



## บรรณานุกรม

1. จินดารัตน์ วิเศษเรืองโรจน์, การพัฒนาโมเดลของข้อมูลสำหรับงานบริหารฝ่ายบุคลากร, ภาควิชาวิศวกรรมคอมพิวเตอร์, บัณฑิตวิทยาลัย, จุฬาลงกรณ์มหาวิทยาลัย, 2535
2. สุวดี ดำนธำรงกุล, การจัดทำต้นแบบระบบบุคลากรสำหรับมหาวิทยาลัยขนาดใหญ่โดยใช้ฐานข้อมูลเชิงสัมพันธ์, ภาควิชาวิศวกรรมคอมพิวเตอร์, บัณฑิตวิทยาลัย, จุฬาลงกรณ์มหาวิทยาลัย, 2536
3. วิไลพร วรรณศิริกุล, การออกแบบข้อมูลแบบกระจายสำหรับระบบห้องสมุดของมหาวิทยาลัย, ภาควิชาวิศวกรรมคอมพิวเตอร์, บัณฑิตวิทยาลัย, จุฬาลงกรณ์มหาวิทยาลัย, 2536
4. Cri Stefano, Giuseppe Pelagatti, Distributed Databases Principle, McGraw-Hill, 1984
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6. Date C.J., Introduction to Database Management System Volume 1, Addison-Weisley Publishing Company, 1986
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ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



ภาคผนวก

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



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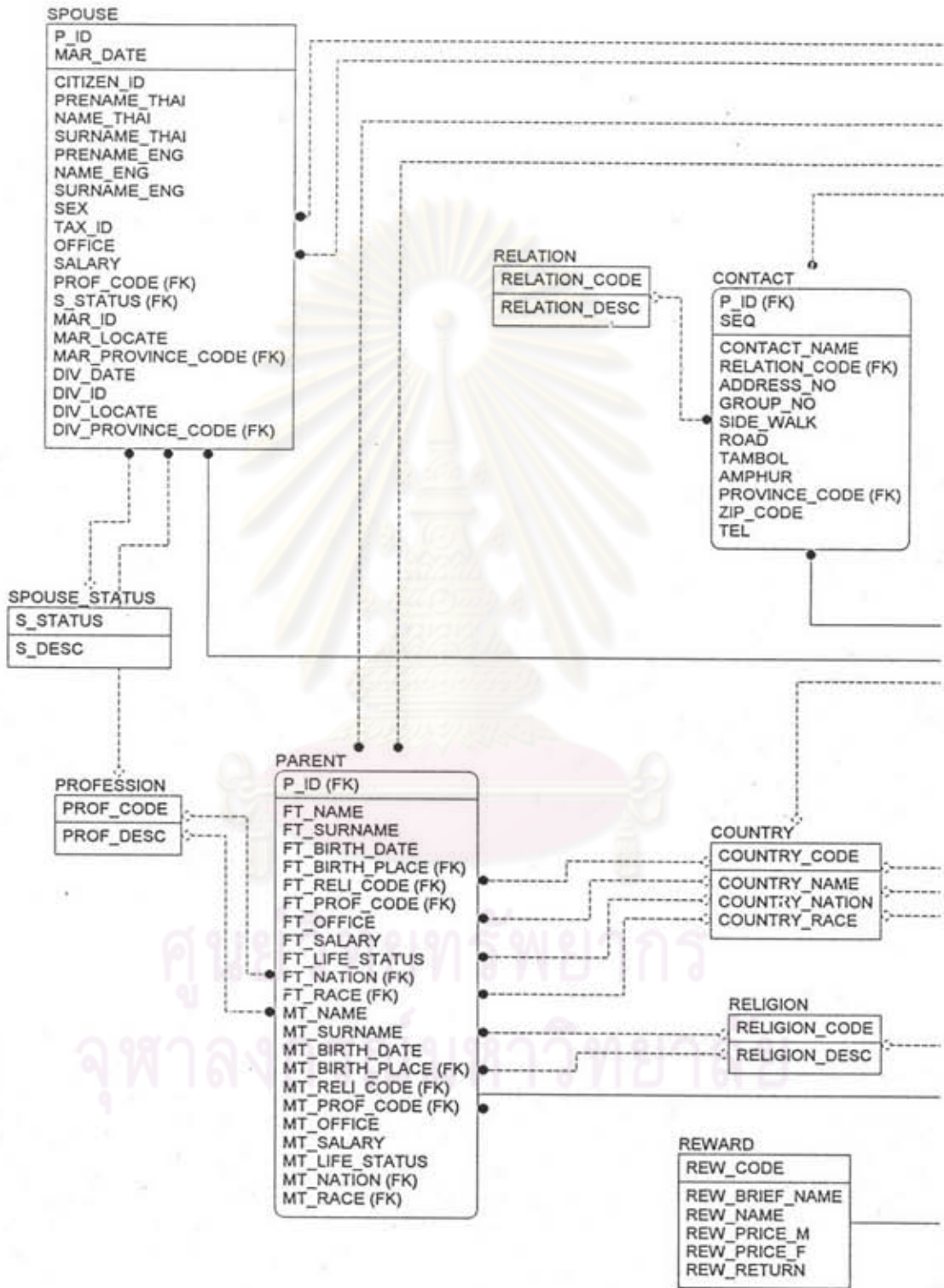


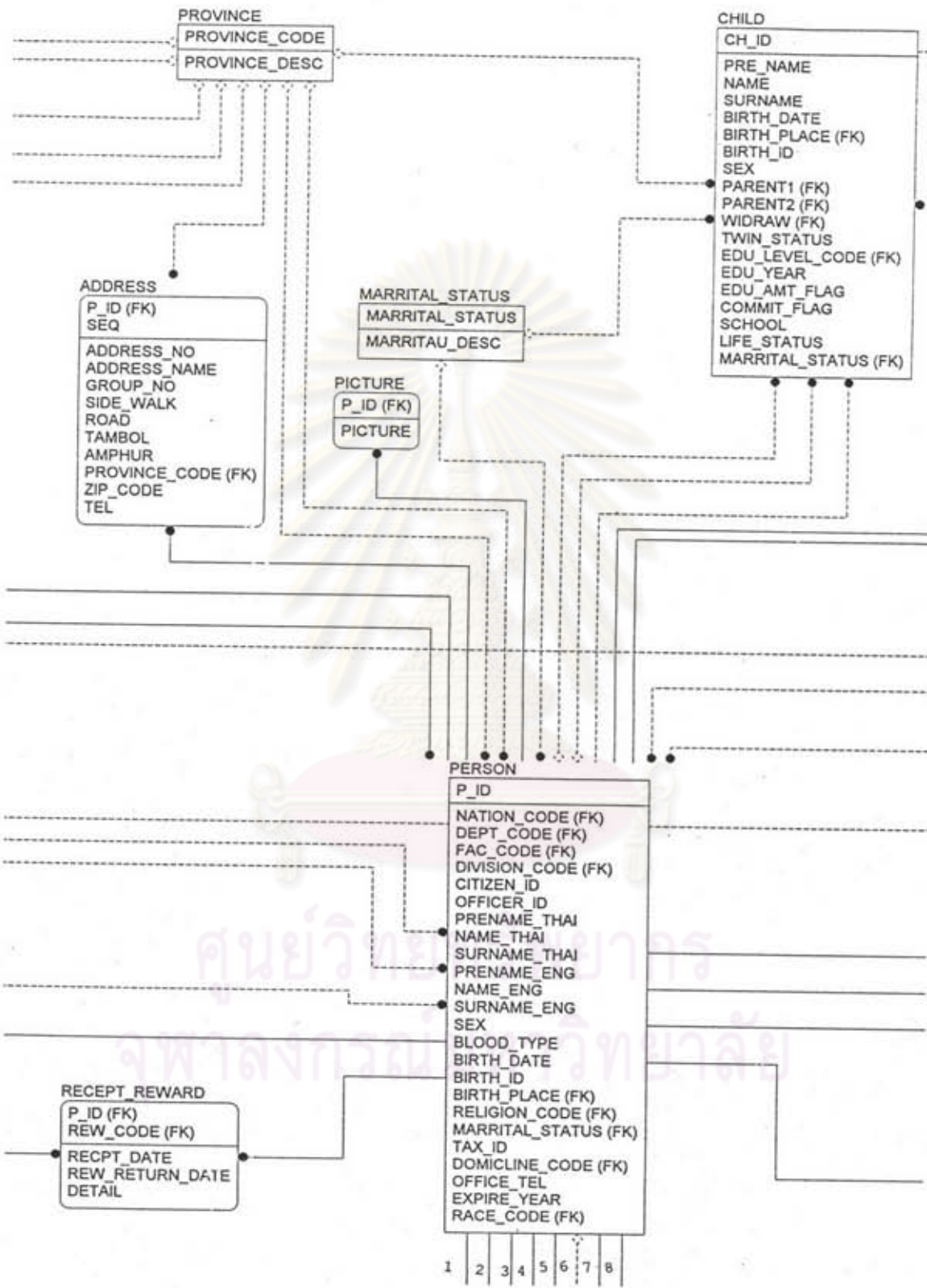
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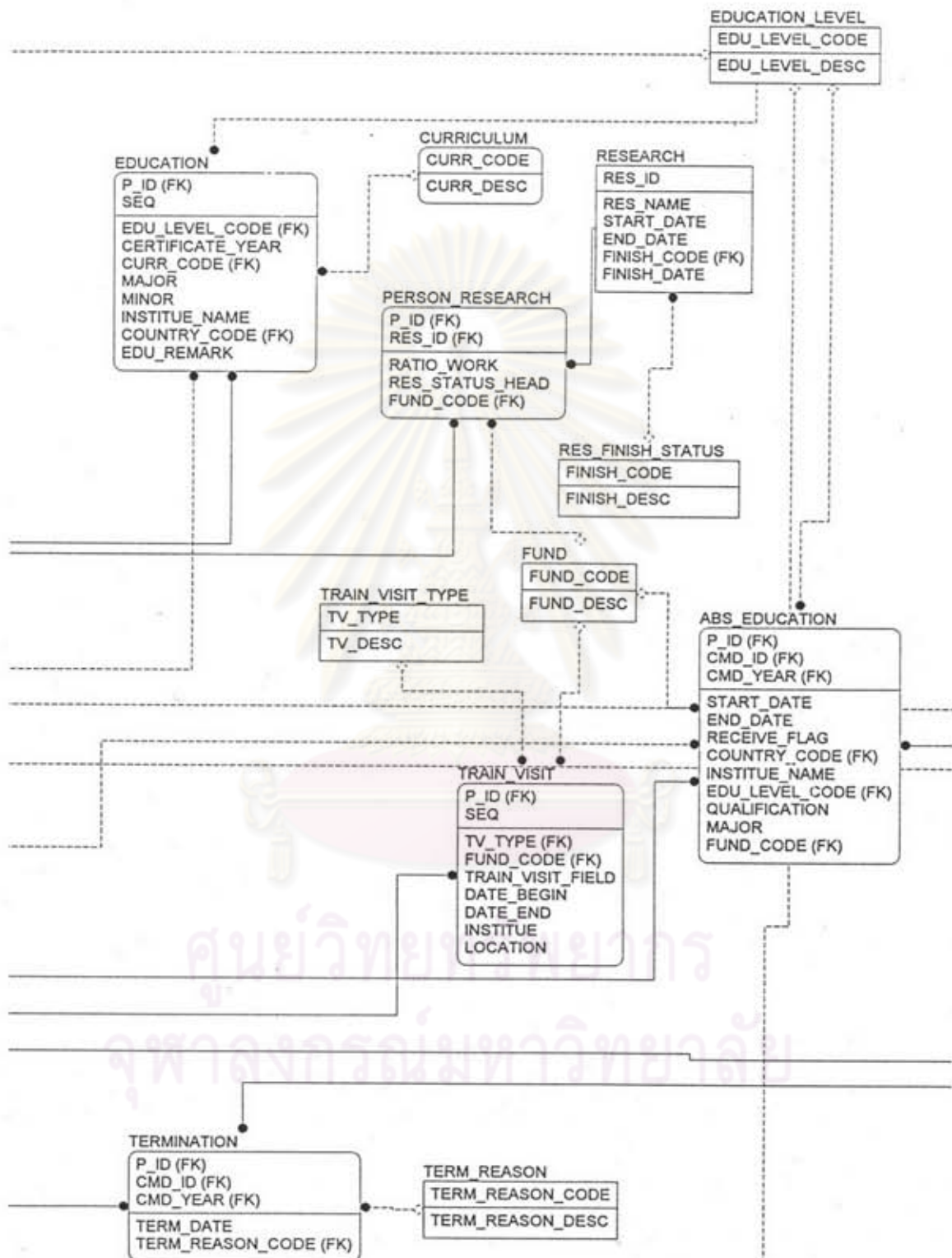
แผนภาพแบบจำลองโดยสมบูรณ์แสดงความสัมพันธ์ระหว่างเอนทิตีในฐานข้อมูลและแอททริบิวต์ทั้งหมดของเอนทิตี



