

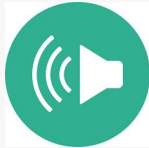
DCM Queue Management System

ticket kiosk . service counter . queue status display . statistical analysis



SMS gateway

Queue System Diagram



PA system

Internet connection to SMS gateway (LAN port #2)

Audio cable

HDMI cable

Ticket kiosk:

- 32" touch monitor
- thermal printer
- QR code scanner
- queue controller



LAN port x 2

Ticket	Counter	Ticket	Counter
A003	2	B017	3
B014	1		
A004	3		
C027	4		
A005	2		
B015	1		
D007	3		
B016	1		
C-28	4		

digital signage
videos & images

Queue status display panel



PoE network switch

LAN port #1

LAN



PCs for admin users

LAN



counter #1



counter #2



counter #3



counter #4

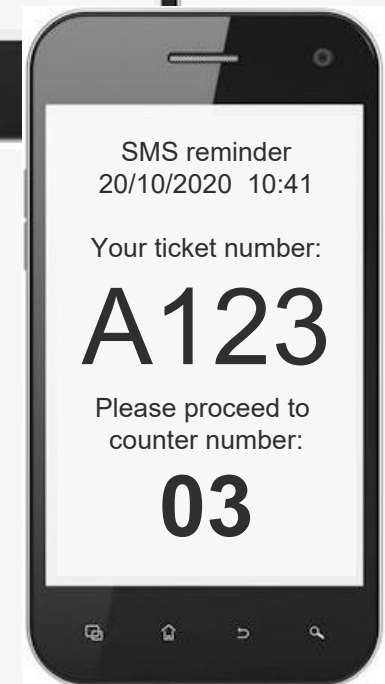
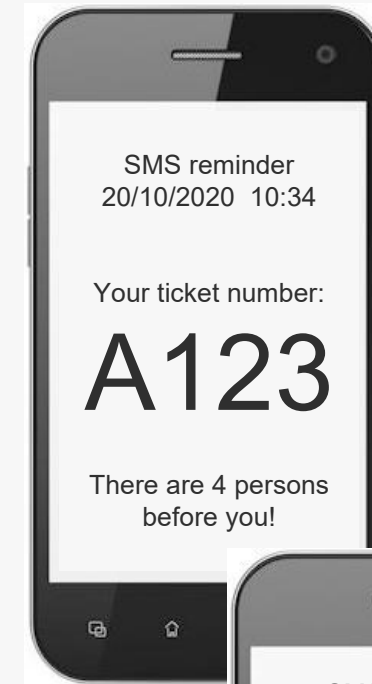
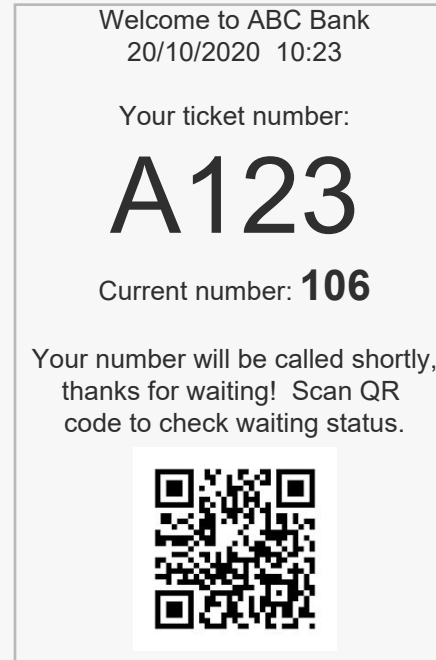
Android tablets with
built-in PoE

