



## FIT5042 Design Report (Major Tasks)

### Government Service Project

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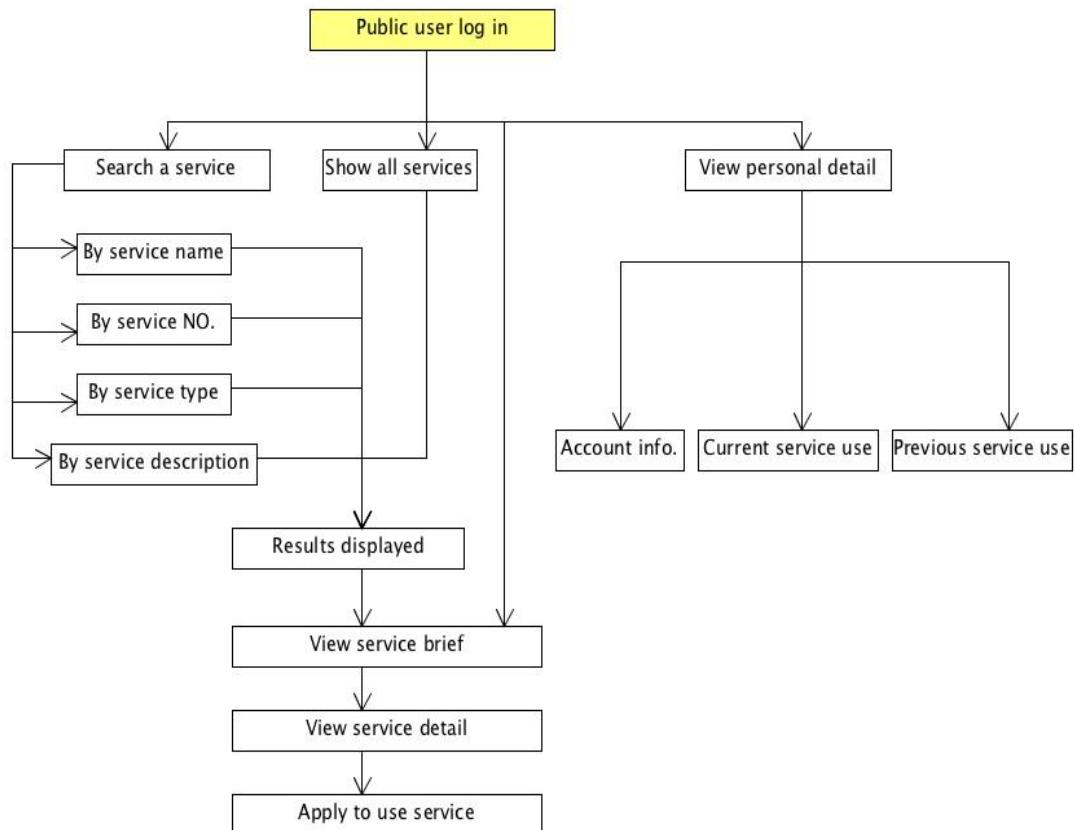
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# 1. Overview

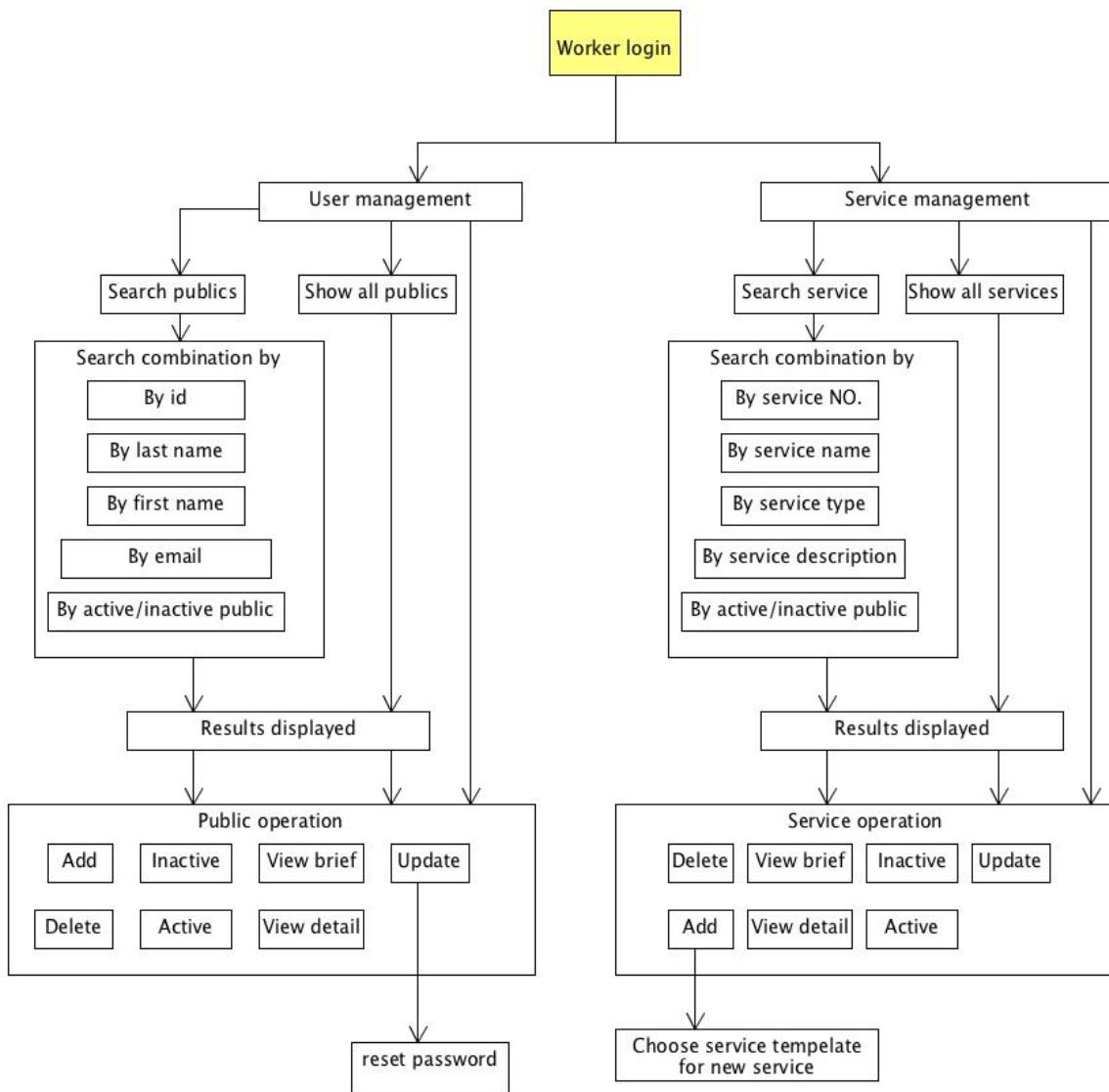
This project helps public to use government organization / department's services. Government organization/department can publish services online for public who can log in the system and choose the service they need. Government Service Project has significantly useful features which help workers manage the public users and services efficiently.