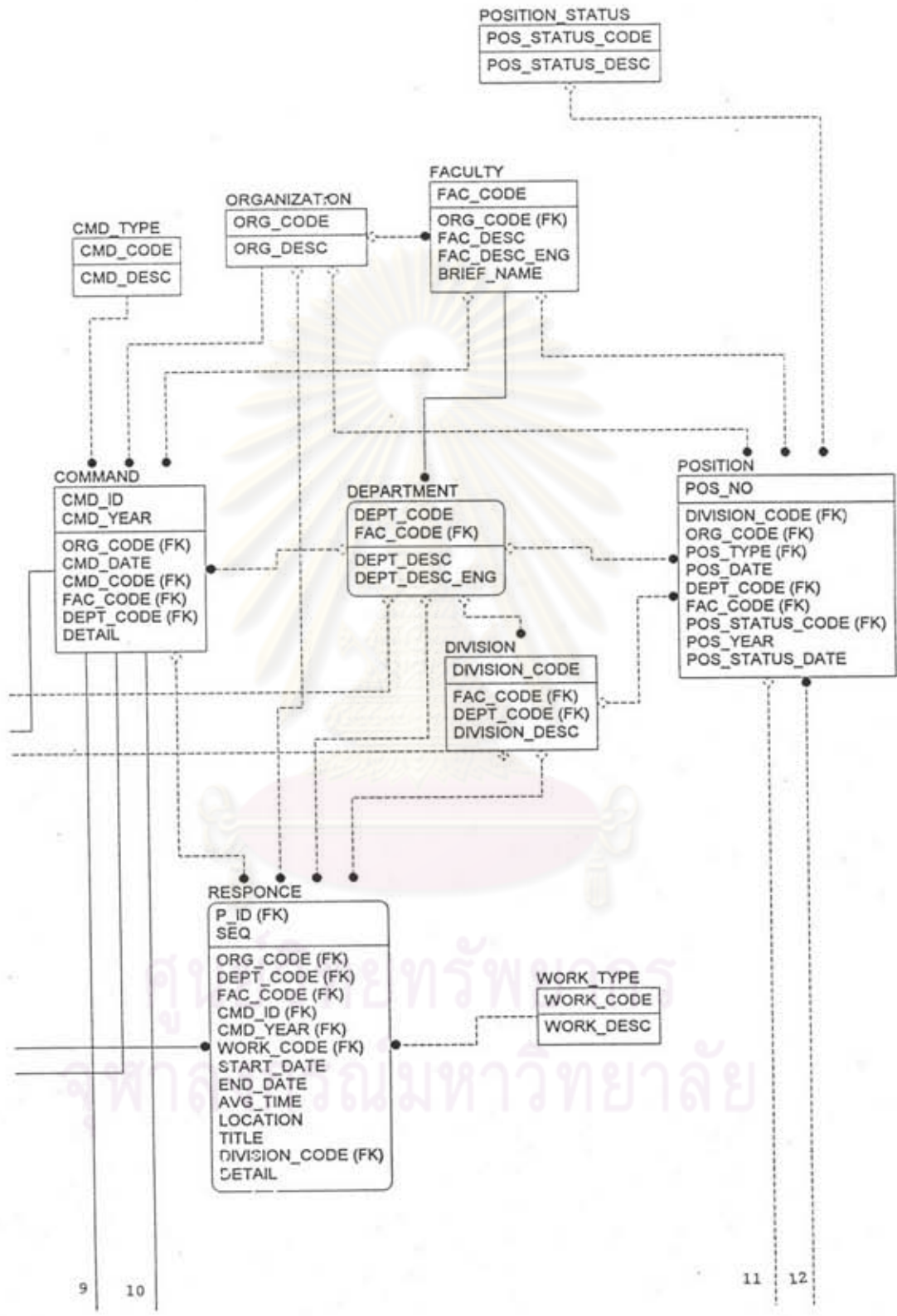
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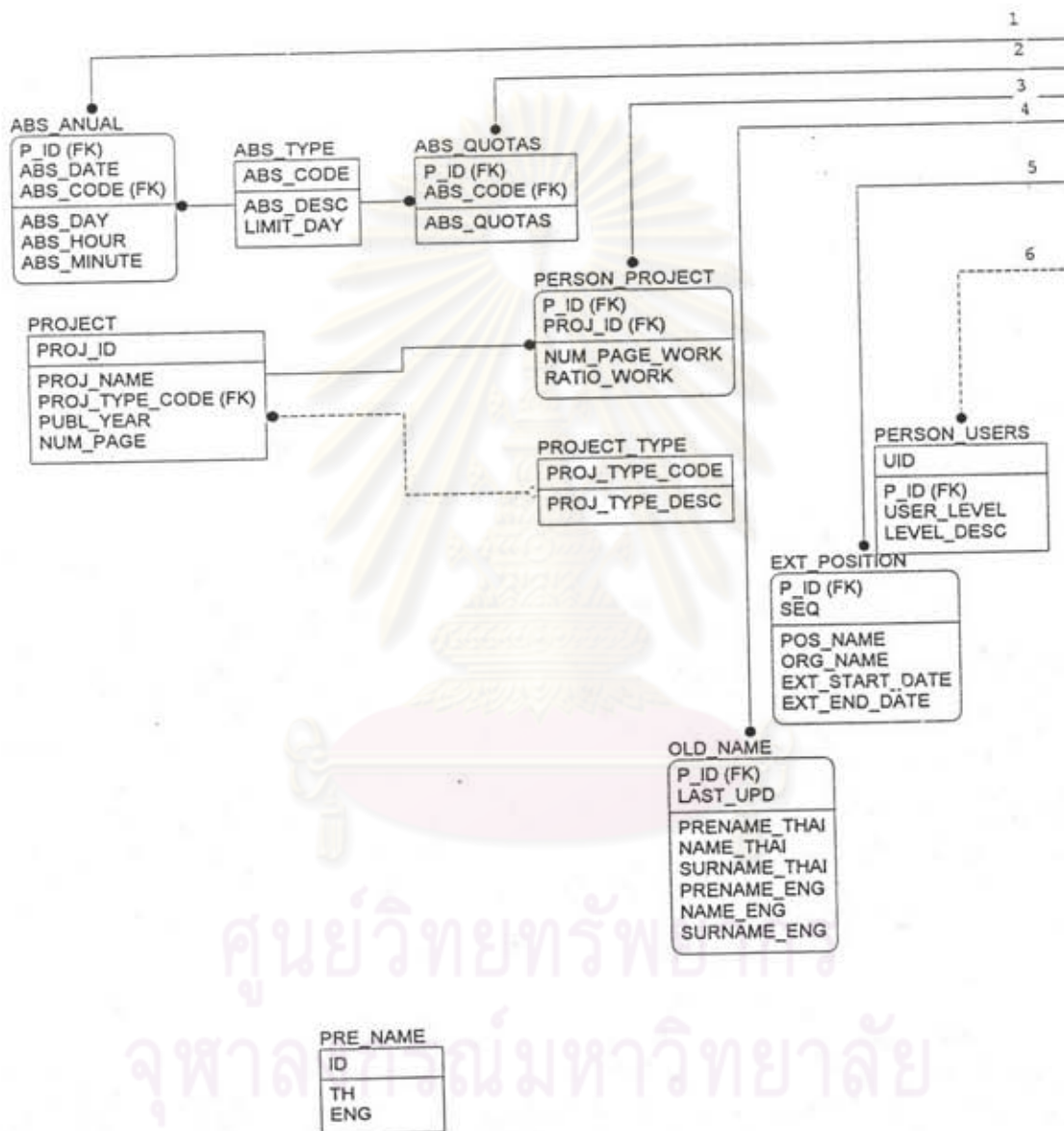