*the queue system is within a closed/separated network

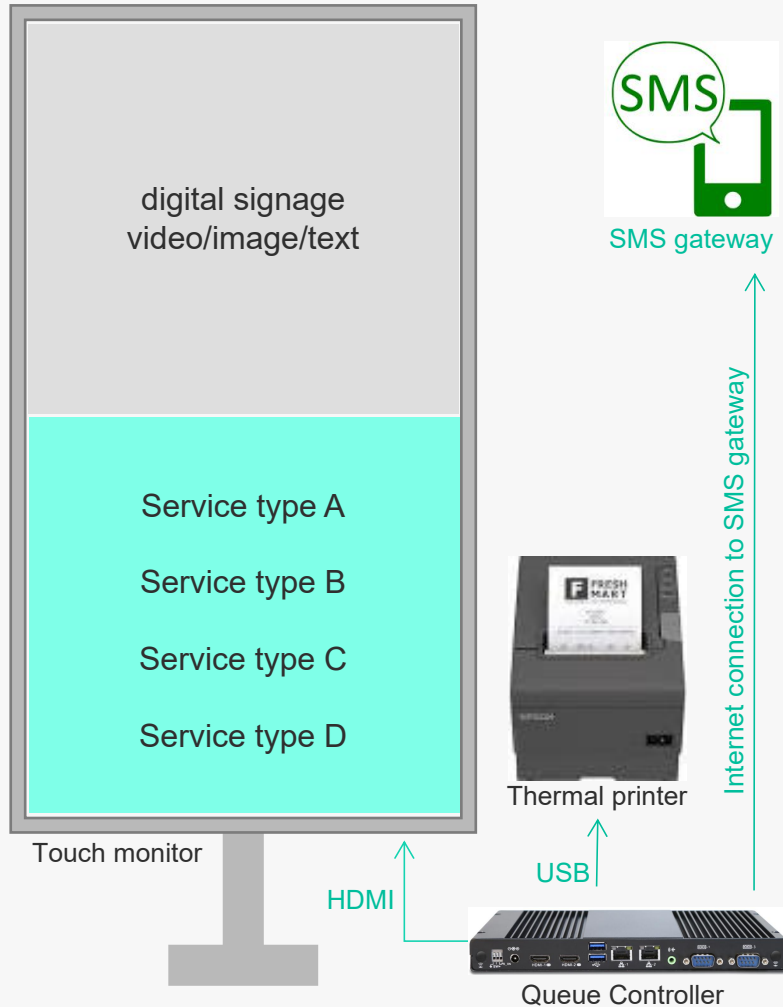
General features

The system supports:

- multiple ticket kiosks
- multiple queue status displays
- multiple service counters
- digital signage video/image/text
- multiple branch/shop locations
- English/繁體/簡體 web user-interface
- optional: SMS reminder (require SMS gateway service)
- optional: Scan QR code to check queue status (require QR code scanner on ticket kiosk)
- suitable for all types of service centers.