## 2. Functional diagram

### 2.1 Public user



## 2.2 Worker



### 3. Core program functionality

#### 3.1 User log in

Function description: Public and Worker can log in through this page. Once they log in, they will be redirected to different page based on their role: public or worker.

The screenshot shows a web browser window with a dark header bar containing the text "Government Service". Below the header is a light gray content area. In the center of the content area is a "Sign In" form. The form has three fields: "Email" (with an empty input field), "Password" (with an empty input field), and a green "Sign In" button at the bottom right. At the bottom left of the content area, there is a small text footer that reads "Government Service @ 2016".

If the public or worker enter wrong email or password, or if they are trying to access the government service system without log in, then they will be redirected to the error page.

The screenshot shows a web browser window with a dark header bar containing the text "Government Service". Below the header is a light gray content area. In the center, there is a message in bold black text: "You are currently not authorized to access that web page!". At the bottom left of the content area, there is a small text footer that reads "Government Service @ 2016".

#### 3.2 Public Core Functions

##### 3.2.1 *View all services*

Function description: Once the public log in, they can view the list of service in a brief information, all the services that public can see are in an active status.

Government Service

[sed@gmail.com](#)

## Find a service

Service NO.  
Service Name  
All service type...  
Service Description

Show all    Search

NO	Thumbnail	Name	Detail
1		ASK A LIBRARIAN	
2		Home and Contents Insurance	
3		Australian Police Child ID	
4		Find a child care service	
5		Citizenship Wizard	
248509		Apply for an ABN	
251909		ABC Mobile	

### 3.2.2 Find a service

Function description: Public can select a service by combining the service number, name, type and description.

Government Service

[sed@gmail.com](#)

## Find a service

Service NO.  
child  
Child care  
Service Description

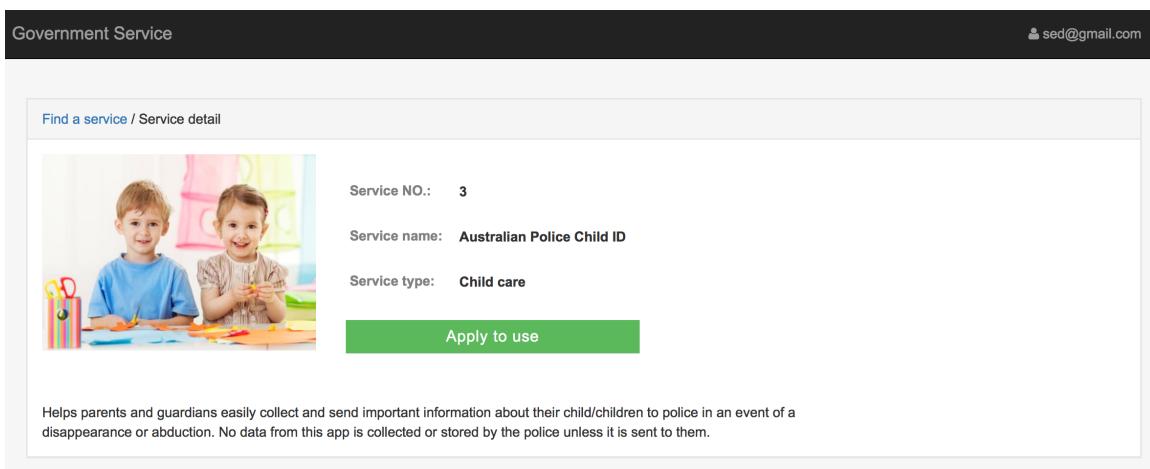
Show all    Search

NO	Thumbnail	Name	Detail
3		Australian Police Child ID	
4		Find a child care service	

Government Service @ 2016

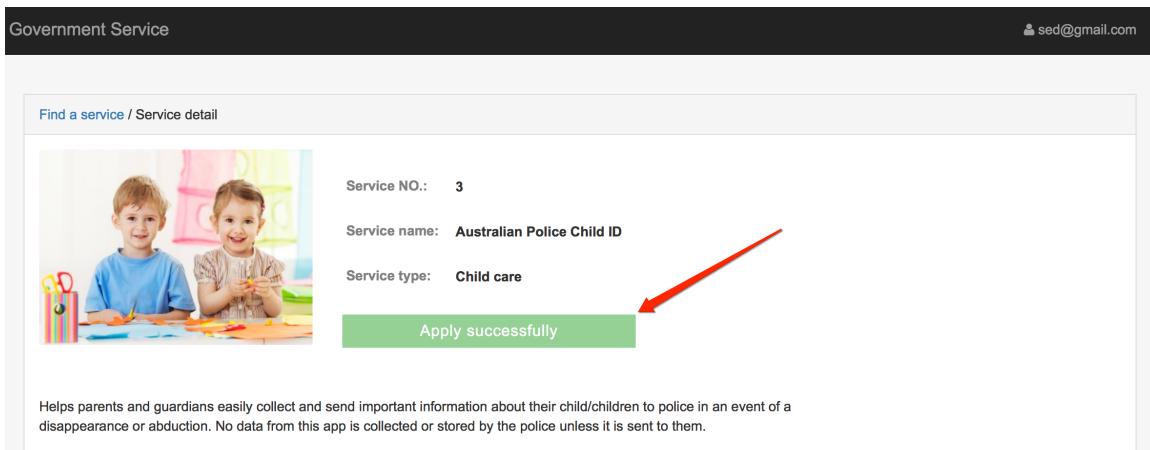
### 3.2.3 View detail of a service

Function description: Public can select a service and click the detail button to view the detail information. In the detail page, public can “Apply to use” the service.

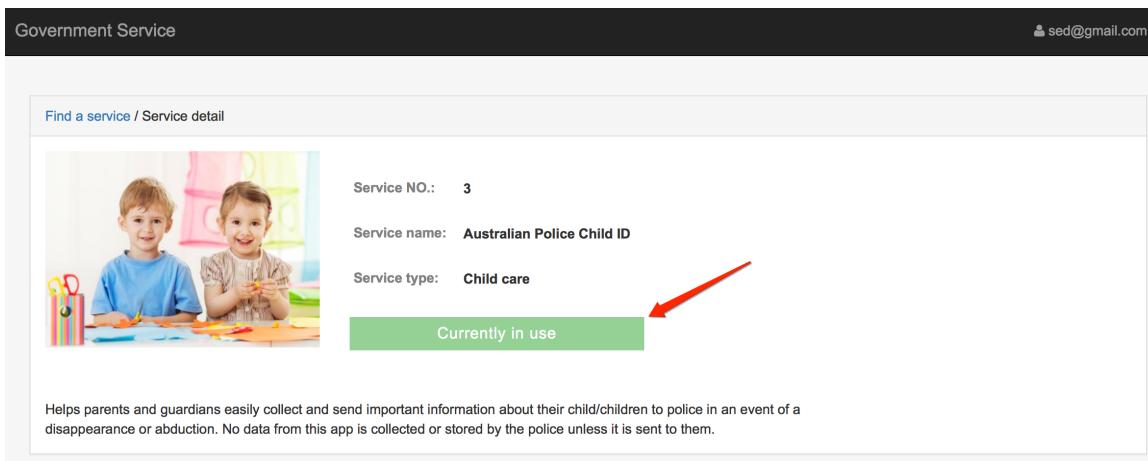


### 3.2.4 Use a service

Function description: After applying to use, the text on the green button will change to “Apply successfully”, responding to the public that applied successfully, meanwhile, the button will be disabled, because public cannot use the same service multiple times at one moment, but they can use other services.