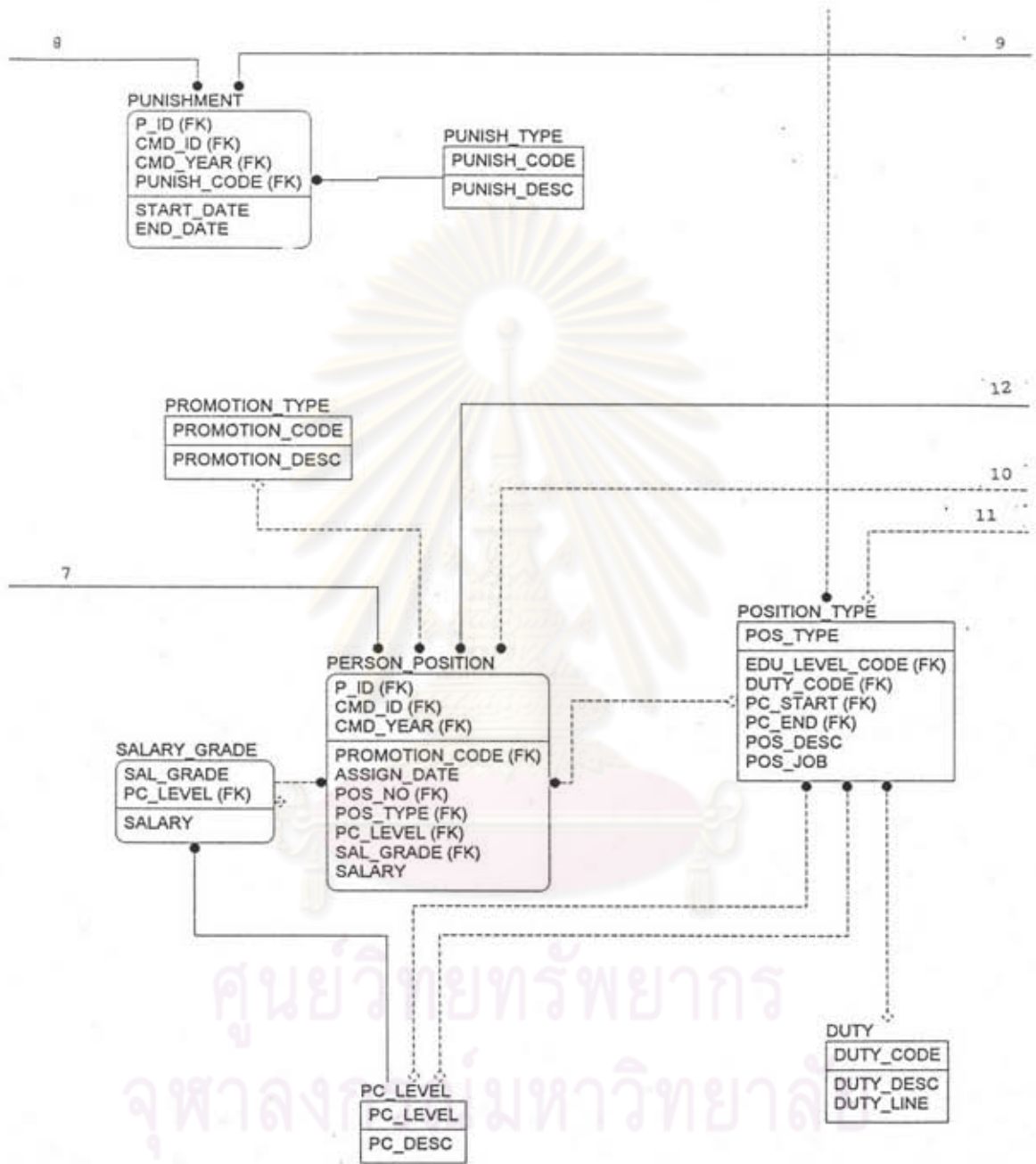














ศูนย์วิทยทรัพยากร  
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ภาคผนวก ข

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

รายละเอียดในการสร้างตารางโดยสมบูรณ์ ประกอบด้วยชื่อตาราง ชื่อเขต และคีย์หลัก



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

## ตาราง ข ตารางโดยสมบูรณ์

ชื่อตาราง	ชื่อเขต	คีย์หลัก
ABS_ANUAL	P_ID VARCHAR2(7) NOT NULL	P_ID
	ABS_DATE DATE NOT NULL	ABS_DATE
	ABS_CODE VARCHAR2(2) NOT NULL	ABS_CODE
	ABS_DAY NUMBER(2) NULL	
	ABS_HOUR NUMBER(1) NULL	
	ABS_MINUTE NUMBER(2) NULL	
ABS_EDUCATION	P_ID VARCHAR2(7) NOT NULL	P_ID
	CMD_ID VARCHAR2(15) NOT NULL	CMD_ID
	CMD_YEAR NUMBER(4) NOT NULL	CMD_YEAR
	START_DATE DATE NULL	
	END_DATE DATE NULL	
	R E C E I V E _ F L A G VARCHAR2(1) NULL	
	C O U N T R Y _ C O D E VARCHAR2(2) NULL	
	I N S T I T U E _ N A M E VARCHAR2(50) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	EDU_LEVEL_CODE VARCHAR2(2) NULL	
	QUALIFICATION VARCHAR2(13) NULL	
	MAJOR VARCHAR2(60) NULL	
	FUND_CODE VARCHAR2 (2) NULL	
	DEPT_CODE VARCHAR2(3) NOT NULL	
ABS_QUOTAS	P_ID VARCHAR2(7) NOT NULL	P_ID
	ABS_CODE VARCHAR2(2) NOT NULL	ABS_CODE
	ABS_QUOTAS NUMBER(2) NULL	
ABS_TYPE	ABS_CODE VARCHAR2(2) NOT NULL	ABS_CODE
	ABS_DESC VARCHAR2(25) NOT NULL	
	LIMIT_DAY NUMBER(2) NULL	
ADDRESS	P_ID VARCHAR2(7) NOT NULL	P_ID
	SEQ NUMBER(1) NOT NULL	SEQ



## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	ADDRESS_NO VARCHAR2 (7) NULL	
	A D D R E S S _ N A M E VARCHAR2(30) NULL	
	GROUP_NO VARCHAR2(3) NULL	
	SIDE_WALK VARCHAR2 (30) NULL	
	ROAD VARCHAR2(30) NULL	
	TAMBOL VARCHAR2(30) NULL	
	AMPHUR VARCHAR2(30) NULL	
	P R O V I N C E _ C O D E VARCHAR2(2) NULL	
	ZIP_CODE VARCHAR2(5) NULL	
	TEL VARCHAR2(20) NULL	
CHILD	CH_ID VARCHAR2(13) NOT NULL	CH_ID
	PRE_NAME VARCHAR2(10) NOT NULL	
	NAME VARCHAR2(30) NOT NULL	
	SURNAME VARCHAR2(30) NOT NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	BIRTH_DATE DATE NULL	
	BIRTH_PLACE VARCHAR2 (2) NULL	
	BIRTH_ID VARCHAR2(10) NULL	
	SEX VARCHAR2(1) NULL	
	PARENT1 VARCHAR2(7) NOT NULL	
	PARENT2 VARCHAR2(7) NULL	
	WIDRAW VARCHAR2(7) NULL	
	TWIN_STATUS VARCHAR2 (1) NULL	
	EDU_LEVEL_CODE VARCHAR2(2) NULL	
	EDU_YEAR DATE NULL	
	EDU_AMT_FLAG VARCHAR2(1) NULL	
	COMMIT_FLAG VARCHAR2 (5) NULL	
	SCHOOL VARCHAR2(30) NULL	
	LIFE_STATUS VARCHAR2 (1) NULL	
	MARRITAL_STATUS VARCHAR2(2) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
CMD_TYPE	CMD_CODE VARCHAR2(2) NOT NULL	CMD_CODE
	CMD_DESC VARCHAR2(20) NOT NULL	
COMMAND	CMD_ID VARCHAR2(15) NOT NULL	CMD_ID
	CMD_YEAR NUMBER(4) NOT NULL	CMD_YEAR
	ORG_CODE VARCHAR2(2) NULL	
	CMD_DATE DATE NULL	
	CMD_CODE VARCHAR2(2) NOT NULL	
	FAC_CODE VARCHAR2(2) NULL	
	DEPT_CODE VARCHAR2(3) NULL	
	DETAIL VARCHAR2(200) NULL	
CONTACT	P_ID VARCHAR2(7) NOT NULL	P_ID
	SEQ VARCHAR2(1) NOT NULL	SEQ
	C O N T A C T _ N A M E VARCHAR2(60) NOT NULL	
	R E L A T I O N _ C O D E VARCHAR2(2) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	ADDRESS_NO VARCHAR2 (7) NULL	
	GROUP_NO VARCHAR2(3) NULL	
	SIDE_WALK VARCHAR2 (30)	
	ROAD VARCHAR2(30) NULL	
	TAMBOL VARCHAR2(30) NULL	
	AMPHUR VARCHAR2(30) NULL	
	PROVINCE_CODE VARCHAR2(2) NULL	
	ZIP_CODE VARCHAR2(5) NULL	
	TEL VARCHAR2(20) NULL	
COUNTRY	COUNTRY_CODE VARCHAR2(2) NOT NULL	COUNTRY_CODE
	COUNTRY_NAME VARCHAR2(20) NOT NULL	
	COUNTRY_NATION VARCHAR2(20) NULL	
	COUNTRY_RACE VARCHAR2(20) NULL	
CURRICULUM	CURR_CODE VARCHAR2 (5) NOT NULL	CURR_CODE

