

IV. System Design



1. Keypoints in the System Development

The following issues were addressed in the system design.

For accountability purposes, entering data by proxy is strictly prohibited. A separate ID and password is provided to each data input officer for data management through the Internet

For the citizens' convenience, the regulation search system is linked with the OPEN System.

The main menu of the OPEN System presents an overview of the administrative procedures by services as well as the contents of the procedures.

The deletion of document is possible only by the Audit & Inspection Bureau, not by the official responsible for the data input.

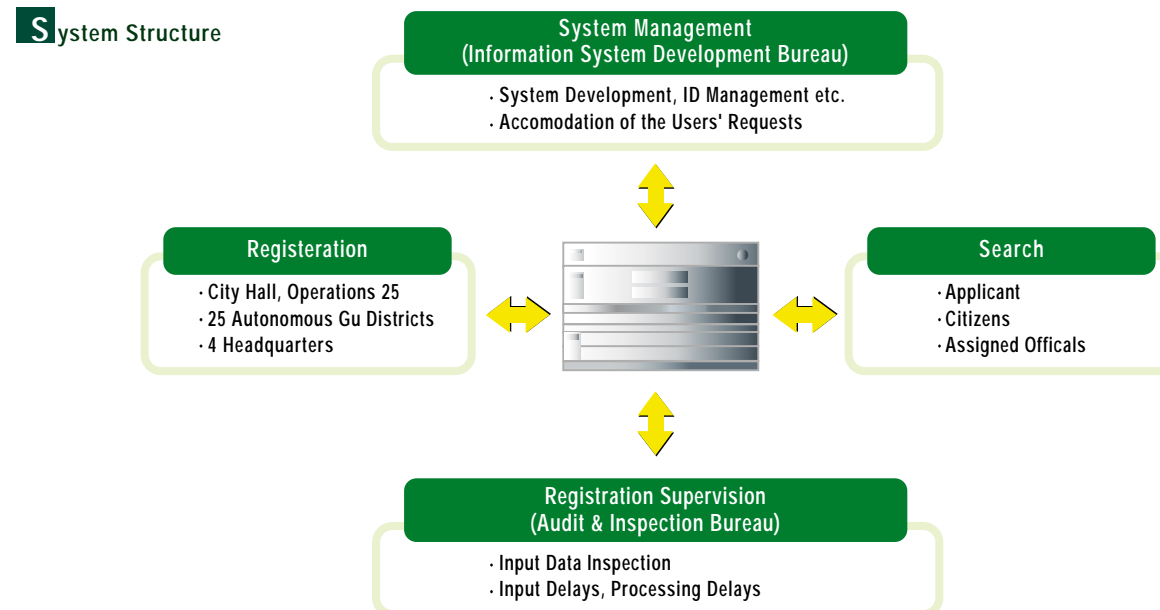
Editing a document is possible only when you are logged in with the same ID.

2. System Environment

1) System Structure

The OPEN System allows the departments to input data of administrative procedures from the submission to the final approval phase of 54 major services provided by the Seoul Metropolitan Government. Applicants can confirm each process of their application through the Internet.

The Audit & Inspection Bureau is responsible for the management and supervision of the departments related to civil applications by analyzing various data, i.e., whether the data input is conducted properly and whether the applications procedures abide by the regulations.