Ticket Kiosk

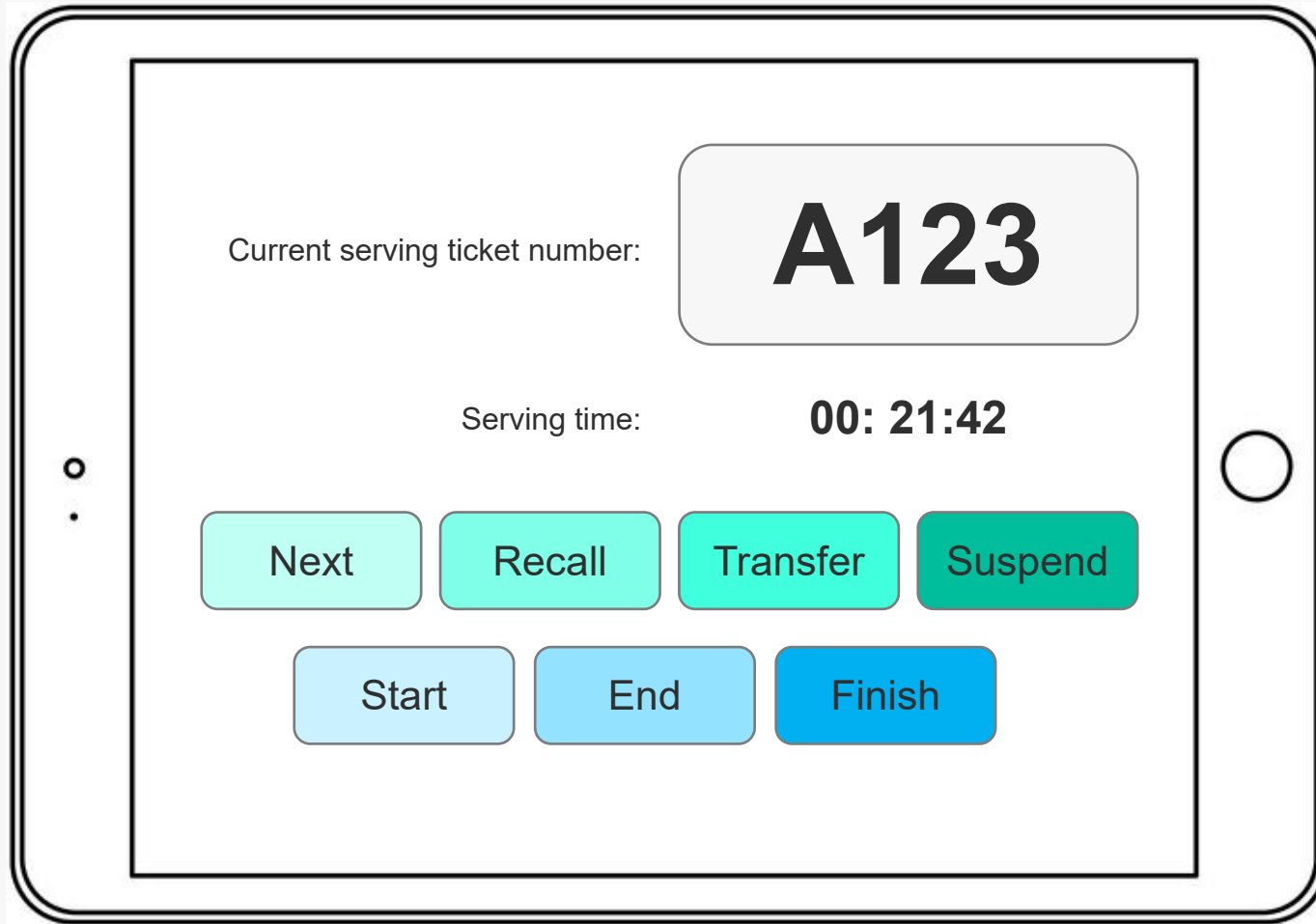


Descriptions:

- a ticket kiosk consists of a queue controller, a touch monitor, a thermal printer and a QR code scanner (optional item)
- touch monitor displays touch-icons of different service-types, provide custom-built template
- thermal printer prints out ticket with logo, ticket number (prefix+number), date/time, text message, provide custom-built template
- optional: QR code scanner allows customer to scan ticket to check the queue status message on a pop-up windows on the touch-screen, provide custom-built template
- queue controller controls all devices including queue status display and tablet devices at service counters



Service Counter



Features:

1. call next ticket (auto-assign a ticket number based on the service-type)
2. recall a ticket (auto-recall the last missing ticket number)
3. transfer to another counter
4. suspend a ticket
5. start serving (time stamp)
6. end serving (time stamp)
7. finish (to End a service does not necessarily mean the current ticket service is fully completed, the Finish button will mark the time stamp)
8. provide custom-built template
9. support Android tablets with PoE (or iPad with Wi-Fi)

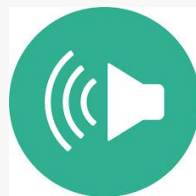
Queue Status Display

Features:

- display the ticket numbers being served by different counters
- provide custom-built template
- support voice announcement in multilingual via PA system
- support digital signage video/image contents playback in looping
- controlled by the queue controller

Ticket	Counter	Ticket	Counter
A003	2	B017	3
B014	1		
A004	3		
C027	4		
A005	2		
B015	1		
D007	3		
B016	1		
C-28	4		

digital signage
videos & images



voice announcement
via PA system

HDMI 2.0

audio line-out



Queue status display panel

Management Control

Admin users (or shop manager) can manage the following tasks via a web user-interface:

- manage service types, reset ticket number, cancel ticket, assign service types to counters
- manage user roles, user skills, user permissions
- monitor ticket and counter status, such as long handling time, ticket handling data, ticket summary, user log in/out, no-show ticket and cancelled ticket
- backup data, delete history data, restore data, change passwords

User Manage

- ▶ Add User
- ▶ User Listing

Add User

User Base :

Login ID : Password : Language : American English

First Name : Last Name : Staff Code :

Email : Mobile : Status : Enabled

User Role : ADM Role : MGR Role : CRS Role : Level :

User Skill :