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	CURR_DESC VARCHAR2 (30) NOT NULL	
DEPARTMENT	DEPT_CODE VARCHAR2(3) NOT NULL	DEPT_CODE
	FAC_CODE VARCHAR2(2) NOT NULL	FAC_CODE
	DEPT_DESC VARCHAR2 (30) NOT NULL	
	DEPT_DESC_ENG VARCHAR2(30) NULL	
DIVISION	DIVISION_CODE VARCHAR2(2) NOT NULL	DIVISION_CODE
	FAC_CODE VARCHAR2(2)	
	DEPT_CODE VARCHAR2(3) NULL	
	DIVISION_DESC VARCHAR2(30) NOT NULL	
DUTY	DUTY_CODE VARCHAR2 (4) NOT NULL	DUTY_CODE
	DUTY_DESC VARCHAR2 (20) NOT NULL	
	DUTY_LINE VARCHAR2(1) NULL	
EDUCATION	P_ID VARCHAR2(7) NOT NULL	P_ID
	SEQ VARCHAR2(1) NOT NULL	SEQ

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	EDU_LEVEL_CODE VARCHAR2(2) NOT NULL	
	CERTIFICATE_YEAR NUMBER(4) NULL	
	CURR_CODE VARCHAR2 (5) NULL	
	MAJOR VARCHAR2(30) NULL	
	MINOR VARCHAR2(30) NULL	
	INSTITUTE_NAME VARCHAR2(50) NULL	
	COUNTRY_CODE VARCHAR2(2) NULL	
	EDU_REMARK VARCHAR2 (100) NULL	
EDUCATION_LEVEL	EDU_LEVEL_CODE VARCHAR2(2) NOT NULL	EDU_LEVEL_CODE
	EDU_LEVEL_DESC VARCHAR2(30) NOT NULL	
EXT_POSITION	P_ID VARCHAR2(7) NOT NULL	P_ID
	SEQ NUMBER(2) NOT NULL	SEQ
	POS_NAME VARCHAR2(50) NOT NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	ORG_NAME VARCHAR2 (50) NOT NULL	
	EXT_START_DATE DATE NULL	
	EXT_END_DATE DATE NULL	
FACULTY	FAC_CODE VARCHAR2(2) NOT NULL	FAC_CODE
	ORG_CODE VARCHAR2(2) NULL	
	FAC_DESC VARCHAR2(30) NOT NULL	
	F A C _ D E S C _ E N G VARCHAR2(30) NULL	
	BRIEF_NAME VARCHAR2 (5) NULL	
FUND	FUND_CODE VARCHAR2 (2) NOT NULL	FUND_CODE
	FUND_DESC VARCHAR2 (50) NOT NULL	
MARRITAL_STATUS	MARRITAL_STATUS VARCHAR2(2) NOT NULL	MARRITAL_STATUS
	MARRITAU_DESC VARCHAR2(20) NOT NULL	
NATION	NATION_CODE VARCHAR2 (2) NOT NULL	NATION_CODE

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อดารง	ชื่อเขต	คีย์หลัก
	NATION_DESC VARCHAR2 (20) NOT NULL	
OLD_NAME	P_ID VARCHAR2(7) NOT NULL	P_ID
	LAST_UPD DATE NOT NULL	LAST_UPD
	P R E N A M E _ T H A I VARCHAR2(20) NULL	
	NAME_THAI VARCHAR2 (30) NULL	
	S U R N A M E _ T H A I VARCHAR2(30) NULL	
	P R E N A M E _ E N G VARCHAR2(20) NULL	
	NAME_ENG VARCHAR2 (30) NULL	
	S U R N A M E _ E N G VARCHAR2(30) NULL	
ORGANIZATION	ORG_CODE VARCHAR2(2) NOT NULL	ORG_CODE
	ORG_DESC VARCHAR2 (30) NOT NULL	
PARENT	P_ID VARCHAR2(7) NOT NULL	P_ID
	FT_NAME VARCHAR2(30) NOT NULL	





## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	FT_SURNAME VARCHAR2 (30) NOT NULL	
	FT_BIRTH_DATE DATE NULL	
	FT_BIRTH_PLACE VARCHAR2(2) NULL	
	FT_RACE_CODE VARCHAR2(2) NULL	
	FT_NATION_CODE VARCHAR2(2) NULL	
	FT_RELI_CODE VARCHAR2(2) NULL	
	FT_PROF_CODE VARCHAR2(1) NULL	
	FT_OFFICE VARCHAR2(50) NULL	
	FT_SALARY NUMBER(7,3) NULL	
	FT_LIFE_STATUS VARCHAR2(1) NULL	
	MT_NAME VARCHAR2(30) NOT NULL	
	MT_SURNAME VARCHAR2 (30) NOT NULL	
	MT_BIRTH_DATE DATE NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	MT_BIRTH_PLACE VARCHAR2(2) NULL	
	MT_RACE_CODE VARCHAR2(2) NULL	
	MT_NATION_CODE VARCHAR2(2) NULL	
	MT_RELI_CODE VARCHAR2(2) NULL	
	MT_PROF_CODE VARCHAR2(1) NULL	
	MT_OFFICE VARCHAR2 (50) NULL	
	MT_SALARY NUMBER(7,3) NULL	
	MT_LIFE_STATUS VARCHAR2(1) NULL	
PC_LEVEL	PC_LEVEL NUMBER(2) NOT NULL	PC_LEVEL
	PC_DESC VARCHAR2(10) NULL	
PERSON	P_ID VARCHAR2(7) NOT	P_ID
	DEPT_CODE VARCHAR2(3) NULL	
	FAC_CODE VARCHAR2(2) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	DIVISION_CODE VARCHAR2(2) NULL	
	CITIZEN_ID VARCHAR2(13) NULL	
	OFFICER_ID VARCHAR2 (13) NULL	
	P R E N A M E _ T H A I VARCHAR2(20) NULL	
	NAME_THAI VARCHAR2 (30) NULL	
	S U R N A M E _ T H A I VARCHAR2(30) NULL	
	P R E N A M E _ E N G VARCHAR2(20) NULL	
	NAME_ENG VARCHAR2 (30) NULL	
	S U R N A M E _ E N G VARCHAR2(30) NULL	
	SEX VARCHAR2(1) NULL	
	BLOOD_TYPE CHAR(2) NULL	
	BIRTH_DATE DATE NULL	
	BIRTH_ID VARCHAR2(10) NULL	
	BIRTH_PLACE VARCHAR2 (2) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	RACE_CODE VARCHAR2 (2) NULL	
	NATION_CODE VARCHAR2 (2) NULL	
	RELIGION_CODE VARCHAR2(2) NULL	
	MARRITAL_STATUS VARCHAR2(2) NULL	
	TAX_ID VARCHAR2(10) NULL	
	DOMICLINE_CODE VARCHAR2(2) NULL	
	OFFICE_TEL VARCHAR2 (20) NULL	
	EXPIRE_YEAR VARCHAR2 (4) NULL	
PERSON_POSITION	P_ID VARCHAR2(7) NOT NULL	P_ID
	CMD_ID VARCHAR2(15) NOT NULL	CMD_ID
	CMD_YEAR NUMBER(4) NOT NULL	CMD_YEAR
	PROMOTION_CODE NUMBER(2) NULL	
	ASSIGN_DATE DATE NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	POS_NO VARCHAR2(5) NULL	
	POS_TYPE NUMBER(2) NULL	
	PC_LEVEL NUMBER(2) NULL	
	SAL_GRADE NUMBER(2) NULL	
	SALARY NUMBER(2) NULL	
PERSON_PROJECT	P_ID VARCHAR2(7) NOT NULL	P_ID
	PROJ_ID VARCHAR2(7) NOT NULL	PROJ_ID
	NUM_PAGE_WORK NUMBER(6) NULL	
	RATIO_WORK NUMBER (5,2) NULL	
PERSON_RESEARCH	P_ID VARCHAR2(7) NOT NULL	P_ID
	RES_ID VARCHAR2(7) NOT NULL	RES_ID
	RATIO_WORK NUMBER (5,2) NULL	
	RES_STATUS_HEAD VARCHAR2(1) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	FUND_CODE VARCHAR2 (2) NULL	
PICTURE	P_ID VARCHAR2(7) NOT NULL	P_ID
	PICTURE LONG RAW NULL	
POSITION	POS_NO VARCHAR2(5) NOT NULL	POS_NO
	DIVISION_CODE VARCHAR2(2) NULL	
	ORG_CODE VARCHAR2(2) NULL	
	POS_TYPE NUMBER(2) NULL	
	POS_DATE DATE NULL	
	DEPT_CODE VARCHAR2(3) NULL	
	FAC_CODE VARCHAR2(2) NULL	
	POS_STATUS_CODE VARCHAR2(2) NULL	
	POS_YEAR DATE NULL	
	POS_STATUS_DATE DATE NULL	
POSITION_STATUS	POS_STATUS_CODE VARCHAR2(2) NOT NULL	POS_STATUS_CODE

