04/2016	2
				

DEMO: SAMPLE OPERATION

PM related:

- Ongoing project by EAU more than X

```
SELECT * FROM mydb.Project where EAU >1000;
```

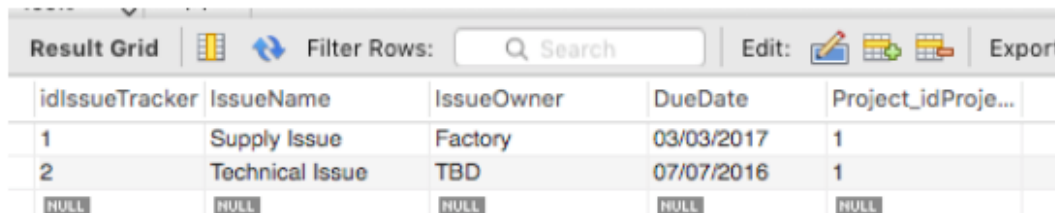


The screenshot shows a database client window with a toolbar at the top. The SQL editor contains the query: `SELECT * FROM mydb.Project where EAU >1000;`. Below the editor, the 'Result Grid' tab is active, displaying a table with 6 columns: idProject, Project Name, EAU, StartDate, EndDate, and Account_idAccount. The table contains one row of data.

idProject	Project Name	EAU	StartDate	EndDate	Account_idAccount
1	projectX	10000	01/01/2016	01/01/2017	1

- Open Issue

```
SELECT * FROM mydb.IssueTracker where Project_idProject=1;
```

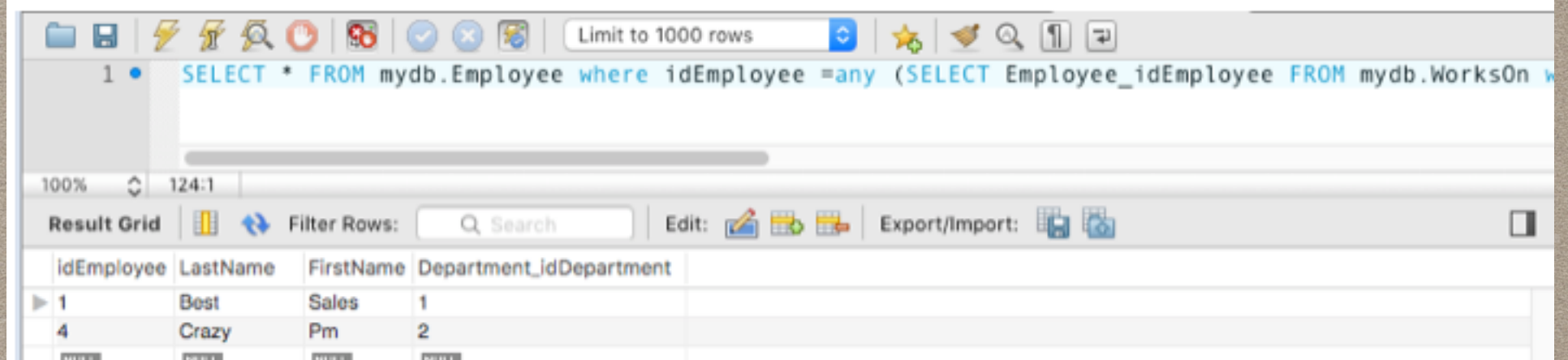


The screenshot shows a database client window with a toolbar at the top. The SQL editor contains the query: `SELECT * FROM mydb.IssueTracker where Project_idProject=1;`. Below the editor, the 'Result Grid' tab is active, displaying a table with 5 columns: idIssueTracker, IssueName, IssueOwner, DueDate, and Project_idProje... (truncated). The table contains two rows of data.

idIssueTracker	IssueName	IssueOwner	DueDate	Project_idProje...
1	Supply Issue	Factory	03/03/2017	1
2	Technical Issue	TBD	07/07/2016	1

- List of employee working on project X

```
SELECT * FROM mydb.Employee where idEmployee =any (SELECT Employee_idEmployee FROM mydb.WorksOn where Project_idProject=1);
```



The screenshot shows a database client window with a toolbar at the top. The SQL editor contains the query: `SELECT * FROM mydb.Employee where idEmployee =any (SELECT Employee_idEmployee FROM mydb.WorksOn where Project_idProject=1);`. Below the editor, the 'Result Grid' tab is active, displaying a table with 4 columns: IdEmployee, LastName, FirstName, and Department_idDepartment. The table contains two rows of data.

IdEmployee	LastName	FirstName	Department_idDepartment
1	Best	Sales	1
4	Crazy	Pm	2

DEMO: SPECIAL FEATURES

Trigger:

This DB project only designed with trigger. When creating a project, or project status move from "initial" to "design win" or "mass production", the bonus column from employee automatically triggered to add certain amount as bonus. Others similar business rule apply to trigger such as order price amount reach to retain revenue, trigger the bonus update from employee table.

Views: (restrict access)

This DB project set roles authority to access each table. For example, west coast sales person can only access west coast customer contact information, and order status. Project managers can access each account contact information and project details, but not on each employees bonus column etc.

Views: (Presenting tables to users in various forms)

Project/Sales review View: provide general manager or sales director a new view combine account table and project table together for business review and discussion

FUTURE ENHANCEMENTS

- Client-Server web based application
- Design more operation features
- Security feature
- Backup and Recovery feature

LESSON LEARNED

- Start early !
- Documentation takes time
- DB implementation, real application takes time
- Need more time to study real world database application for future enhancement

"Thank you"

Chin-Ting Ko