Service	Notation	Status	Description
<input type="checkbox"/> A	A#Notation	Active	A#描述
<input type="checkbox"/> B	B#Notation	Active	B#Description
<input type="checkbox"/> C	C#Notation	Active	C#Description
<input type="checkbox"/> D	D	Active	D

User Access Right :

Module Name	Description
<input type="checkbox"/> Counter Service	Counter Service
<input type="checkbox"/> Cancel a Ticket	Cancel a Ticket
<input type="checkbox"/> User Listing	User Listing
<input type="checkbox"/> Add User	Add User

Reset Save User

User Listing

Role :

Role	Description
ADM	System Admin
MGR	Shop Manager
CSR	CSR

User :

Login ID	Name	Email	Mobile	ADM	MGR	CSR	Status	Create Date
<input type="checkbox"/> Admin	Admin Admin		61234567	Y	Y	Y	Enabled	21/03/2009 12:00
<input type="checkbox"/> demo2	demo2 demo2		62345678	Y	Y	N	Enabled	22/03/2009 23:09
<input type="checkbox"/> demo3	demo3 demo3			N	N	Y	Enabled	19/12/2011 21:04
<input type="checkbox"/> demo4	demo4 demo4			N	N	Y	Enabled	05/04/2012 18:32
<input type="checkbox"/> demo5	demo5 demo5			N	N	Y	Enabled	05/04/2012 18:32
<input type="checkbox"/> demo6	demo6 demo6			N	N	Y	Enabled	05/04/2012 18:33
<input type="checkbox"/> demo7	demo7 demo7			N	N	Y	Enabled	26/04/2012 10:41
<input type="checkbox"/> demo8	demo8 demo8			N	N	Y	Enabled	26/04/2012 10:42
<input type="checkbox"/> demo9	demo9 demo9			N	N	Y	Enabled	26/04/2012 10:42
<input type="checkbox"/> admin01	Admin User		63318974	N	N	Y	Enabled	27/09/2014 08:19
<input type="checkbox"/> Csrzyd	Dion Chung			Y	Y	Y	Enabled	06/10/2014 16:18
<input type="checkbox"/> csrtam	Fanny Tam			Y	Y	Y	Enabled	06/10/2014 16:39
<input type="checkbox"/> Csrtwt	Stephen Tam			Y	Y	Y	Enabled	06/10/2014 17:18
<input type="checkbox"/> Csrack	Andrew Wan			Y	Y	Y	Enabled	06/10/2014 18:24
<input type="checkbox"/> Csrcmy	Ken Chiang			Y	Y	Y	Enabled	06/10/2014 18:26
<input type="checkbox"/> Csrwmw	Mini Wong			Y	Y	Y	Enabled	06/10/2014 18:28

Statistical Analysis

Shop Manage

- Counter Skill
- Ticket Status
- **Ticket Data**
- Ticket Adjustment
- Shop Status

Ticket Data

Begin: End:

Ticket No.	Generation	Call	Start	End	Finish	Waiting Time	Handling Time	Max Duration	Handled by	Counter	Services	Status
A003	07/10/2014 11:07:09	11:10:08	11:10:17	---	---	3	0	0	csrtam	1		Processing
B009	07/10/2014 11:01:43	11:09:34	11:09:39	11:10:05	11:10:08	8	1	0	csrtam	1		Finished
B008	07/10/2014 10:59:45	11:09:00	11:10:15	---	---	11	0	0	Csrtwt	3		Processing
B007	07/10/2014 10:57:55	11:08:59	11:09:26	11:09:31	11:09:34	12	0	0	csrtam	1		Finished
B006	07/10/2014 10:57:54	11:04:08	11:04:18	11:08:50	11:08:59	7	4	0	csrtam	1		Finished
C004	07/10/2014 10:57:02	11:03:28	11:08:50	11:08:54	11:08:57	11						
B005	07/10/2014 10:56:47	10:57:23	10:57:35	11:03:24	11:03:28	1						
A002	07/10/2014 10:54:59	10:55:47	10:55:52	11:04:05	11:04:08	1						
C003	07/10/2014 10:54:55	10:55:34	10:55:46	10:57:16	10:57:19	1						
B004	07/10/2014 10:29:55	10:53:12	10:53:25	10:53:30	10:53:35	24						
B003	07/10/2014 10:29:54	10:37:41	10:37:44	10:52:38	10:53:07	8						
B002	07/10/2014 10:29:52	10:30:24	10:30:31	10:37:38	10:37:41	1						
B001	07/10/2014 09:52:29	09:53:31	09:53:35	10:07:24	10:30:24	1						
A001	07/10/2014 09:51:09	09:51:29	09:51:37	09:53:28	09:53:31	0						
C002	07/10/2014 09:39:44	09:41:32	09:41:44	09:43:22	09:51:29	2						
C001	07/10/2014 08:52:16	08:52:44	08:52:50	08:56:28	09:41:32	0						
B061	06/10/2014 17:57:34	17:59:11	19:00:36	19:00:41	19:00:44	63						