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	POS_STATUS_DESC VARCHAR2(20) NOT NULL	
POSITION_TYPE	POS_TYPE NUMBER(2) NOT NULL	POS_TYPE
	EDU_LEVEL_CODE VARCHAR2(2) NULL	
	DUTY_CODE VARCHAR2(4) NULL	
	PC_START NUMBER(2) NULL	
	PC_END NUMBER(2) NULL	
	POS_DESC VARCHAR2(20) NULL	
	POS_JOB LONG VARCHAR NULL	
PRE_NAME	ID VARCHAR2(2) NOT NULL	ID
	TH VARCHAR2(20) NOT NULL	
	ENG VARCHAR2(20) NOT NULL	
PROFESSION	PROF_CODE VARCHAR2(1) NOT NULL	PROF_CODE
	PROF_DESC VARCHAR2(30) NOT NULL	
PROJECT	PROJ_ID VARCHAR2(7) NOT NULL	PROJ_ID
	PROJ_NAME VARCHAR2(30) NOT NULL	
	PROJ_TYPE_CODE VARCHAR2(2) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	PUBL_YEAR NUMBER(4) NULL	
	NUM_PAGE NUMBER(5) NULL	
PROJECT_TYPE	PROJ_TYPE_CODE VARCHAR2(2) NOT NULL	PROJ_TYPE_CODE
	PROJ_TYPE_DESC VARCHAR2(20) NOT NULL	
PROMOTION_TYPE	PROMOTION_CODE NUMBER (2) NOT NULL	PROMOTION_CODE
	PROMOTION_DESC VARCHAR2(20) NOT NULL	
PROVINCE	PROVINCE_CODE VARCHAR2 (2) NOT NULL	PROVINCE_CODE
	PROVINCE_DESC VARCHAR2 (20) NOT NULL	
PUNISHMENT	P_ID VARCHAR2(7) NOT NULL	P_ID
	CMD_ID VARCHAR2(15) NOT NULL	CMD_ID
	CMD_YEAR NUMBER(4) NOT NULL	CMD_YEAR
	PUNISH_CODE VARCHAR2(1) NOT NULL	PUNISH_CODE
	START_DATE DATE NULL	
	END_DATE DATE NULL	
PUNISH_TYPE	PUNISH_CODE VARCHAR2(1) NOT NULL	PUNISH_CODE



## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	PUNISH_DESC VARCHAR2(20) NOT NULL	
RACE	RACE_CODE VARCHAR2(2) NOT NULL	RACE_CODE
	RACE_DESC VARCHAR2(20) NULL	
RECEPT_REWARD	P_ID VARCHAR2(7) NOT NULL	P_ID
	REW_CODE VARCHAR2(2) NOT NULL	REW_CODE
	RECPT_DATE DATE NULL	
	REW_RETURN_DATE DATE NULL	
	DETAIL VARCHAR2(100) NULL	
RELATION	RELATION_CODE VARCHAR2 (2) NOT NULL	RELATION_CODE
	RELATION_DESC VARCHAR2 (20) NOT NULL	
RELIGION	RELIGION_CODE VARCHAR2 (2) NOT NULL	RELIGION_CODE
	RELIGION_DESC VARCHAR2 (20) NOT NULL	
RESEARCH	RES_ID VARCHAR2(7) NOT NULL	RES_ID
	RES_NAME VARCHAR2(40) NOT NULL	
	START_DATE DATE NULL	
	END_DATE DATE NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	FINISH_CODE VARCHAR2(1) NULL	
	FINISH_DATE DATE NULL	
RESPONCE	P_ID VARCHAR2(7) NOT NULL	P_ID
	SEQ NUMBER(2) NOT NULL	SEQ
	ORG_CODE VARCHAR2(2) NULL	
	DEPT_CODE VARCHAR2(3) NULL	
	FAC_CODE VARCHAR2(2) NULL	
	CMD_ID VARCHAR2(15) NULL	
	CMD_YEAR NUMBER(4) NULL	
	WORK_CODE VARCHAR2(1) NOT NULL	
	START_DATE DATE NULL	
	END_DATE DATE NULL	
	AVG_TIME NUMBER(4,2) NULL	
	LOCATION VARCHAR2(50) NULL	
	TITLE VARCHAR2(30) NULL	
	DIVISION_CODE VARCHAR2 (2) NULL	
	DETAIL VARCHAR2(50) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
RES_FINISH_STATUS	FINISH_CODE VARCHAR2(1) NOT NULL	FINISH_CODE
	FINISH_DESC VARCHAR2(40) NOT NULL	
REWARD	REW_CODE VARCHAR2(2) NOT NULL	REW_CODE
	REW_BRIEF_NAME VARCHAR2(10) NULL	
	REW_NAME VARCHAR2(30) NOT NULL	
	REW_PRICE_M NUMBER(6) NULL	
	REW_PRICE_F NUMBER(6) NULL	
	REW_RETURN VARCHAR2(1) NULL	
SALARY_GRADE	SAL_GRADE NUMBER(2) NOT NULL	SAL_GRADE
	PC_LEVEL NUMBER(2) NOT NULL	PC_LEVEL
	SALARY NUMBER(5) NOT NULL	
SPOUSE	P_ID VARCHAR2(7) NOT NULL	P_ID
	MAR_DATE DATE NOT NULL	MAR_DATE
	CITIZEN_ID VARCHAR2(13) NULL	
	PRENAME_THAI VARCHAR2 (20) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	NAME_THAI VARCHAR2(30) NULL	
	SURNAME_THAI VARCHAR2 (30) NULL	
	PRENAME_ENG VARCHAR2 (20) NULL	
	NAME_ENG VARCHAR2(30) NULL	
	SURNAME_ENG VARCHAR2 (30) NULL	
	SEX VARCHAR2(1) NULL	
	TAX_ID VARCHAR2(10) NULL	
	OFFICE VARCHAR2(50) NULL	
	SALARY NUMBER(6) NULL	
	PROF_CODE VARCHAR2(1) NULL	
	S_STATUS VARCHAR2(1) NULL	
	MAR_ID VARCHAR2(15) NULL	
	MAR_LOCATE VARCHAR2 (20) NULL	
	MAR_PROVINCE_CODE VARCHAR2(2) NULL	
	DIV_DATE DATE NULL	
	DIV_ID VARCHAR2(15) NULL	
	DIV_LOCATE VARCHAR2(20) NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	DIV_PROVINCE_CODE VARCHAR2(2) NULL	
SPOUSE_STATUS	S_STATUS VARCHAR2(1) NOT NULL	S_STATUS
	S_DESC VARCHAR2(20) NOT NULL	
TERMINATION	P_ID VARCHAR2(7) NOT NULL	P_ID
	CMD_ID VARCHAR2(15) NOT NULL	CMD_ID
	CMD_YEAR NUMBER(4) NOT NULL	CMD_YEAR
	TERM_DATE DATE NULL	
	TERM_REASON_CODE VARCHAR2(1) NULL	
TERM_REASON	TERM_REASON_CODE VARCHAR2(1) NOT NULL	TERM_REASON_CODE
	TERM_REASON_DESC VARCHAR2(30) NOT NULL	
TRAIN_VISIT	P_ID VARCHAR2(7) NOT NULL	P_ID
	SEQ NUMBER(2) NOT NULL	SEQ
	TV_TYPE NUMBER(2) NOT NULL	
	FUND_CODE VARCHAR2(2) NULL	
	TRAIN_VISIT_FIELD VARCHAR2(30) NULL	
	DATE_BEGIN DATE NULL	

## ตาราง ข ตารางโดยสมบูรณ์ (ต่อ)

ชื่อตาราง	ชื่อเขต	คีย์หลัก
	DATE_END DATE NULL	
	INSTITUTE VARCHAR2(30) NULL	
	LOCATION VARCHAR2(30) NULL	
TRAIN_VISIT_TYPE	TV_TYPE NUMBER(2) NOT NULL	TV_TYPE
	TV_DESC VARCHAR2(20) NOT NULL	
WORK_TYPE	WORK_CODE VARCHAR2(1) NOT NULL	WORK_CODE
	WORK_DESC VARCHAR2(30) NOT NULL	

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



ภาคผนวก ค

ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย

ความสัมพันธ์ของตารางแสดงชื่อตาราง เอนทิตีที่มีความสัมพันธ์กัน และแสดงกฎการจัดการ  
รวมถึงชื่อความสัมพันธ์



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



Physical FK: PC\_END

Logical FK: PC\_END

Parent Table: PC\_LEVEL

Child Table: POSITION\_TYPE

Parent to Child Rule: A PC\_LEVEL R many POSITION\_TYPES.

Child to Parent Rule: A POSITION\_TYPE 100 zero or one PC\_LEVELs.

Physical FK: PC\_START

Logical FK: PC\_START

Parent Table: PC\_LEVEL

Child Table: POSITION\_TYPE

Parent to Child Rule: A PC\_LEVEL R many POSITION\_TYPES.

Child to Parent Rule: A POSITION\_TYPE 101 zero or one PC\_LEVELs.

Physical FK: POS\_TYPE

Logical FK: POS\_TYPE

Parent Table: POSITION\_TYPE

Child Table: POSITION

Parent to Child Rule: A POSITION\_TYPE R many POSITIONS.

Child to Parent Rule: A POSITION 102 zero or one POSITION\_TYPES.

Physical FK: POS\_TYPE

Logical FK: POS\_TYPE

Parent Table: POSITION\_TYPE

Child Table: PERSON\_POSITION

Parent to Child Rule: A POSITION\_TYPE R many PERSON\_POSITIONS.

Child to Parent Rule: A PERSON\_POSITION 104 zero or one POSITION\_TYPES.

Physical FK: POS\_NO

Logical FK: POS\_NO

Parent Table: POSITION

Child Table: PERSON\_POSITION

Parent to Child Rule: A POSITION R many PERSON\_POSITIONS.

Child to Parent Rule: A PERSON\_POSITION 105 zero or one POSITIONs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: TRAIN\_VISIT

Parent to Child Rule: A PERSON R many TRAIN\_VISITs.