If public come into the service detail page next time, the green button displays as “Currently in use” and public cannot click the button.



### 3.2.5 *View personal information*

Function description: Public user can view his/her own the personal information, including account information, services currently in use and previous service uses.

Government Service

Find a service / Account information

	ID number: 27157626
	Last name: Kevin
	First name: PI
	Email: sed@gmail.com
	Phone: 0123456789
	Address: Clayton

Services currently in use

Transaction id	Service id	Service name	Service type	Used date	Staff
2273	5	Citizenship Wizard	Citizenship	2016/10/18	Troy
2275	251909	ABC Mobile	Education	2016/10/18	Troy
2277	253109	bbb	Insurance	2016/10/18	Troy
2610	248509	Apply for an ABN	Insurance	2016/10/20	Troy

Finished service use

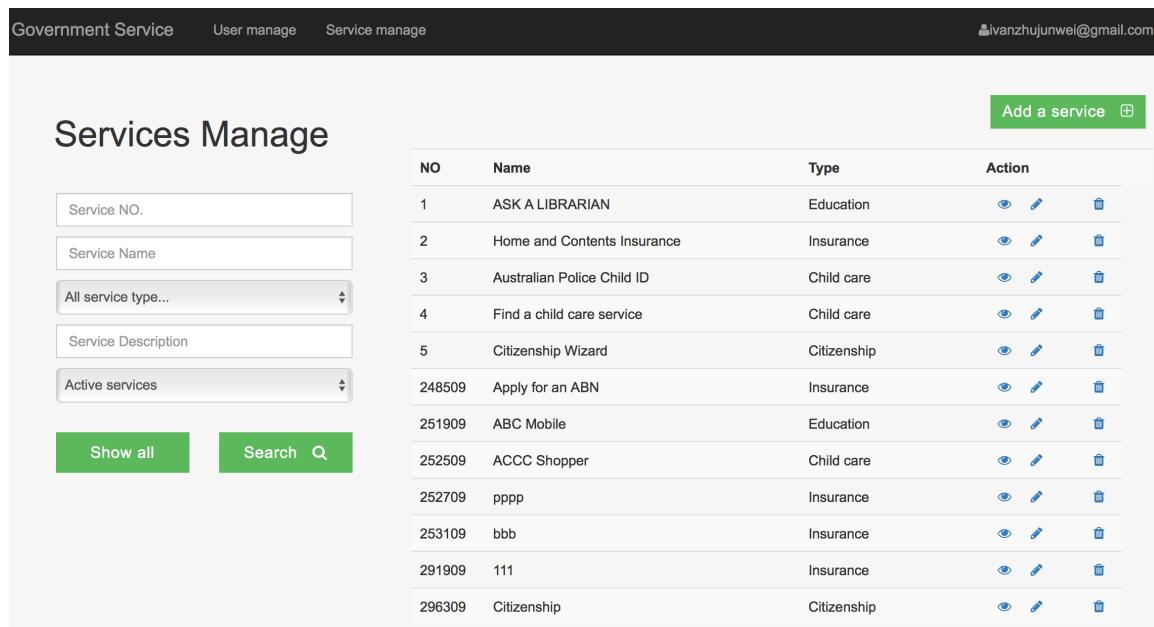
Transaction id	Service id	Service name	Service type	Used date	Staff
2268	1	ASK A LIBRARIAN	Education	2016/10/18	Troy
2269	4	Find a child care service	Child care	2016/10/18	Troy
2274	3	Australian Police Child ID	Child care	2016/10/18	Troy
2604	2	Home and Contents Insurance	Insurance	2016/10/20	Troy
2608	4	Find a child care service	Child care	2016/10/20	Troy
2617	3	Australian Police Child ID	Child care	2016/10/20	Ivan

### 3.3 Worker Core Functions

In the Government Service System, two main functions, user management and service management, are provided for worker. Worker can view, add, search, update, delete a service or a public, some other important features are offered as well.

### 3.3.1 View / Search services

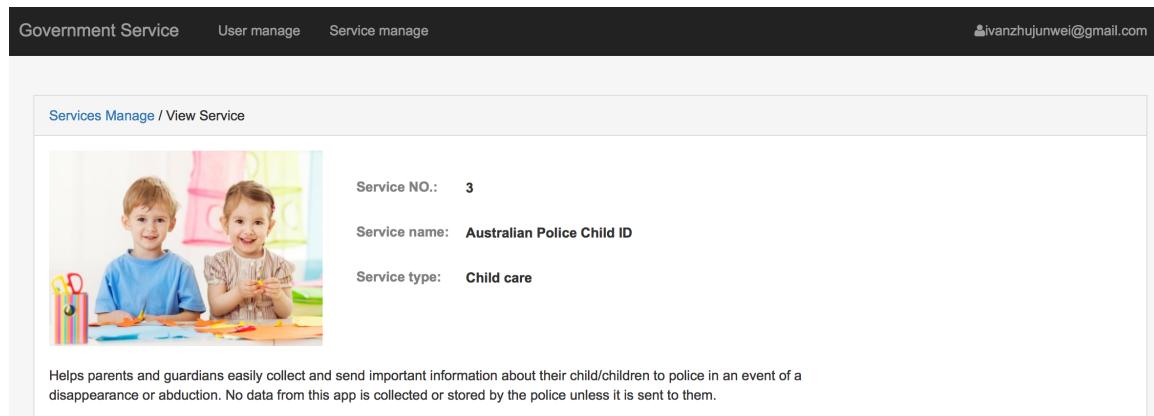
Function description: Worker can view the list of service in brief and search the services by combining service number, name, type, description and status (active and inactive).



The screenshot shows a web-based application interface titled "Services Manage". At the top right is a green button labeled "Add a service" with a plus sign. On the left, there are several input fields: "Service NO.", "Service Name", "All service type...", "Service Description", and "Active services". Below these are two buttons: "Show all" (green) and "Search" with a magnifying glass icon. To the right is a table listing 15 services:

NO	Name	Type	Action
1	ASK A LIBRARIAN	Education	
2	Home and Contents Insurance	Insurance	
3	Australian Police Child ID	Child care	
4	Find a child care service	Child care	
5	Citizenship Wizard	Citizenship	
248509	Apply for an ABN	Insurance	
251909	ABC Mobile	Education	
252509	ACCC Shopper	Child care	
252709	pppp	Insurance	
253109	bbb	Insurance	
291909	111	Insurance	
296309	Citizenship	Citizenship	

Worker can also view the detail of one service, including the service number, name, type and description.



The screenshot shows a "View Service" page. At the top right is an email address: "ivanzhujunwei@gmail.com". The main content area has a header "Services Manage / View Service". It features a photo of two children at a table. To the right, the service details are listed: Service NO.: 3, Service name: Australian Police Child ID, and Service type: Child care. Below this is a note: "Helps parents and guardians easily collect and send important information about their child/children to police in an event of a disappearance or abduction. No data from this app is collected or stored by the police unless it is sent to them."