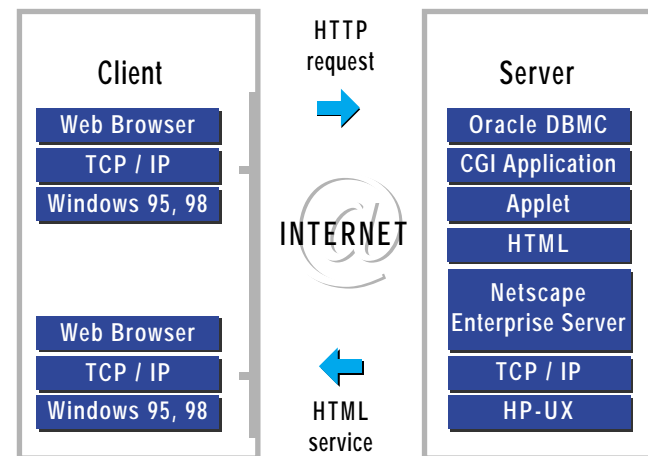


2) S/W Environment

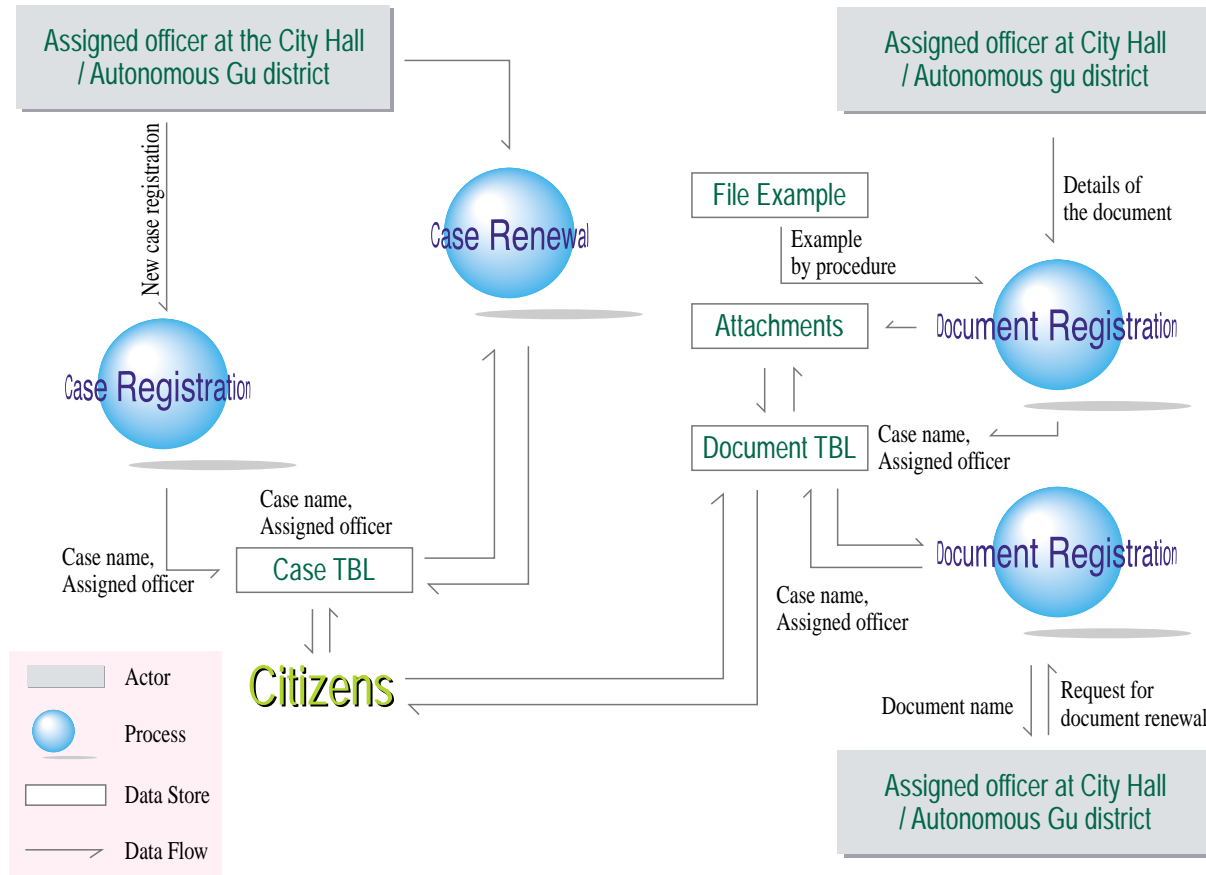
- 3 Phase Web Structure
- HTTP Protocol
- Exchange of parameter value between the server and the client using CGI
- The DB server and the Web server in the same main computer

3) H/W Environment

- Server : Mid-level
 - Server : HP K570(M/M : 3GB, CPU : 200MHz X 6 units)
 - OS : HP-UX V11.0 (UNIX)
 - Search Engine : Rader V2.6 (Hangeul full-text Index & Search system, Search engine developed in Korea)
 - Web Server : Netscape Server 3.61
 - Language : PRO*C
 - RDBMS : ORACLE 8.0.1
 - Internet Protocol : TCP/IP
- Client : PC with Internet Accessibility
 - Uses Web browsers such as Internet Explorer, Netscape



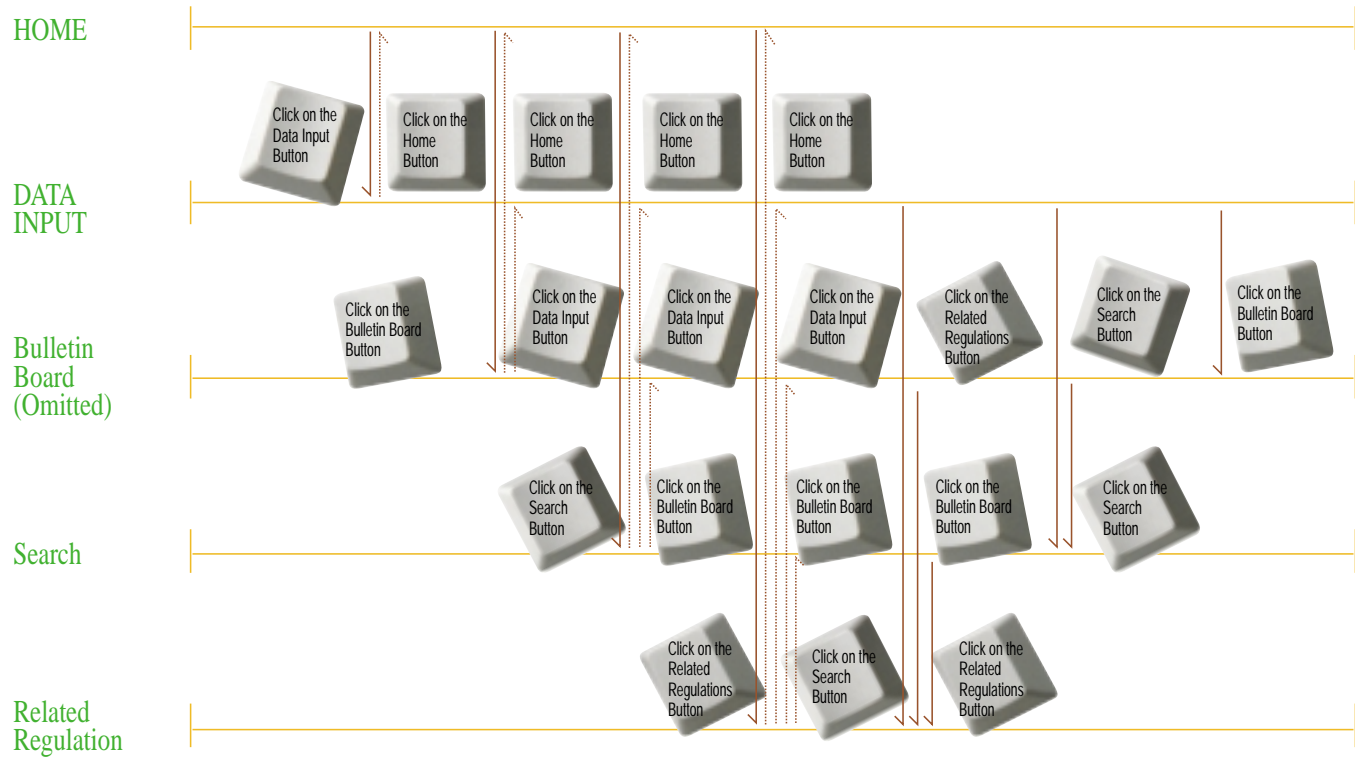
3. DFD(Data Flow Diagram)