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Reports Manage

- Long Handling Time
- **Ticket Handling Data**
- Ticket Summary
- User Log In/Out
- No Show Ticket
- Cancelled Ticket

Ticket Handling Data

Begin: End:

Ticket No.	Generation	Start Service	End Service	Waiting Time	Handling Time	Max Duration	Single Service	Handled by	Services
A003	07/10/2014 11:07	11:10	11:22	3	12	0	N	csrtam	
B009	07/10/2014 11:01	11:09	11:10	8	1	0	N	csrtam	
B007	07/10/2014 10:57	11:09	11:09	12	0	0	N	csrtam	
B006	07/10/2014 10:57	11:04	11:08	7	4	0	N	csrtam	
C004	07/10/2014 10:57	11:08	11:08	11	0	0	N	Csrtwt	
B005	07/10/2014 10:56	10:57	11:03	1	6	0	N	Csrtwt	
A002	07/10/2014 10:54	10:55	11:04	1	9	0	N	csrtam	
C003	07/10/2014 10:54	10:55	10:57	1	2	0	N	Csrtwt	
B004	07/10/2014 10:29	10:53	10:53	24	0	0	N	csrtam	
B003	07/10/2014 10:29	10:37	10:52	8	15	0	N	csrtam	
B002	07/10/2014 10:29	10:30	10:37	1	7	0	N	csrtam	
B001	07/10/2014 09:52	09:53	10:07	1	14	0	N	csrtam	
A001	07/10/2014 09:51	09:51	09:53	0	2	0	N	csrtam	
C002	07/10/2014 09:39	09:41	09:43	2	2	0	N	csrtam	
C001	07/10/2014 08:52	08:52	08:56	0	4	0	N	csrtam	
B061	06/10/2014 17:57	19:00	19:00	63	0	0	N	Csrtwt	
A049	06/10/2014 17:30	17:30	17:30	0	0	0	N	Csrsyd	

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- all action time logs are saved in the system database for statistical analysis
- data can be exported to Excel files
- users can connect a notebook PC to the closed/separated queue system network to view and export the data

Key item checklist

Hardware items & SMS service:	Software items:
1. Queue controller x 1 unit per ticket kiosk	Queue management software license
2. Touch monitor x 1 unit per ticket kiosk	Kiosk get-ticket touch-screen template
3. Thermal printer x 1 unit per ticket kiosk (plus thermal papers)	Thermal ticket template
4. Queue status display panel x 1 unit (or more)	Queue status display template
5. Android tablet x 1 unit per service counter	Web application for tablet at each service counter
6. Optional: QR code scanner x 1 unit per ticket kiosk	Optional: scan QR code ticket status template
7. Optional: SMS gateway portal (require internet connection)	Optional: SMS gateway software application
8. Optional: PC for admin user operation	Optional: ticket status API (i.e. for mobile App development)
9. 8-ports PoE network switch x 1 unit (PoE for android tablets)	