### 3.3.2 Inactivate a service

Function description: Worker can deactivate a service which would not be available any more. To do this, worker can click the “bin” icon, then it will prompt up an alert to confirm this action.

The screenshot shows a web-based application for managing services. At the top, there's a navigation bar with 'Government Service', 'User manage', and 'Service manage'. The email 'ivanzhujunwei@gmail.com' is also visible. Below the navigation is a search bar and some filters. The main area is titled 'Services Manage' and contains a table of service records. One row in the table has a red circle around its 'Action' column, specifically the trash bin icon. A modal dialog box is overlaid on the page, asking 'Public will not see this service, really inactive this service?'. It has 'Cancel' and 'OK' buttons. The table data is as follows:

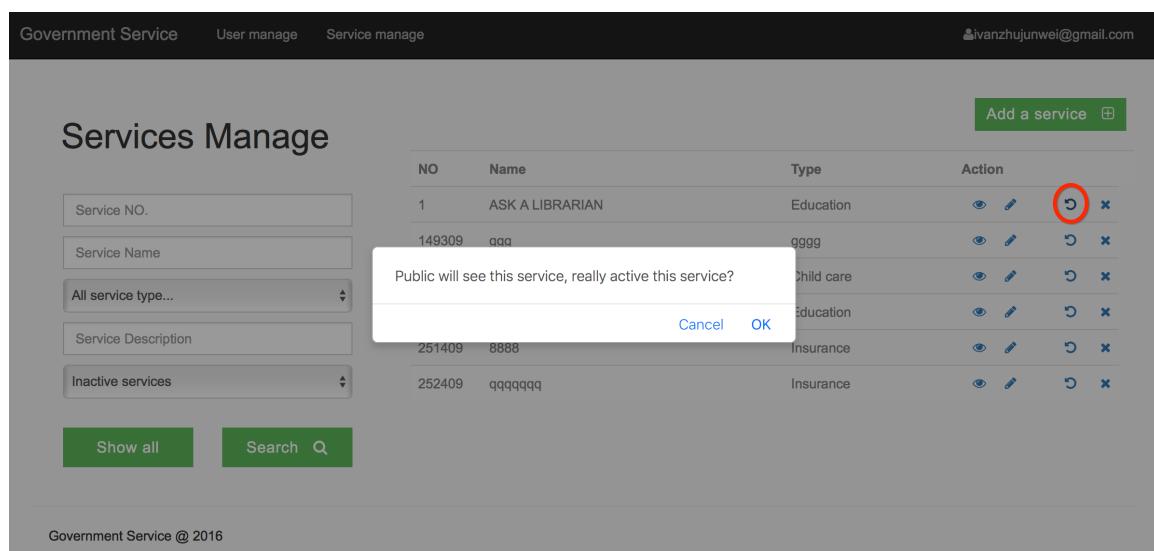
NO	Name	Type	Action
1	ASK A LIBRARIAN	Education	
248509	Apply for an ABN	Insurance	
251909	ABC Mobile	Education	
252509	ACCC Shopper	Child care	
252709	pppp	Insurance	
253109	bbb	Insurance	
291909	111	Insurance	
296309	Citizenship	Citizenship	

Once click “OK”, this service will disappear in the current webpage, and 2 business logic happen here.

- Public **cannot search this service any more**.
- If some public are using this service right now, all the **service use records will become finished**.

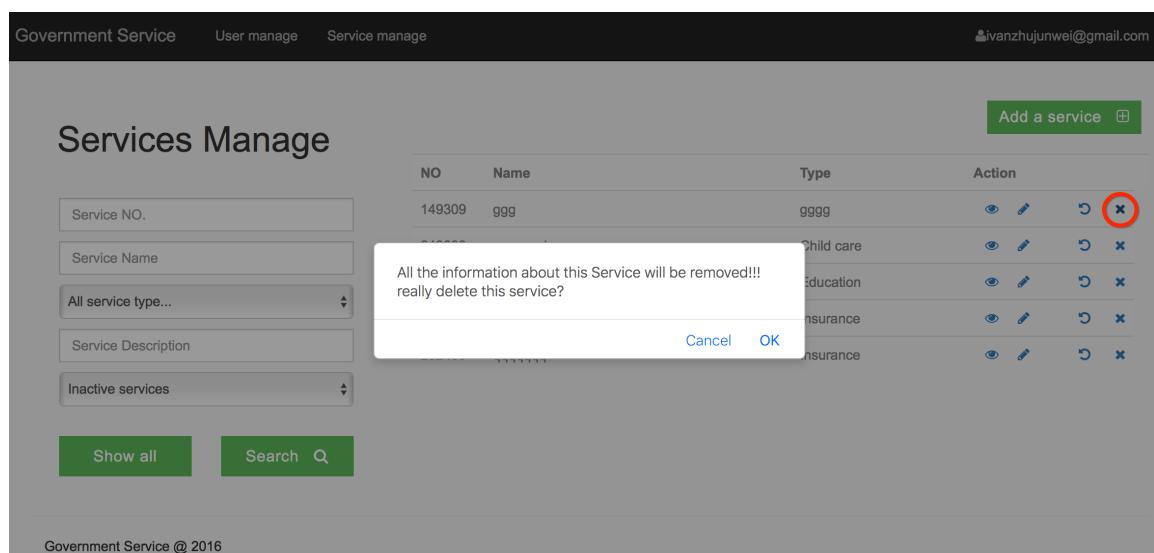
### 3.3.3 Activate a service

Function description: Worker can search the deactivate services. For these services, worker can undo the “deactivate” operation, activate the service again. Once click the “OK” button, **public will see these services again**.



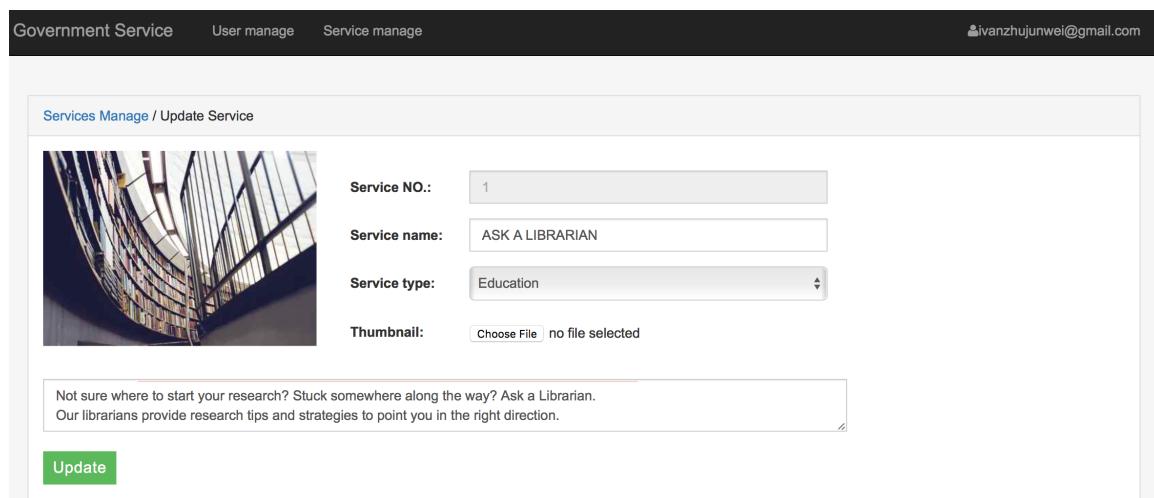
### 3.3.4 Delete a service

Function description: Worker can delete a service. If the worker confirms to continue the operation, this **service will be permanently removed** from the database, as well as the **related service use records**.