Child to Parent Rule: A TRAIN\_VISIT 108 exactly one PERSON.

Physical FK: FUND\_CODE

Logical FK: FUND\_CODE

Parent Table: FUND

Child Table: TRAIN\_VISIT

Parent to Child Rule: A FUND R many TRAIN\_VISITs.

Child to Parent Rule: A TRAIN\_VISIT 110 zero or one FUNDS.

Physical FK: TV\_TYPE

Logical FK: TV\_TYPE

Parent Table: TRAIN\_VISIT\_TYPE

Child Table: TRAIN\_VISIT

Parent to Child Rule: A TRAIN\_VISIT\_TYPE R many TRAIN\_VISITs.

Child to Parent Rule: A TRAIN\_VISIT 111 zero or one TRAIN\_VISIT\_TYPEs.

Physical FK: PROMOTION\_CODE

Logical FK: PROMOTION\_CODE

Parent Table: PROMOTION\_TYPE

Child Table: PERSON\_POSITION

Parent to Child Rule: A PROMOTION\_TYPE R many PERSON\_POSITIONs.

Child to Parent Rule: A PERSON\_POSITION 112 zero or one PROMOTION\_TYPEs.

Physical FK: DUTY\_CODE

Logical FK: DUTY\_CODE

Parent Table: DUTY

Child Table: POSITION\_TYPE

Parent to Child Rule: A DUTY R many POSITION\_TYPEs.

Child to Parent Rule: A POSITION\_TYPE 113 zero or one DUTYs.

Parent Table: PERSON

Child Table: SPOUSE

Parent to Child Rule: A PERSON R many SPOUSEs.

Child to Parent Rule: A SPOUSE 114 many PERSONs.

Physical FK: DEPT\_CODE

Logical FK: DEPT\_CODE

Parent Table: DEPARTMENT

Child Table: RESPONCE

Parent to Child Rule: A DEPARTMENT R many RESPONCEs.

Child to Parent Rule: A RESPONCE 115 zero or one DEPARTMENTs.

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Physical FK: ORG\_CODE

Logical FK: ORG\_CODE

Parent Table: ORGANIZATION

Child Table: RESPONCE

Parent to Child Rule: An ORGANIZATION R many RESPONCEs.

Child to Parent Rule: A RESPONCE 116 zero or one ORGANIZATIONs.

Physical FK: EDU\_LEVEL\_CODE

Logical FK: EDU\_LEVEL\_CODE

Parent Table: EDUCATION\_LEVEL

Child Table: POSITION\_TYPE

Parent to Child Rule: An EDUCATION\_LEVEL R many POSITION\_TYPEs.

Child to Parent Rule: A POSITION\_TYPE 117 zero or one EDUCATION\_LEVELs.

Physical FK: ORG\_CODE

Logical FK: ORG\_CODE

Parent Table: ORGANIZATION

Child Table: POSITION

Parent to Child Rule: An ORGANIZATION R many POSITIONS.

Child to Parent Rule: A POSITION 118 zero or one ORGANIZATIONs.

Physical FK: DIVISION\_CODE

Logical FK: DIVISION\_CODE

Parent Table: DIVISION

Child Table: POSITION

Parent to Child Rule: A DIVISION R many POSITIONS.

Child to Parent Rule: A POSITION 119 zero or one DIVISIONs.

Physical FK: DIVISION\_CODE

Logical FK: DIVISION\_CODE

Parent Table: DIVISION

Child Table: PERSON

Parent to Child Rule: A DIVISION R many PERSONs.

Child to Parent Rule: A PERSON 120 zero or one DIVISIONs.

Physical FK: DEPT\_CODE

Logical FK: DEPT\_CODE

Parent Table: DEPARTMENT

Child Table: PERSON

Parent to Child Rule: A DEPARTMENT R many PERSONs.

Child to Parent Rule: A PERSON 121 zero or one DEPARTMENTs.

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Physical FK: PUNISH\_CODE

Logical FK: PUNISH\_CODE

Parent Table: PUNISH\_TYPE

Child Table: PUNISHMENT

Parent to Child Rule: A PUNISH\_TYPE R many PUNISHMENTs.



Child to Parent Rule: A PUNISHMENT 88 exactly one PUNISH\_TYPE.

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Parent Table: DEPARTMENT

Child Table: DIVISION

Parent to Child Rule: A DEPARTMENT R many DIVISIONs.

Child to Parent Rule: A DIVISION 90 zero or one DEPARTMENTS.

Physical FK: DEPT\_CODE

Logical FK: DEPT\_CODE

Physical FK: PC\_LEVEL

Logical FK: PC\_LEVEL

Parent Table: PC\_LEVEL

Child Table: SALARY\_GRADE

Parent to Child Rule: A PC\_LEVEL R many SALARY\_GRADEs.

Child to Parent Rule: A SALARY\_GRADE 93 exactly one PC\_LEVEL.

Physical FK: PC\_LEVEL

Logical FK: PC\_LEVEL

Parent Table: SALARY\_GRADE

Child Table: PERSON\_POSITION

Parent to Child Rule: A SALARY\_GRADE R many PERSON\_POSITIONs.

Child to Parent Rule: A PERSON\_POSITION 94 zero or one SALARY\_GRADEs.

Physical FK: SAL\_GRADE

Logical FK: SAL\_GRADE

Physical FK: ORG\_CODE

Logical FK: ORG\_CODE

Parent Table: ORGANIZATION

Child Table: FACULTY

Parent to Child Rule: An ORGANIZATION R many FACULTYs.

Child to Parent Rule: A FACULTY 98 zero or one ORGANIZATIONS.

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Parent Table: FACULTY

Child Table: COMMAND

Parent to Child Rule: A FACULTY R many COMMANDs.

Child to Parent Rule: A COMMAND 99 zero or one FACULTYs.

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Parent Table: FACULTY

Child Table: DEPARTMENT

Parent to Child Rule: A FACULTY SYS\_C005099 many DEPARTMENTs.

Child to Parent Rule: A DEPARTMENT is associated with exactly one FACULTY.

Physical FK: BIRTH\_PLACE

Logical FK: BIRTH\_PLACE

Parent Table: PROVINCE

Child Table: PERSON

Parent to Child Rule: A PROVINCE SYS\_C005102 many PERSONs.

Child to Parent Rule: A PERSON is associated with zero or one PROVINCEs.

Physical FK: RACE\_CODE

Logical FK: RACE\_CODE

Parent Table: RACE

Child Table: PERSON

Parent to Child Rule: A RACE SYS\_C005103 many PERSONs.

Child to Parent Rule: A PERSON is associated with zero or one RACEs.

Physical FK: NATION\_CODE

Logical FK: NATION\_CODE

Parent Table: NATION

Child Table: PERSON

Parent to Child Rule: A NATION SYS\_C005104 many PERSONs.

Child to Parent Rule: A PERSON is associated with zero or one NATIONs.

Physical FK: RELIGION\_CODE

Logical FK: RELIGION\_CODE

Parent Table: RELIGION

Child Table: PERSON

Parent to Child Rule: A RELIGION SYS\_C005105 many PERSONs.

Child to Parent Rule: A PERSON is associated with zero or one RELIGIONs.

Physical FK: MARRITAL\_STATUS

Logical FK: MARRITAL\_STATUS

Parent Table: MARRITAL\_STATUS

Child Table: PERSON

Parent to Child Rule: A MARRITAL\_STATUS SYS\_C005106 many PERSONs.

Child to Parent Rule: A PERSON is associated with zero or one MARRITAL\_STATUSs.

Physical FK: DOMICLINE\_CODE

Logical FK: DOMICLINE\_CODE

Parent Table: PROVINCE

Child Table: PERSON

Parent to Child Rule: A PROVINCE SYS\_C005107 many PERSONs.

Child to Parent Rule: A PERSON is associated with zero or one PROVINCEs.

Physical FK: BIRTH\_PLACE

Logical FK: BIRTH\_PLACE

Parent Table: PROVINCE

Child Table: CHILD

Parent to Child Rule: A PROVINCE SYS\_C005114 many CHILDs.

Child to Parent Rule: A CHILD is associated with zero or one PROVINCEs.

Physical FK: PARENT1

Logical FK: PARENT1

Parent Table: PERSON

Child Table: CHILD

Parent to Child Rule: A PERSON SYS\_C005115 many CHILDS.

Child to Parent Rule: A CHILD is associated with exactly one PERSON.

Physical FK: PARENT2

Logical FK: PARENT2

Parent Table: PERSON

Child Table: CHILD

Parent to Child Rule: A PERSON SYS\_C005116 many CHILDS.

Child to Parent Rule: A CHILD is associated with zero or one PERSONS.

Physical FK: WIDRAW

Logical FK: WIDRAW

Parent Table: PERSON

Child Table: CHILD

Parent to Child Rule: A PERSON SYS\_C005117 many CHILDS.

Child to Parent Rule: A CHILD is associated with zero or one PERSONS.

Physical FK: EDU\_LEVEL\_CODE

Logical FK: EDU\_LEVEL\_CODE

Parent Table: EDUCATION\_LEVEL

Child Table: CHILD

Parent to Child Rule: An EDUCATION\_LEVEL SYS\_C005118 many CHILDS.

Child to Parent Rule: A CHILD is associated with zero or one EDUCATION\_LEVELS.

Physical FK: MARRITAL\_STATUS

Logical FK: MARRITAL\_STATUS

Parent Table: MARRITAL\_STATUS

Child Table: CHILD

Parent to Child Rule: A MARRITAL\_STATUS SYS\_C005119 many CHILDS.

Child to Parent Rule: A CHILD is associated with zero or one MARRITAL\_STATUSES.

Physical FK: P\_ID

Logical FK: P\_ID



Parent Table: PERSON

Child Table: EXT\_POSITION

Parent to Child Rule: A PERSON SYS\_C005125 many EXT\_POSITIONs.