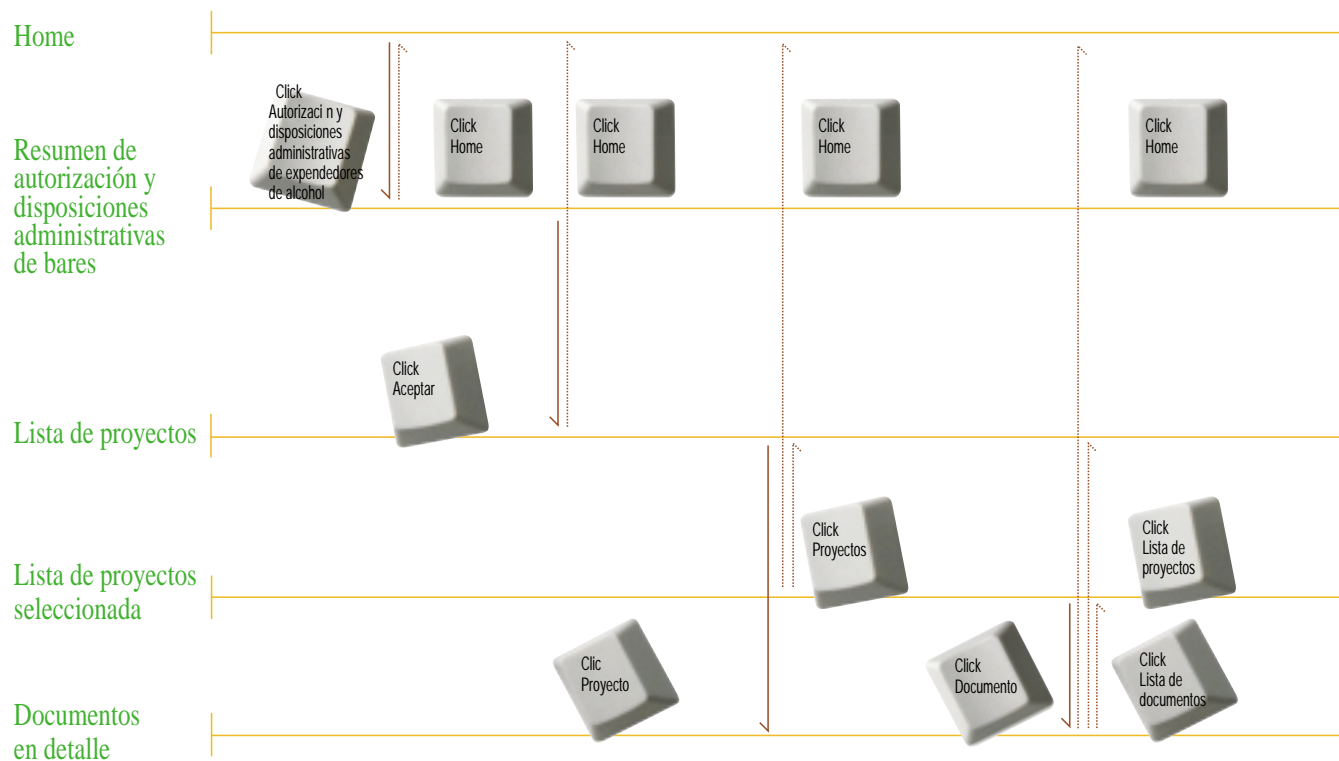
4. Dialog Control

The 'Authorization and Administrative Procedures for Bars and Entertainment Establishments' is set as an example that will serve as a standard for the 54 services following the same process.