### 3.3.5 *Update a service*

Function description: Worker can update a service. Except the service number, worker can edit other information of the service.



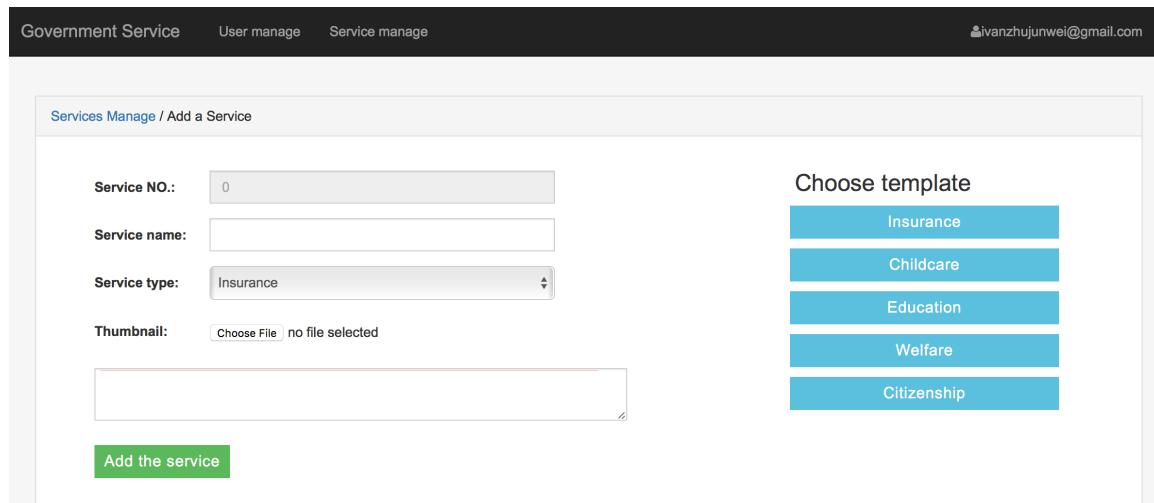
The screenshot shows the 'Update Service' page of the Government Service application. At the top, there are navigation links: 'Government Service', 'User manage', 'Service manage', and an email address 'ivanzhujunwei@gmail.com'. The main form has the following fields:

- Service NO.:** A text input field containing the value '1'.
- Service name:** A text input field containing the value 'ASK A LIBRARIAN'.
- Service type:** A dropdown menu set to 'Education'.
- Thumbnail:** A file upload field with the placeholder 'Choose File' and the message 'no file selected'.

Below the form, there is a note: 'Not sure where to start your research? Stuck somewhere along the way? Ask a Librarian. Our librarians provide research tips and strategies to point you in the right direction.' At the bottom left is a green 'Update' button.

### 3.3.6 *Add a service*

Function description: Worker can add a service. Except the service number, worker can add other information. The service name, type and thumbnail cannot be empty here.



The screenshot shows the 'Add a Service' page of the Government Service application. At the top, there are navigation links: 'Government Service', 'User manage', 'Service manage', and an email address 'ivanzhujunwei@gmail.com'. The main form has the following fields:

- Service NO.:** A text input field containing the value '0'.
- Service name:** An empty text input field.
- Service type:** A dropdown menu set to 'Insurance'.
- Thumbnail:** A file upload field with the placeholder 'Choose File' and the message 'no file selected'.

To the right of the form is a sidebar titled 'Choose template' with the following options:

- Insurance
- Childcare
- Education
- Welfare
- Citizenship

At the bottom left is a green 'Add the service' button.

Furthermore, worker can choose the service template for different service types. Once the template is clicked, the ***prepared information (from RESTful web service) will be loaded*** into the page.

The screenshot shows the 'Services Manage / Add a Service' page. On the left, there are input fields for 'Service NO.' (0), 'Service name' (Education), 'Service type' (Education), and a 'Thumbnail' section with a placeholder message. On the right, a sidebar titled 'Choose template' lists categories: Insurance, Childcare, Education (which is circled in red), Welfare, and Citizenship. Red arrows point from the 'Service name' and 'Service type' fields to the 'Education' category in the sidebar.

### 3.3.7 View / Search public

Function description: Worker can view all the public brief information and search a public combining the public ID, last name, first name, email and status (active and inactive).

The screenshot shows the 'User management' page. On the left, there are search filters for 'ID Number.', 'Last name', 'First name', 'Email', and a dropdown for 'Active public users'. Below these are buttons for 'Show all' and 'Search'. On the right, a table lists user details: ID, Last Name, First Name, Email, and Actions (edit and delete icons). The table data is as follows:

ID	Last Name	First Name	Email	Actions
27157626	Kevin	Pi	sed@gmail.com	
27157627	Andy	J	andy.Jd@163.com	
27157630	1212	1212	1212	
27157632	testLast	testFirst	sdf@ds.com	
27157633	newUse	ss	sd@df.com	

Government Service @ 2016

Worker can also view the detail of one public user.

The screenshot shows the 'User Manage / View user detail' section. It displays a user profile picture of a person wearing glasses and a tie. The user's details are listed as follows:

ID number:	27157627
Last name:	Andy
First name:	J
Email:	andyJd@163.com
Phone:	91234567
Address:	Clayton

Below this, there is a section titled 'Services currently in use' containing a table:

Transaction id	Service id	Service name	Service type	Used date	Staff
2622	1	ASK A LIBRARIAN	Education	2016/10/21	Richard
2623	4	Find a child care service	Child care	2016/10/21	Richard

Finally, there is a section titled 'Finished service use' which is currently empty.

### 3.3.8 Inactivate a public

Function description: Worker can deactivate a public who would not be member of Government Service System any more. To do this, like deactivating a service, worker can click the “bin” icon, then it will prompt up an alert to confirm this action. Once click “OK”, this public will disappear in the current webpage.

The screenshot shows the 'User management' section. On the left, there are input fields for 'ID Number.', 'Last name', 'First name', and 'Email'. Below these is a dropdown menu set to 'Active public users'. At the bottom are two buttons: 'Show all' and 'Search'.

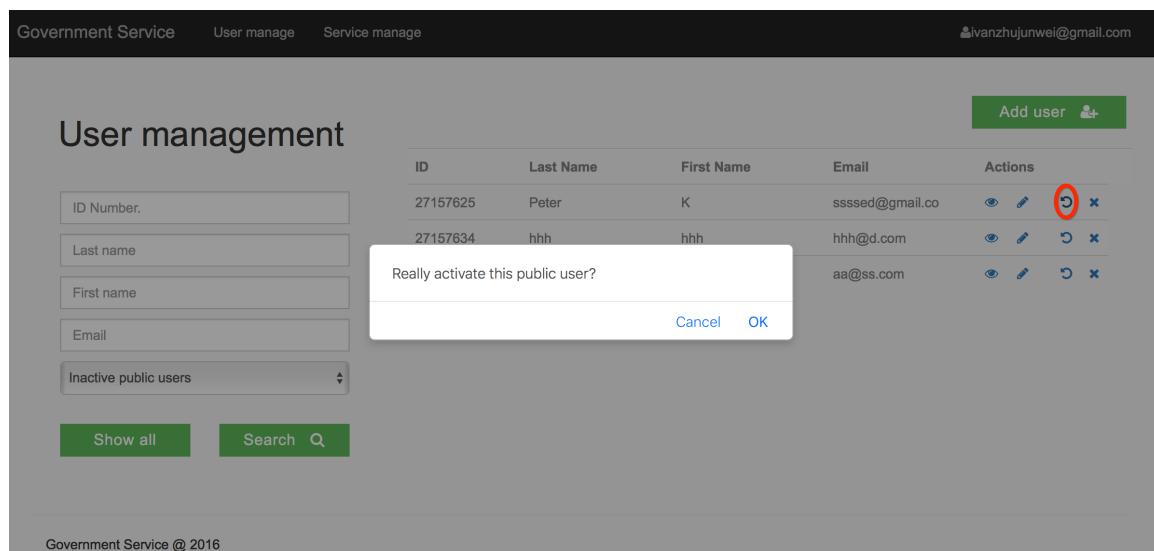
On the right, there is a table of users:

ID	Last Name	First Name	Email	Actions	
27157626	Kevin	PI	sed@gmail.com		
27157627	Andy	J	andyJd@163.com		
1212					
sdf@ds.com					
sd@df.com					

A modal dialog box is displayed over the table, asking 'Really deactivate this public user?'. It contains 'Cancel' and 'OK' buttons. The 'OK' button is circled in red.

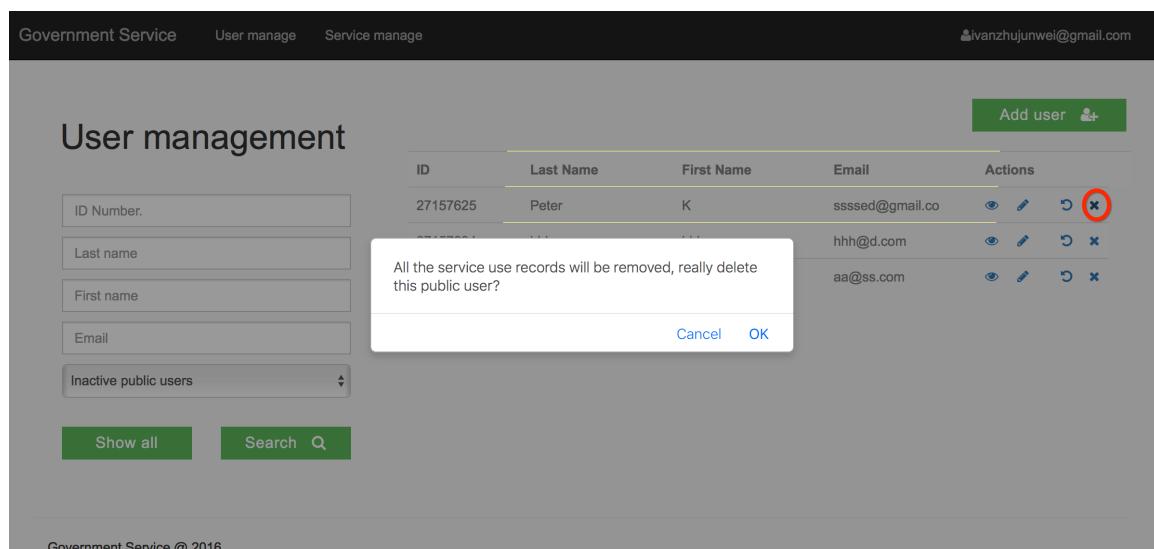
### 3.3.9 Activate a public

Function description: After searching the inactive public, worker can redo the “inactivate” operation, activate the public again.



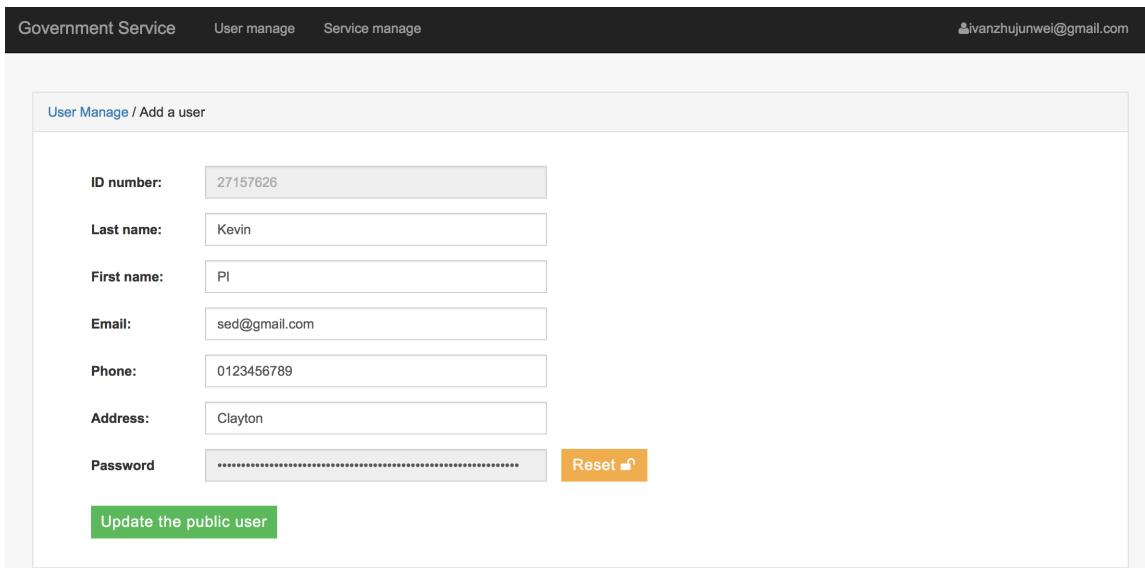
### 3.3.10 Delete a public

Function description: Worker can delete a public. If the worker confirms to continue the operation, this **public will be permanently removed** from the database, as well as the **records of service use he/she has used before**.



### 3.3.11 Update a public

Function description: Worker can update a public. Except the public ID and password, worker can update other information. Inside this functionality, ***work is not able to see the password, but is able to reset the password to a default value.***



The screenshot shows a web-based application interface for managing users. At the top, there is a navigation bar with links for 'Government Service', 'User manage', 'Service manage', and an email address 'ivanzhujunwei@gmail.com'. The main content area has a title 'User Manage / Add a user'. Below the title are several input fields for updating a user's information:

- ID number: 27157626
- Last name: Kevin
- First name: PI
- Email: sed@gmail.com
- Phone: 0123456789
- Address: Clayton
- Password: (redacted)

Below the input fields are two buttons: 'Reset' and 'Update the public user' (in green). The 'Update the public user' button is highlighted with a green background.

### 3.3.12 Add a public

Function description: When worker adds a public, the public ID number is generated automatically and password is a default one, the two values are not able to change.

Worker is expected to enter the personal information of the public. There are some business rules for the member of public.

- Each user is associated with a unique ID number in the system
- The last name and first name must not contain numeric value
- An email address must be in a valid email format (e.g. christopher.messom@monash.edu).
- A phone number must be valid (If the phone number is a landline number, the first digit of the phone number must be 9 and the number must be 8 digits long. On the other hand, if the number is a mobile number, the first digit of the phone number must be 0 and the number must be 10 digits long)

The screenshot shows a user management interface. At the top, there are three navigation links: 'Government Service', 'User manage', and 'Service manage'. On the right, there is an email icon followed by the email address 'ivanzhujunwei@gmail.com'. Below this, the title 'User Manage / Add a user' is displayed. The form contains fields for 'ID number', 'Last name', 'First name', 'Email', 'Phone', 'Address', and 'Password'. The 'Last name' field contains 'Linda3', which is highlighted in red with the error message 'Numbers are not allowed here'. The 'First name' field is empty, with the error message 'You must enter the first name'. The 'Email' field contains 'linda@', with the error message 'Incorrect email'. The 'Phone' field contains '092723', with the error message 'Incorrect phone'. The 'Address' and 'Password' fields are empty. At the bottom of the form is a green button labeled 'Add the public user'.

## 4. Usability Design Review

### 4.1 Navigation

Government Service System has a clear and simple navigation. Pearson and Pearson (2008) claim that navigation should be distinctive enough so that users would be confident enough about their selection. Also, as Tognazzini (2014) explains, ‘users should never feel trapped inside a maze’.

Every step in the website can be navigated back. The navigation bar on the website for both public and worker is also easy to use. By clicking on “Government Service”, users can go back to their home page.

Besides, public can access their personal information via the “user” icon on the right corner in navigation bar.



Worker can access two control panels which are public user management and service management through the navigation bar.



## 4.2 Error prevention

“Visual cues and a clear layout should help preventing errors” (Flow,2011). Data created by users should have integrity and be valid. For example, when a worker is trying to add a public, some basic business rules should be considered, like entering an invalid email, error response will display.

User Manage / Add a user

ID number:	27157636	
Last name:	Ivan	
First name:	Zhu	
Email:	ivanzhujunweigmail.com	Incorrect email
Phone:	0123456789	
Address:	Clayton	
Password	governmentservice	

Add the public user

Furthermore, users should be prevented causing any error operation or violating business logic in a user-friendly and visual appealing way. For example, when a public user applies to use a service, the “Apply to use” button for that particular service should not be clicked for second time until he/she finishes current service use (also can be seen from #3.24, use a service).

Find a service / Service detail



Service NO.: 5  
 Service name: Citizenship Wizard  
 Service type: Citizenship

Currently in use

The Citizenship Wizard will give you information about what to do and how to apply for Australian citizenship.

### 4.3 Feedback

“A timely manner of response with a user's interaction vastly enhances a site's usability.” (Flow, 2011). Once the public apply to use a service, the displayed text will change to “Apply successfully”, in this case, worker will be fully aware of the process.

Find a service / Service detail



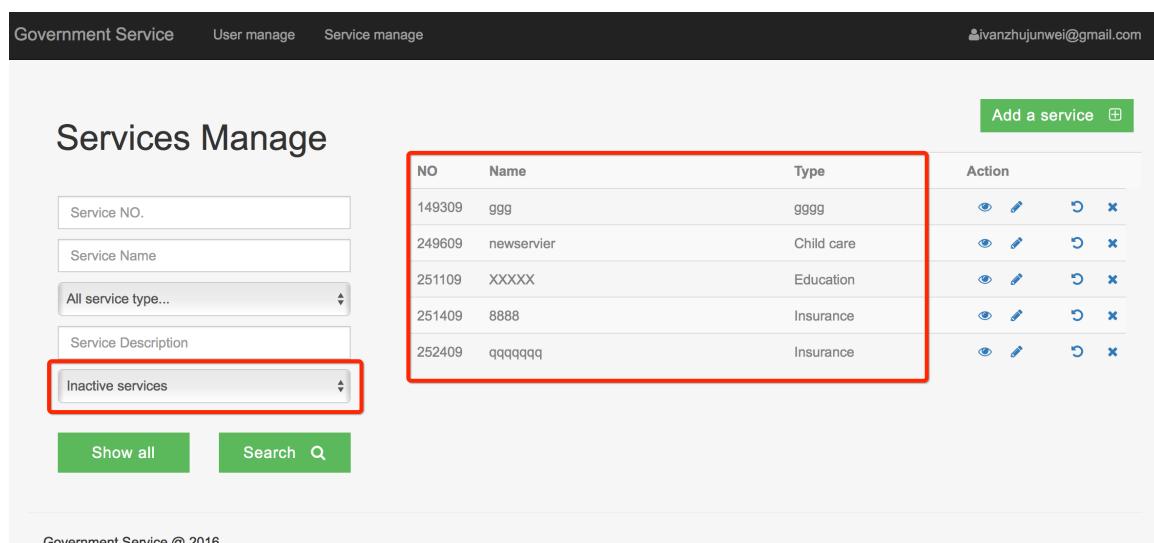
Service NO.: 2  
 Service name: Home and Contents Insurance  
 Service type: Insurance

Apply successfully

Protect your most valuable assets with quality cover from a name you can trust. Our home and contents insurance offers peace of mind at an affordable price.

### 4.4 Visual clarity

Content in a website is ideally presented in a natural and clear way. Government Service System always try to use different way to provide a visual appealing interface for customers. For example, when worker search the inactive services, all the brief service information will be presented in a light grey colour.

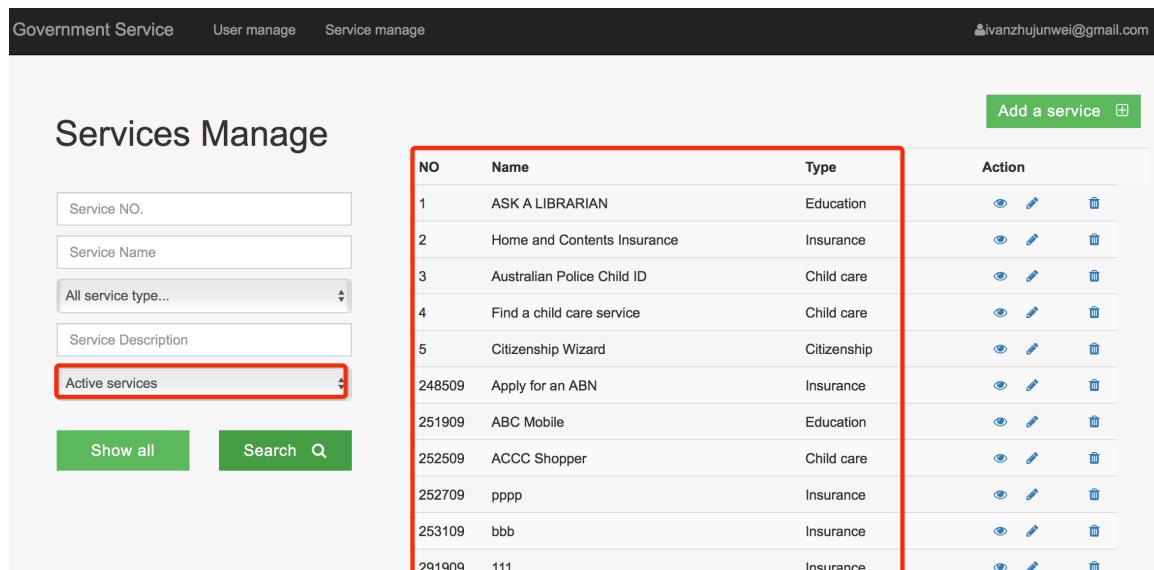


The screenshot shows a 'Services Manage' page. On the left, there is a search interface with fields for 'Service NO.', 'Service Name', 'All service type...', 'Service Description', and a dropdown menu currently set to 'Inactive services'. Below this are two green buttons: 'Show all' and 'Search' with a magnifying glass icon. On the right, a table lists services with columns for 'NO', 'Name', 'Type', and 'Action'. The entire table area is highlighted with a red box. The table data is as follows:

NO	Name	Type	Action
149309	ggg	9999	
249609	newservier	Child care	
251109	XXXXX	Education	
251409	8888	Insurance	
252409	qqqqqqq	Insurance	

Government Service © 2016

Compared with active services, workers will easily and clearly know the status of services they are processing.



The screenshot shows a 'Services Manage' page. On the left, there is a search interface with fields for 'Service NO.', 'Service Name', 'All service type...', 'Service Description', and a dropdown menu currently set to 'Active services'. Below this are two green buttons: 'Show all' and 'Search' with a magnifying glass icon. On the right, a table lists services with columns for 'NO', 'Name', 'Type', and 'Action'. The entire table area is highlighted with a red box. The table data is as follows:

NO	Name	Type	Action
1	ASK A LIBRARIAN	Education	
2	Home and Contents Insurance	Insurance	
3	Australian Police Child ID	Child care	
4	Find a child care service	Child care	
5	Citizenship Wizard	Citizenship	
248509	Apply for an ABN	Insurance	
251909	ABC Mobile	Education	
252509	ACCC Shopper	Child care	
252709	pppp	Insurance	
253109	bbb	Insurance	
291909	111	Insurance	

Another point about the visual clarity is that different icons used for different actions, like viewing, editing or activating a service, etc. Workers will not lose themselves among those actions.

## 5. Checklist of site functionality.

1. Credit Functionality		TICK if complete
Search for Service by		√
Service Name,		√
Service No		√

Type	√
Results with tabular format with heading.	√
Option to view the full details	√
<b>2. Distinction Functionality</b>	√
Government Workers can:	
View	√
Add	√
Update	√
Delete Services	√
Members of Public can use Services	√
<b>3. High Distinction Functionality</b>	
Login using a username and password	√
Government Workers search Members of Public by a <b>combination</b> of ID, last name, first name, type and email.	√
When adding a Service to the system, the information of the service can be obtained via web service	√
Make use of some features from JavaScript frameworks	√
<b>4. Technical Requirements</b>	
<b>Credit</b>	
JSF web clients	√
GUI Swing application clients	√
Persistence API	√
Application managed entity manager or container managed entity manager.	√
<b>Distinction</b>	
ONLY web client is required	√
BOTH Criteria API and JPQL	√
<b>High Distinction</b>	
Interaction between clients and database handled by EJBs	√
Ability of mapping inheritance to database must be demonstrated.	√
Bean validations used to validate data.	√
Consumption of web services conducted in EJBs.	√
Application secured using JAAS API.	√
<b>Audit</b>	
No breaking of copyright	

## 6. User stories

### 6.1 As a Public

- I want to search a service by different type, so that I can explore if any of them could be suitable for me.
- I can use a service.
- I can check my current and previous records of service use.
- I can view my current account information.

## 6.2 Worker

- I can manage public user, adding/updating/deleting a public user.
- I want to change the public's status if he/she is not going to be a member of Government Service Project anymore.
- I have the privilege to access all the current public's information, including account data, existing and previous service use.
- I can manage all the services, adding/updating/deleting a service.
- I can change the service's status if the service is not available anymore.
- I do not want public can access the services which are not available.
- I do not want to enter the service information every time when adding a new service, some template should be provided so that I can just use them.

## 7. Data dictionary

### 7.1 Table: PublicUser

P / F key	Field name	Data type	Field size	Notes
Primary key	USER_ID	INTEGER	10	Public id
	ADDRESS	VARCHAR	255	Public address
	EMAIL	VARCHAR	255	Public email
	FIRSTNAME	VARCHAR	255	Public first name
	LASTNAME	VARCHAR	255	Public last name
	ISACTIVE	SMALLINT	5	Public status, active or not
	PASSWORD	VARCHAR	255	Public log in password
	PHONE	VARCHAR	255	Public phone number
	USER_TYPE	VARCHAR	255	User type: public

### 7.2 Table: Worker

P / F key	Field name	Data type	Field size	Notes
Primary key	USER_ID	INTEGER	10	Worker id
	ADDRESS	VARCHAR	255	Worker address
	EMAIL	VARCHAR	255	Worker email

	FIRSTNAME	VARCHAR	255	Worker first name
	LASTNAME	VARCHAR	255	Worker last name
	ISACTIVE	SMALLINT	5	Worker status, active or not
	PASSWORD	VARCHAR	255	Worker log in password
	PHONE	VARCHAR	255	Worker phone number
	USER_TYPE	VARCHAR	255	User type: worker

### 7.3 Table: Service

P / F key	Field name	Data type	Field size	Notes
Primary key	SERVICE_NO	INTEGER	10	Service number
	NAME	VARCHAR	255	Service name
	ISACTIVE	SMALLINT	5	Service status, active or not
	DESCRIPTION	VARCHAR	255	Service description
	THUMBNAIL	VARCHAR	255	Service thumbnail name
	TYPE	VARCHAR	255	Service type

### 7.4 Table: ServiceType

P / F key	Field name	Data type	Field size	Notes
Primary key	TYPE_ID	INTEGER	10	Service type
	TYPE_NAME	VARCHAR	255	Service type name

### 7.5 Table: ServiceUse

P / F key	Field name	Data type	Field size	Notes
Primary key	USEID	INTEGER	10	Service use id
Foreign key	USED_BY	INTEGER	10	Public user id who linked to the service use
Foreign key	MANAGED_BY	INTEGER	10	Worker id who linked to the

				service use
Foreign key	USEDSERVICE	INTEGER	10	Service id
	USEDATE	VARCHAR	255	Used date
	IS_FINISHED	SMALLINT	5	Service status: finished or not

## 8. Reference:

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