Child to Parent Rule: An EXT\_POSITION is associated with exactly one PERSON.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: PICTURE

Parent to Child Rule: A PERSON SYS\_C005128 many PICTUREs.

Child to Parent Rule: A PICTURE is associated with exactly one PERSON.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: ADDRESS

Parent to Child Rule: A PERSON SYS\_C005132 many ADDRESSs.

Child to Parent Rule: An ADDRESS is associated with exactly one PERSON.

Physical FK: PROVINCE\_CODE

Logical FK: PROVINCE\_CODE

Parent Table: PROVINCE

Child Table: ADDRESS

Parent to Child Rule: A PROVINCE SYS\_C005133 many ADDRESSs.

Child to Parent Rule: An ADDRESS is associated with zero or one PROVINCEs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: CONTACT

Parent to Child Rule: A PERSON SYS\_C005138 many CONTACTs.

Child to Parent Rule: A CONTACT is associated with exactly one PERSON.

Physical FK: PROVINCE\_CODE

Logical FK: PROVINCE\_CODE

Parent Table: PROVINCE

Child Table: CONTACT

Parent to Child Rule: A PROVINCE SYS\_C005139 many CONTACTs.

Child to Parent Rule: A CONTACT is associated with zero or one PROVINCEs.

Physical FK: RELATION\_CODE

Logical FK: RELATION\_CODE

Parent Table: RELATION

Child Table: CONTACT

Parent to Child Rule: A RELATION SYS\_C005140 many CONTACTs.

Child to Parent Rule: A CONTACT is associated with zero or one RELATIONs.

Physical FK: PROF\_CODE

Logical FK: PROF\_CODE

Parent Table: PROFESSION

Child Table: SPOUSE

Parent to Child Rule: A PROFESSION SYS\_C005144 many SPOUSEs.

Child to Parent Rule: A SPOUSE is associated with zero or one PROFESSIONs.

Physical FK: S\_STATUS

Logical FK: S\_STATUS

Parent Table: SPOUSE\_STATUS

Child Table: SPOUSE

Parent to Child Rule: A SPOUSE\_STATUS SYS\_C005145 many SPOUSEs.

Child to Parent Rule: A SPOUSE is associated with zero or one SPOUSE\_STATUSs.

Physical FK: MAR\_PROVINCE\_CODE

Logical FK: MAR\_PROVINCE\_CODE

Parent Table: PROVINCE

Child Table: SPOUSE

Parent to Child Rule: A PROVINCE SYS\_C005146 many SPOUSEs.

Child to Parent Rule: A SPOUSE is associated with zero or one PROVINCEs.

Physical FK: DIV\_PROVINCE\_CODE

Logical FK: DIV\_PROVINCE\_CODE

Parent Table: PROVINCE

Child Table: SPOUSE

Parent to Child Rule: A PROVINCE SYS\_C005147 many SPOUSEs.

Child to Parent Rule: A SPOUSE is associated with zero or one PROVINCEs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: PARENT

Parent to Child Rule: A PERSON SYS\_C005154 many PARENTs.

Child to Parent Rule: A PARENT is associated with exactly one PERSON.

Physical FK: FT\_BIRTH\_PLACE

Logical FK: FT\_BIRTH\_PLACE

Parent Table: PROVINCE

Child Table: PARENT

Parent to Child Rule: A PROVINCE SYS\_C005155 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one PROVINCEs.

Physical FK: FT\_RACE\_CODE

Logical FK: FT\_RACE\_CODE

Parent Table: RACE

Child Table: PARENT

Parent to Child Rule: A RACE SYS\_C005156 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one RACEs.

Physical FK: FT\_NATION\_CODE

Logical FK: FT\_NATION\_CODE

Parent Table: NATION

Child Table: PARENT

Parent to Child Rule: A NATION SYS\_C005157 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one NATIONs.

Physical FK: FT\_RELI\_CODE

Logical FK: FT\_RELI\_CODE

Parent Table: RELIGION

Child Table: PARENT

Parent to Child Rule: A RELIGION SYS\_C005158 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one RELIGIONs.

Physical FK: FT\_PROF\_CODE

Logical FK: FT\_PROF\_CODE

Parent Table: PROFESSION

Child Table: PARENT

Parent to Child Rule: A PROFESSION SYS\_C005159 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one PROFESSIONs.

Physical FK: MT\_BIRTH\_PLACE

Logical FK: MT\_BIRTH\_PLACE

Parent Table: PROVINCE

Child Table: PARENT

Parent to Child Rule: A PROVINCE SYS\_C005160 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one PROVINCEs.

Physical FK: MT\_RACE\_CODE

Logical FK: MT\_RACE\_CODE

Parent Table: RACE

Child Table: PARENT

Parent to Child Rule: A RACE SYS\_C005161 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one RACEs.

Physical FK: MT\_NATION\_CODE

Logical FK: MT\_NATION\_CODE

Parent Table: NATION

Child Table: PARENT

Parent to Child Rule: A NATION SYS\_C005162 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one NATIONS.

Physical FK: MT\_RELI\_CODE

Logical FK: MT\_RELI\_CODE

Parent Table: RELIGION

Child Table: PARENT

Parent to Child Rule: A RELIGION SYS\_C005163 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one RELIGIONs.

Physical FK: MT\_PROF\_CODE

Logical FK: MT\_PROF\_CODE

Parent Table: PROFESSION

Child Table: PARENT

Parent to Child Rule: A PROFESSION SYS\_C005164 many PARENTs.

Child to Parent Rule: A PARENT is associated with zero or one PROFESSIONs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: OLD\_NAME

Parent to Child Rule: A PERSON SYS\_C005168 many OLD\_NAMEs.

Child to Parent Rule: An OLD\_NAME is associated with exactly one PERSON.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: EDUCATION

Parent to Child Rule: A PERSON SYS\_C005173 many EDUCATIONs.

Child to Parent Rule: An EDUCATION is associated with exactly one PERSON.

Physical FK: EDU\_LEVEL\_CODE

Logical FK: EDU\_LEVEL\_CODE

Parent Table: EDUCATION\_LEVEL

Child Table: EDUCATION

Parent to Child Rule: An EDUCATION\_LEVEL SYS\_C005174 many EDUCATIONs.

Child to Parent Rule: An EDUCATION is associated with exactly one EDUCATION\_LEVEL.

Physical FK: CURR\_CODE

Logical FK: CURR\_CODE

Parent Table: CURRICULUM

Child Table: EDUCATION

Parent to Child Rule: A CURRICULUM SYS\_C005175 many EDUCATIONs.

Child to Parent Rule: An EDUCATION is associated with zero or one CURRICULUMs.

Physical FK: COUNTRY\_CODE

Logical FK: COUNTRY\_CODE

Parent Table: COUNTRY

Child Table: EDUCATION

Parent to Child Rule: A COUNTRY SYS\_C005176 many EDUCATIONs.

Child to Parent Rule: An EDUCATION is associated with zero or one COUNTRYs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: ABS\_ANUAL

Parent to Child Rule: A PERSON SYS\_C005186 many ABS\_ANUALs.

Child to Parent Rule: An ABS\_ANUAL is associated with exactly one PERSON.

Physical FK: ABS\_CODE

Logical FK: ABS\_CODE

Parent Table: ABS\_TYPE

Child Table: ABS\_ANUAL

Parent to Child Rule: An ABS\_TYPE SYS\_C005187 many ABS\_ANUALs.

Child to Parent Rule: An ABS\_ANUAL is associated with exactly one ABS\_TYPE.

Physical FK: CMD\_CODE

Logical FK: CMD\_CODE

Parent Table: CMD\_TYPE

Child Table: COMMAND

Parent to Child Rule: A CMD\_TYPE SYS\_C005193 many COMMANDs.

Child to Parent Rule: A COMMAND is associated with exactly one CMD\_TYPE.

Physical FK: ORG\_CODE

Logical FK: ORG\_CODE

Parent Table: ORGANIZATION

Child Table: COMMAND

Parent to Child Rule: An ORGANIZATION SYS\_C005194 many COMMANDs.

Child to Parent Rule: A COMMAND is associated with exactly one ORGANIZATION.

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Parent Table: DEPARTMENT

Child Table: COMMAND

Parent to Child Rule: A DEPARTMENT SYS\_C005196 many COMMANDs.

Child to Parent Rule: A COMMAND is associated with zero or one DEPARTMENTS.

Physical FK: DEPT\_CODE

Logical FK: DEPT\_CODE

Physical FK: DEPT\_CODE

Logical FK: DEPT\_CODE

Parent Table: DEPARTMENT

Child Table: POSITION

Parent to Child Rule: A DEPARTMENT SYS\_C005208 many POSITIONS.

Child to Parent Rule: A POSITION is associated with zero or one DEPARTMENTS.

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Physical FK: FAC\_CODE

Logical FK: FAC\_CODE

Parent Table: FACULTY

Child Table: POSITION

Parent to Child Rule: A FACULTY SYS\_C005209 many POSITIONs.

Child to Parent Rule: A POSITION is associated with zero or one FACULTYs.

Physical FK: POS\_STATUS\_CODE

Logical FK: POS\_STATUS\_CODE

Parent Table: POSITION\_STATUS

Child Table: POSITION

Parent to Child Rule: A POSITION\_STATUS SYS\_C005210 many POSITIONs.

Child to Parent Rule: A POSITION is associated with zero or one POSITION\_STATUSs.

Physical FK: FINISH\_CODE

Logical FK: FINISH\_CODE

Parent Table: RES\_FINISH\_STATUS

Child Table: RESEARCH

Parent to Child Rule: A RES\_FINISH\_STATUS SYS\_C005215 many RESEARCHs.

Child to Parent Rule: A RESEARCH is associated with zero or one RES\_FINISH\_STATUSs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: RESPONCE

Parent to Child Rule: A PERSON SYS\_C005221 many RESPONCEs.

Child to Parent Rule: A RESPONCE is associated with exactly one PERSON.