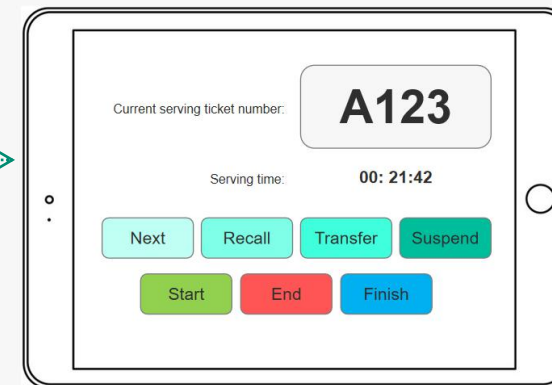


Screenshots

Operation from counter

The screenshot shows a web interface for counter service management. On the left is a sidebar with 'Counter Manage' and sub-items 'Counter Service' and 'Cancel a Ticket'. The main area is titled 'Counter Service' and contains several input fields: 'Ticket Number' (with 'Waiting:)' on the right), 'Recall Times', 'Ticket Status', 'Ticket Create', and 'No Show Remark'. A 'Broadcast Language' dropdown is set to 'Cantonese'. At the bottom, there is a 'Service' dropdown set to 'All' and a row of buttons: 'Next', 'Next-Suspend', 'Recall', 'Start', 'End', and 'Finish'.

**this web user-interface runs on the Android tablet at each service counter, the template can be custom-built to meet customer's need, for example*



Operation from shop manager

Shop Manage				
▶ Counter Skill				
▶ Ticket Status				
▶ Ticket Data				
▶ Ticket Adjustment				
▶ Shop Status				
Ticket Status				
Service	Latest Ticket	Current Ticket	Currently Handled By	Waiting Tickets
A	A003	A003	csrtam	0
B	B010	B009		1
C	C004	C004		0
D	---	---		0
M	---	---		0
O	---	---		0
P	---	---		0
V	---	---		0

Shop Manage					
▶ Counter Skill					
▶ Ticket Status					
▶ Ticket Data					
▶ Ticket Adjustment					
▶ Shop Status					
Shop Status					
Counter Id	Name	User Login ID	Log In/Out	Status	Current/Last Ticket
1	Counter 1	csrtam	07/10/2014 09:41	Login	B010
2	Counter 2	Csrsyd	07/10/2014 11:22	Login	---
3	Counter 3	Csrtwt	07/10/2014 10:07	Login	B008
4	Counter 4	demo4	07/01/2014 15:04	Inactive	---
5	Counter 5	demo5	07/01/2014 15:05	Inactive	---
6	Counter 6	demo6	07/01/2014 15:07	Inactive	---
7	Counter 7	demo7	07/01/2014 15:46	Inactive	---
8	Counter 8	demo8	07/01/2014 20:03	Inactive	---
9	Counter 9	Admin	07/10/2014 11:08	Login	---

System setup by shop manager

The screenshot displays the 'Tools Manage' sidebar on the left with the following options:

- Backup Data
- Delete History Data
- Restore Data
- Reset Ticket Number**
- Change User Password

The main content area is divided into two sections:

Reset Ticket Number

	Service	Notation	Description	Current Number	Waiting	Start	End	Status
<input checked="" type="checkbox"/>	A	A#Notation	A#描述	3	0	1	999	Active
<input checked="" type="checkbox"/>	B	B#Notation	B#Description	11	0	1	999	Active
<input checked="" type="checkbox"/>	C	C#Notation	C#Description	4	0	1	999	Active
<input checked="" type="checkbox"/>	D	D	D	0	0	1	999	Active
<input type="checkbox"/>	M	M#Notation	M#Description	0	0	1	999	Active
<input type="checkbox"/>	O							
<input type="checkbox"/>	P							
<input type="checkbox"/>	V							

Config Manage

- Service
- Reason
- Counter**
- Global Setting
- Queue Availability

Counter

	Counter Id	Name	Status	Description	LCD Line
<input type="checkbox"/>	<u>1</u>	Counter 1	Login	Counter 1	1
<input type="checkbox"/>	<u>2</u>	Counter 2	Login	Counter 2	1
<input type="checkbox"/>	<u>3</u>	Counter 3	Login	Counter 3	1
<input type="checkbox"/>	<u>4</u>	Counter 4	Inactive	Counter 4	1
<input type="checkbox"/>	<u>5</u>	Counter 5	Inactive	Counter 5	1
<input type="checkbox"/>	<u>6</u>	Counter 6	Inactive	Counter 6	1
<input type="checkbox"/>	<u>7</u>	Counter 7	Inactive	Counter 7	1
<input type="checkbox"/>	<u>8</u>	Counter 8	Inactive	Counter 8	1
<input type="checkbox"/>	<u>9</u>	Counter 9	Login	Counter 9	1

Buttons: **New Counter**, **Delete**, **Clear Login Con**



Q & A

Thank you!