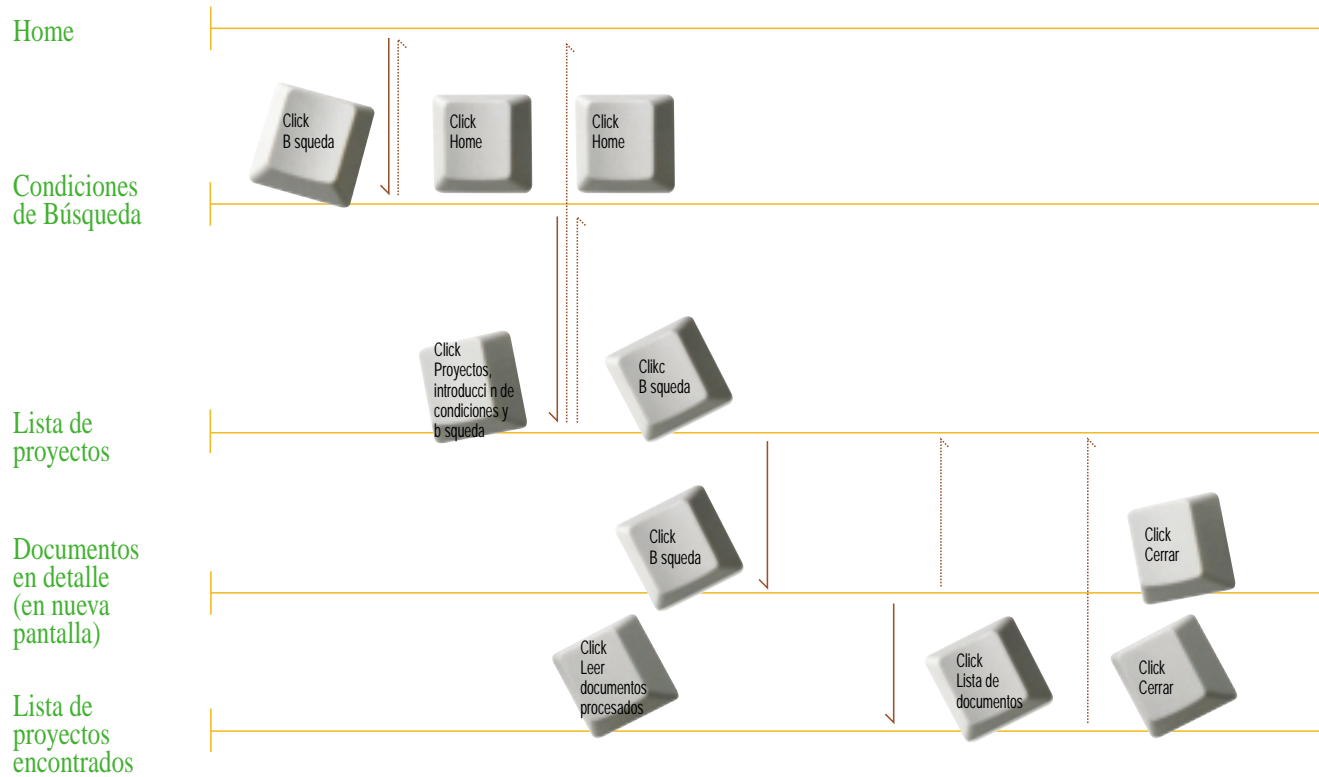
1) OPEN System Homepage



2) Authorization and Administrative Procedures for Bars and Entertainment Establishments (Reference)



3) Authorization and Administrative Procedures for Bars and Entertainment Establishments (Search)



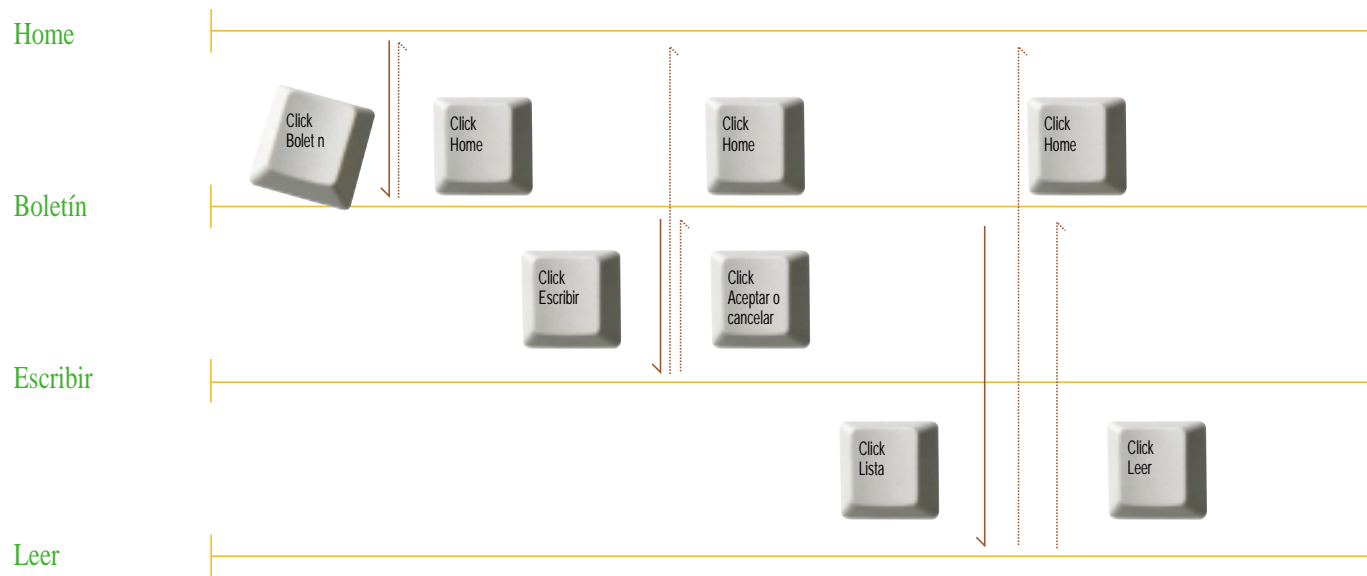
4) New Case Registration of the Authorization and Administrative Procedures for Bars and Entertainment Establishments



5) Data Input/Editing of the Authorization and Administrative Procedures for Bars and Entertainment Establishments



6) Bulletin Board Registration



5. Entity Type List

Subject Area	Major Entity Type	Entity Type	
OPEN System	Service	Service	
	Case	Case	
	Procedure	Procedure	
	Details	Details	
	Department	Department	
	User Management	User Management	
	User Right	User Right	
	Standard Code Management	Standard Code Management	
	Basic Code Management	Basic Code Management	
	Document	Traffic Impact Assessment	
		Taxi Fare Adjustment	
		New route development and adjustment for local area bus operations	
		Establishment of the bus fare standard and the rate schedule	
		Route adjustment for city bus operations	
		Bus terminal operation authorization for express/long-distance bus	
		Housing construction projects	
		Review and permission of building projects	
		Housing redevelopment projects	
		Urban restructuring projects	
Permission of land-use change			

Subject Area	Major Entity Type	Entity Type
OPEN System	Document	Decision and change of urban planning
		Compensation procedures
		Purchase of park sites
		Authorization/contract agent of waste disposal license and contract agent
		Contract agent for social welfare facilities
		Natural gas consumer price adjustments
		Registration processing for opening/changing large-scale commercial establishments
		Support fund raising for small / mid-sized businesses
		Deliberation on the installation of art works in buildings
		Construction technology services
		Implementation of facilities construction
		Design change of facilities construction
		Annual contracts on facilities maintenance
		Authorization and administrative procedures for bars and entertainment establishments
		Payment procedures
		Fire prevention facilities inspections

6. Entity Type Definition

Entity Type	Content	Beginning of Procedure	Time of Deletion	Number of Expected Cases
Services	Information on the 26 services available through the OPEN System	Registration of services open to the public/ services that require disclosure	Service deletion/ converting the service to not for disclosure	Unit: year Minimum : 1 Average : 1 Maximum : 3
Procedures	Information on each procedures	Development of new procedure/ change of procedure (when a new procedure has been established in a service)	Deletion of existing procedure/ change of procedure (when the existing procedure has been eliminated)	Unit: year Minimum : 2 Average : 5 Maximum : 30
Details	Detailed information of services & procedures	Registration of detailed procedure / Addition of detailed procedure	Deletion of detailed procedure / Elimination of detailed procedure	Unit: year Minimum : 2 Average : 10 Maximum : 30
Department	Information of the organization	Establishment of a new department / Change in organization	Department closing/ Change of organization	Unit: year Minimum : 1 Average : 10 Maximum : 20
User Management	Information of the system user	Registration of a new owner / When a new ID is provided to the user	User ID deletion / when a user ID is deleted	Unit: year Minimum : 10 Average : 100 Maximum : 200
User Rights	Information of procedure details & rights of users by each department	Registration of detailed procedure or user	Upon expiration	Unit: year Minimum : 20 Average : 100 Maximum : 200
Standard Code Management	Information of the standard code for the management of the basic code management	Registration of standard code / when a new code is required	Deletion of Standard Code/ No need for the existing code system	Unit: year Minimum : 3 Average : 5 Maximum : 10
Basic Code Management	Basic code information in all services	Registration of basic code / change of management code type	Deletion of basic code/ change in management code type	Unit: year Minimum : 10 Average : 20 Maximum : 100

7. Entity Attribute

Entity Name	Attribute	Option	Category	Mode	Unit	Synonym
Service	Service ID : PK	NOT NULL	System	char(2)		
	Service Name	NOT NULL	Basic	varchar2 (100)		
	Service Information		System	varchar2 (200)		
	Document Table Name	NOT NULL	Basic	varchar2 (20)		
Procedure	Service ID : PK, FK	NOT NULL	System	char(2)		
	Procedure ID : PK	NOT NULL	System	char(3)		
	Procedure Name	NOT NULL	Basic	varchar2 (100)		
	Procedure Information		Basic	varchar2 (200)		
Details of Procedure	Service ID : PK, FK	NOT NULL	System	char(2)		
	Procedure ID : PK, FK	NOT NULL	System	char(3)		
	Procedure Detail ID : PK	NOT NULL	System	char(3)		
	Detailed Procedure name	NOT NULL	Basic	varchar2 (100)		
Department	Detailed Procedure Information		Basic	varchar2 (200)		
	Department Code : PK	NOT NULL	System	char(6)		Department ID
	Department Name		Basic	varchar2 (100)		
	Department Information		Basic	varchar2 (200)		
User Management	Supervising Department Code		Basic	char(6)		
	User ID : PK	NOT NULL	System	char(8)		
	Department code : FK	NOT NULL	System	char(6)		
	User PWD	NOT NULL	Basic	char(6)		
User Rights	Information		Basic	varchar2 (200)		
	Department ID : PK, FK	NOT NULL	System	char(6)		
	Service ID : PK, FK	NOT NULL	System	char(2)		
	Procedure ID : PK, FK	NOT NULL	System	char(3)		
Standard Code	Detailed Procedure ID : PK, FK	NOT NULL	System	char(3)		
	Standard ID : PK	NOT NULL	System	char(3)		Standard Code
	Standard Code Name		Basic	varchar2(5)		

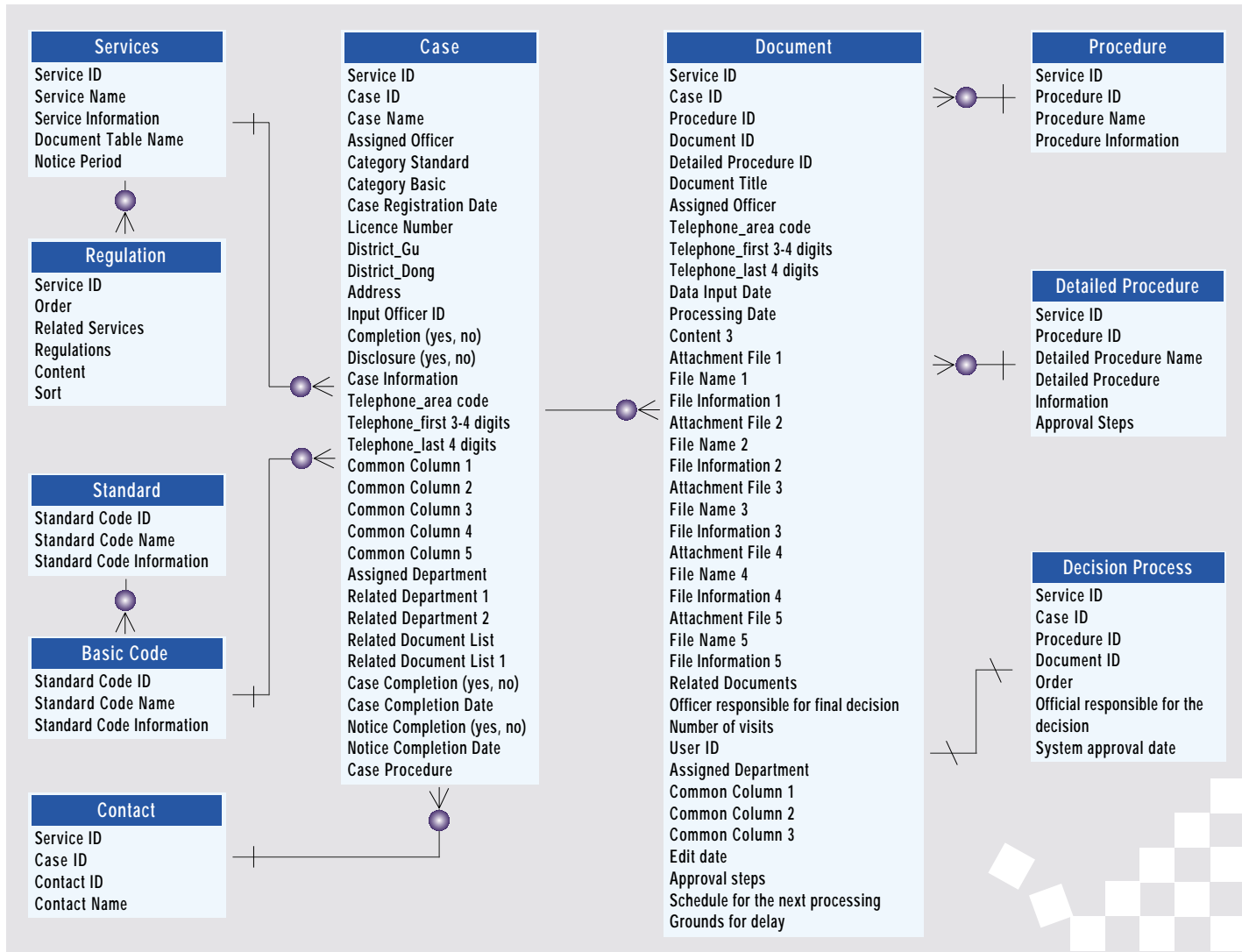
Entity Name	Attribute	Option	Category	Mode	Unit	Synonym
Basic Code Management	Standard Code Information		Basic	varchar2(100)		
	Basic ID : PK, FK	NOT NULL	System	char(3)		Standard Code Basic Code
	Basic ID : PK	NOT NULL	System	char(2)		
	Basic Code Name		Basic	varchar2(50)		
	Basic Code Name	NOT NULL	Basic	varchar2(100)		
Case	Service ID : PK, FK	NOT NULL	System	char(2)		
	Case ID : PK	NOT NULL	System	char(10)		
	Case Name		Basic	varchar2(100)		
	Assigned Officer		Basic	varchar2(20)		
	Category_Standard		System	char(3)		
	Category_Basic		System	char(2)		
	Case Registration Date		Basic	char(8)		
	License Number		Basic	char(10)		
	District (Gu)		System	char(3)		
	District (Dong)		System	char(2)		
	Address	NOT NULL	Basic	varchar2(40)		
	Data Input Officer ID	NOT NULL	System	char(8)		
	Completion (yes, no)	NOT NULL	System	char(1)		
	Disclosure (yes, no)	NOT NULL	System	char(1)		
	Case Information		Basic	varchar2(200)		
	Telephone (area code)		Basic	char(4)		
	Telephone (first 3-4 digits)		Basic	char(4)		
	Telephone (last 4 digits)		Basic	char(15)		
	Common Column 1		Basic	varchar2(100)		
	Common Column 2		Basic	varchar2(100)		
	Common Column 3		Basic	varchar2(100)		
	Common Column 4		Basic	varchar2(100)		

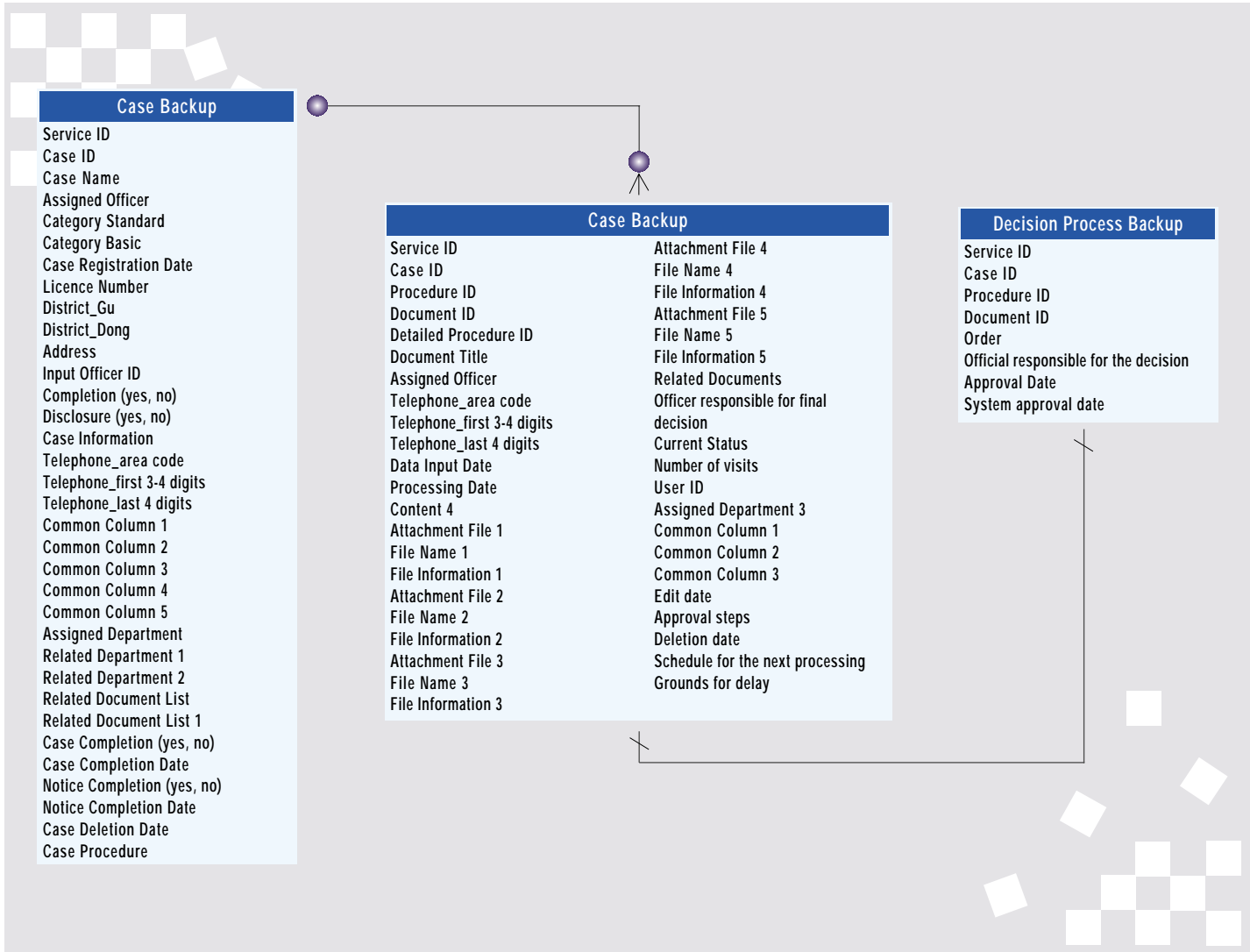
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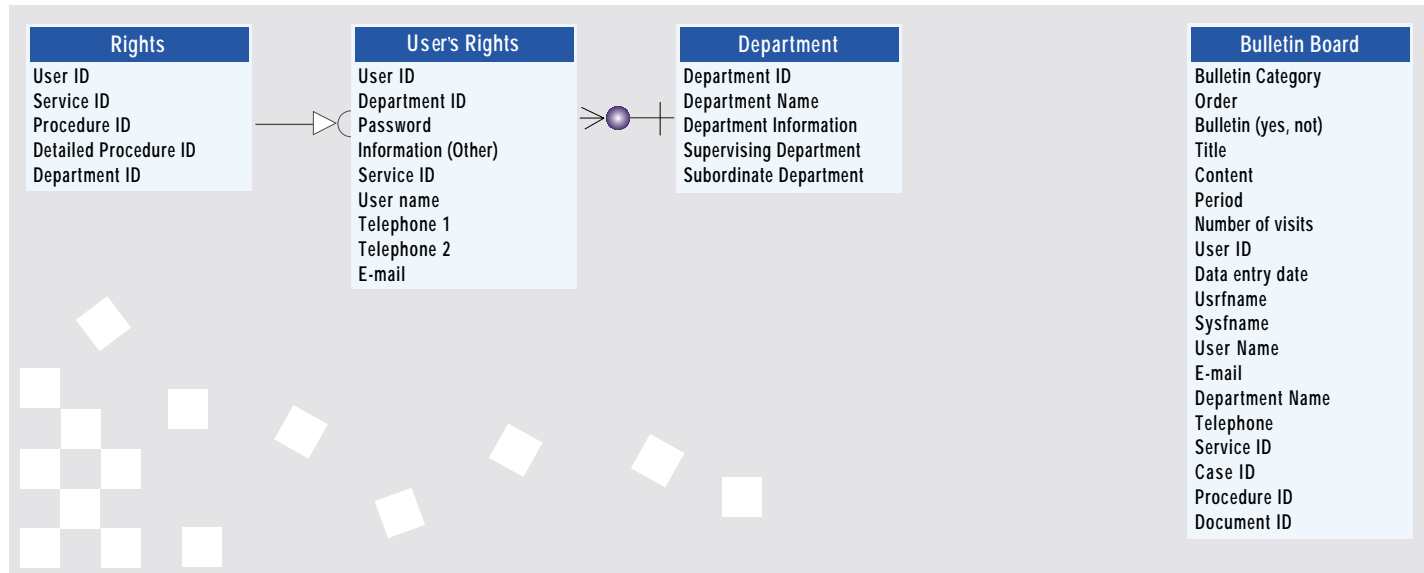
Entity Name	Attribute	Option	Category	Mode	Unit	Synonym
	Common Column 5		Basic	varchar2(100)		
	Assigned Department		System	char(6)		
	Related Department1		System	char(6)		
	Related Department2		System	char(6)		
	List of Related Departments		Basic	varchar2(2000)		
Document	Service ID : PK, FK		System	char(2)		
	Case ID : PK, FK	NOT NULL	System	char(10)		
	Procedure ID : PK, FK	NOT NULL	System	char(3)		
	Document Number : PK	NOT NULL	System	char(5)		
	Detailed ProcEDURE ID : FK	NOT NULL	System	char(3)		
	Document Title	NOT NULL	Basic	varchar2(100)		
	Officer Name	NOT NULL	Basic	varchar2(20)		
	Telephone (area code)	NOT NULL	Basic	char(4)		
	Telephone (first 3-4 digits)	NOT NULL	Basic	char(4)		
	Telephone (last 4 digits)	NOT NULL	Basic	char(15)		
	Date of Entry	NOT NULL	Basic	char(14)		
	Processing Date	NOT NULL	Basic	char(8)		
	Content	NOT NULL	Basic	long raw		
	Attachment File1	NOT NULL	System	varchar2(50)		
	File Name 1	NOT NULL	System	char(20)		
	File Information1		System	varchar2(100)		
	Attachment File 2		System	varchar2(50)		
	File Name 2		Basic	char(20)		
	File Information 2		Basic	varchar2(100)		
	Attachment File 3		System	varchar2(50)		
	File Name 3		Basic	char(20)		
	File Information 3			varchar2(100)		

Entity Name	Attribute	Option	Category	Mode	Unit	Synonym
	Attachment File 4		Basic	varchar2(50)		
	File Name 4		System	char(20)		
	File Information4		Basic	varchar2(100)		
	Attachment File 5		Basic	varchar2(50)		
	File Name 5		System	char(20)		
	File Information 5		Basic	varchar2(100)		
	Related Documents		Basic	varchar2(100)		
	Official responsible for the final decision		Basic	varchar2(200)		
	Current Status	NOT NULL	Basic	number		
	Number of visits		Basic	char(8)		
	Input Officer ID	NOT NULL	System	varchar2(100)		
	Assigned Department	NOT NULL	Basic			

8. ERD(Entity Relation Diagram)







9. Table List

System	Table ID	Contents	Reference
OPEN System	t_1	Service Management Table	
	t_2	Case Management Table	
	t_3	Procedure Management Table	
	t_4	Procedure Detail Management Table	
	t_5_01 t_5_54)	Document Table (differs by service)	
	t_6	Organization Table	
	t_7	System User Table	
	t_8	Departmental Procedure Detail Authority Table	
	t_9	Standard Code Table	
	t_10	Basic Code Table	
	t_11	Business Table	
	t-12	Bulletin Board Table	