Physical FK: WORK\_CODE

Logical FK: WORK\_CODE

Parent Table: WORK\_TYPE

Child Table: RESPONCE

Parent to Child Rule: A WORK\_TYPE SYS\_C005222 many RESPONCEs.

Child to Parent Rule: A RESPONCE is associated with exactly one WORK\_TYPE.

Physical FK: CMD\_ID

Logical FK: CMD\_ID



Parent Table: COMMAND

Child Table: RESPONCE

Parent to Child Rule: A COMMAND SYS\_C005223 many RESPONCEs.

Child to Parent Rule: A RESPONCE is associated with zero or one COMMANDs.

Physical FK: CMD\_YEAR

Logical FK: CMD\_YEAR

Physical FK: DIVISION\_CODE

Logical FK: DIVISION\_CODE

Parent Table: DIVISION

Child Table: RESPONCE

Parent to Child Rule: A DIVISION SYS\_C005224 many RESPONCEs.

Child to Parent Rule: A RESPONCE is associated with zero or one DIVISIONs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: PERSON\_RESEARCH

Parent to Child Rule: A PERSON SYS\_C005228 many PERSON\_RESEARCHs.

Child to Parent Rule: A PERSON\_RESEARCH is associated with exactly one PERSON.

Physical FK: FUND\_CODE

Logical FK: FUND\_CODE

Parent Table: FUND

Child Table: PERSON\_RESEARCH

Parent to Child Rule: A FUND SYS\_C005229 many PERSON\_RESEARCHs.

Child to Parent Rule: A PERSON\_RESEARCH is associated with zero or one FUNDS.

Physical FK: RES\_ID

Logical FK: RES\_ID

Parent Table: RESEARCH

Child Table: PERSON\_RESEARCH

Parent to Child Rule: A RESEARCH SYS\_C005230 many PERSON\_RESEARCHs.

Child to Parent Rule: A PERSON\_RESEARCH is associated with exactly one RESEARCH.

Physical FK: PROJ\_TYPE\_CODE

Logical FK: PROJ\_TYPE\_CODE

Parent Table: PROJECT\_TYPE

Child Table: PROJECT

Parent to Child Rule: A PROJECT\_TYPE SYS\_C005234 many PROJECTs.

Child to Parent Rule: A PROJECT is associated with zero or one PROJECT\_TYPEs.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: PERSON\_POSITION

Parent to Child Rule: A PERSON SYS\_C005240 many PERSON\_POSITIONs.

Child to Parent Rule: A PERSON\_POSITION is associated with exactly one PERSON.

Physical FK: CMD\_ID

Logical FK: CMD\_ID

Parent Table: COMMAND

Child Table: PERSON\_POSITION

Parent to Child Rule: A COMMAND SYS\_C005241 many PERSON\_POSITIONs.

Child to Parent Rule: A PERSON\_POSITION is associated with exactly one COMMAND.

Physical FK: CMD\_YEAR

Logical FK: CMD\_YEAR

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: PERSON\_PROJECT

Parent to Child Rule: A PERSON SYS\_C005254 many PERSON\_PROJECTs.

Child to Parent Rule: A PERSON\_PROJECT is associated with exactly one PERSON.

Physical FK: PROJ\_ID

Logical FK: PROJ\_ID

Parent Table: PROJECT

Child Table: PERSON\_PROJECT

Parent to Child Rule: A PROJECT SYS\_C005255 many PERSON\_PROJECTS.

Child to Parent Rule: A PERSON\_PROJECT is associated with exactly one PROJECT.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: ABS\_QUOTAS

Parent to Child Rule: A PERSON SYS\_C005259 many ABS\_QUOTASs.

Child to Parent Rule: An ABS\_QUOTAS is associated with exactly one PERSON.

Physical FK: ABS\_CODE

Logical FK: ABS\_CODE

Parent Table: ABS\_TYPE

Child Table: ABS\_QUOTAS

Parent to Child Rule: An ABS\_TYPE SYS\_C005260 many ABS\_QUOTASs.

Child to Parent Rule: An ABS\_QUOTAS is associated with exactly one ABS\_TYPE.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: ABS\_EDUCATION

Parent to Child Rule: A PERSON SYS\_C005265 many ABS\_EDUCATIONs.

Child to Parent Rule: An ABS\_EDUCATION is associated with exactly one PERSON.

Physical FK: CMD\_ID

Logical FK: CMD\_ID

Parent Table: COMMAND

Child Table: ABS\_EDUCATION

Parent to Child Rule: A COMMAND SYS\_C005266 many ABS\_EDUCATIONs.

Child to Parent Rule: An ABS\_EDUCATION is associated with exactly one COMMAND.

Physical FK: CMD\_YEAR

Logical FK: CMD\_YEAR

Physical FK: COUNTRY\_CODE

Logical FK: COUNTRY\_CODE

Parent Table: COUNTRY

Child Table: ABS\_EDUCATION

Parent to Child Rule: A COUNTRY SYS\_C005267 many ABS\_EDUCATIONs.

Child to Parent Rule: An ABS\_EDUCATION is associated with zero or one COUNTRYs.

Physical FK: EDU\_LEVEL\_CODE

Logical FK: EDU\_LEVEL\_CODE

Parent Table: EDUCATION\_LEVEL

Child Table: ABS\_EDUCATION

Parent to Child Rule: An EDUCATION\_LEVEL SYS\_C005268 many ABS\_EDUCATIONs.

Child to Parent Rule: An ABS\_EDUCATION is associated with zero or one EDUCATION\_LEVELs.

Physical FK: FUND\_CODE

Logical FK: FUND\_CODE

Parent Table: FUND

Child Table: ABS\_EDUCATION

Parent to Child Rule: A FUND SYS\_C005269 many ABS\_EDUCATIONs.

Child to Parent Rule: An ABS\_EDUCATION is associated with zero or one FUNDS.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: RECEPT\_REWARD

Parent to Child Rule: A PERSON SYS\_C005273 many RECEPT\_REWARDs.

Child to Parent Rule: A RECEPT\_REWARD is associated with exactly one PERSON.

Physical FK: REW\_CODE

Logical FK: REW\_CODE

Parent Table: REWARD

Child Table: RECEPT\_REWARD

Parent to Child Rule: A REWARD SYS\_C005274 many RECEPT\_REWARDS.

Child to Parent Rule: A RECEPT\_REWARD is associated with exactly one REWARD.

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: PUNISHMENT

Parent to Child Rule: A PERSON SYS\_C005279 many PUNISHMENTS.

Child to Parent Rule: A PUNISHMENT is associated with exactly one PERSON.

Physical FK: CMD\_ID

Logical FK: CMD\_ID

Parent Table: COMMAND

Child Table: PUNISHMENT

Parent to Child Rule: A COMMAND SYS\_C005280 many PUNISHMENTS.

Child to Parent Rule: A PUNISHMENT is associated with exactly one COMMAND.

Physical FK: CMD\_YEAR

Logical FK: CMD\_YEAR

Physical FK: P\_ID

Logical FK: P\_ID

Parent Table: PERSON

Child Table: TERMINATION

Parent to Child Rule: A PERSON SYS\_C005285 many TERMINATIONS.

Child to Parent Rule: A TERMINATION is associated with exactly one PERSON.

Physical FK: CMD\_ID

Logical FK: CMD\_ID

Parent Table: COMMAND

Child Table: TERMINATION

Parent to Child Rule: A COMMAND SYS\_C005286 many TERMINATIONS.

Child to Parent Rule: A TERMINATION is associated with exactly one COMMAND.

Physical FK: CMD\_YEAR

Logical FK: CMD\_YEAR

Physical FK: TERM\_REASON\_CODE

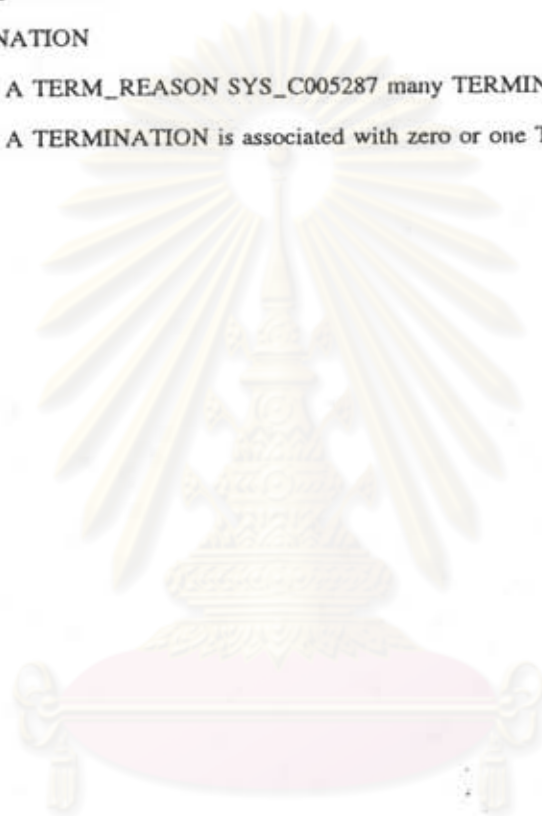
Logical FK: TERM\_REASON\_CODE

Parent Table: TERM\_REASON

Child Table: TERMINATION

Parent to Child Rule: A TERM\_REASON SYS\_C005287 many TERMINATIONS.

Child to Parent Rule: A TERMINATION is associated with zero or one TERM\_REASONS.



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



## ประวัติผู้เขียน

จาดุรนต์ หาญสมบุรณ์ เกิดเมื่อวันที่ 8 พฤศจิกายน 2512 สำเร็จการศึกษาระดับปริญญาตรีวิศวกรรมศาสตรคอมพิวเตอร์ ที่จุฬาลงกรณ์มหาวิทยาลัย เมื่อพ.ศ.2535 แล้วเข้าศึกษาต่อวิทยาศาสตร์คอมพิวเตอร์มหาบัณฑิต



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย