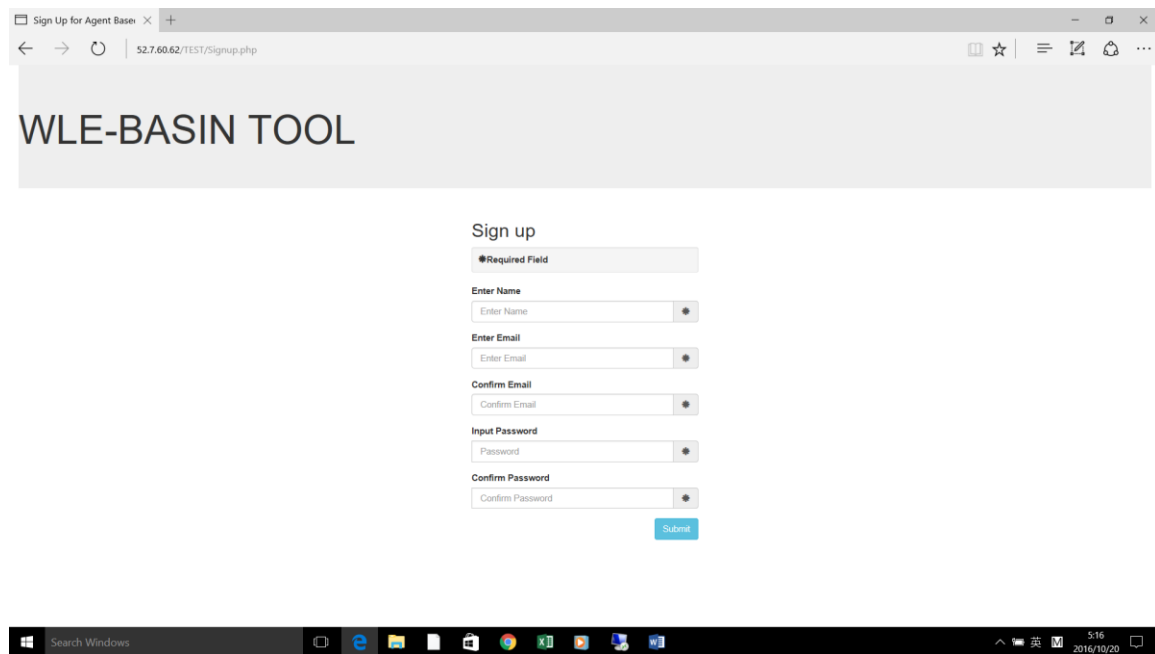


Quick Start

The web interface provides mainly 7 functions, including authentication system, starting new input case, view and manage previous input cases, start a negotiation model, start a scenario model, view results and compare results.

1 Authentication system

The authentication system consists of two parts, a sign-up page and a sign-in page. Figure 1 shows the interface design of the system.



The screenshot displays a web browser window with the title "Sign Up for Agent Base" and the URL "52.7.60.62/TEST/Signup.php". The page features a large header "WLE-BASIN TOOL" in a light gray box. Below the header is a "Sign up" form with the following fields:

- Required Field** (indicated by a red asterisk)
- Enter Name**: A text input field with a red asterisk.
- Enter Email**: A text input field with a red asterisk.
- Confirm Email**: A text input field with a red asterisk.
- Input Password**: A text input field with a red asterisk.
- Confirm Password**: A text input field with a red asterisk.

A blue "Submit" button is located at the bottom right of the form. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons, including Edge, File Explorer, and various office applications. The system clock indicates the time is 5:36 on 2016/10/20.

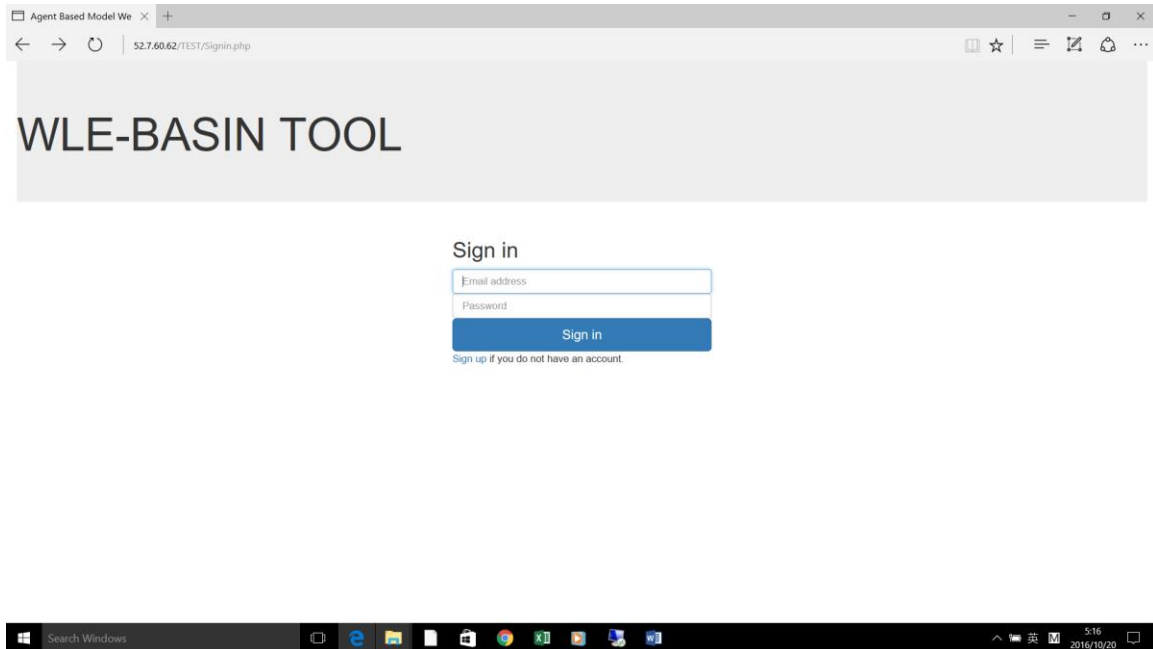


Figure 1 Interface design

2 Main Page

The main functions of this website are displayed in the main page, and the user interface of the main page is show as Figure 2.

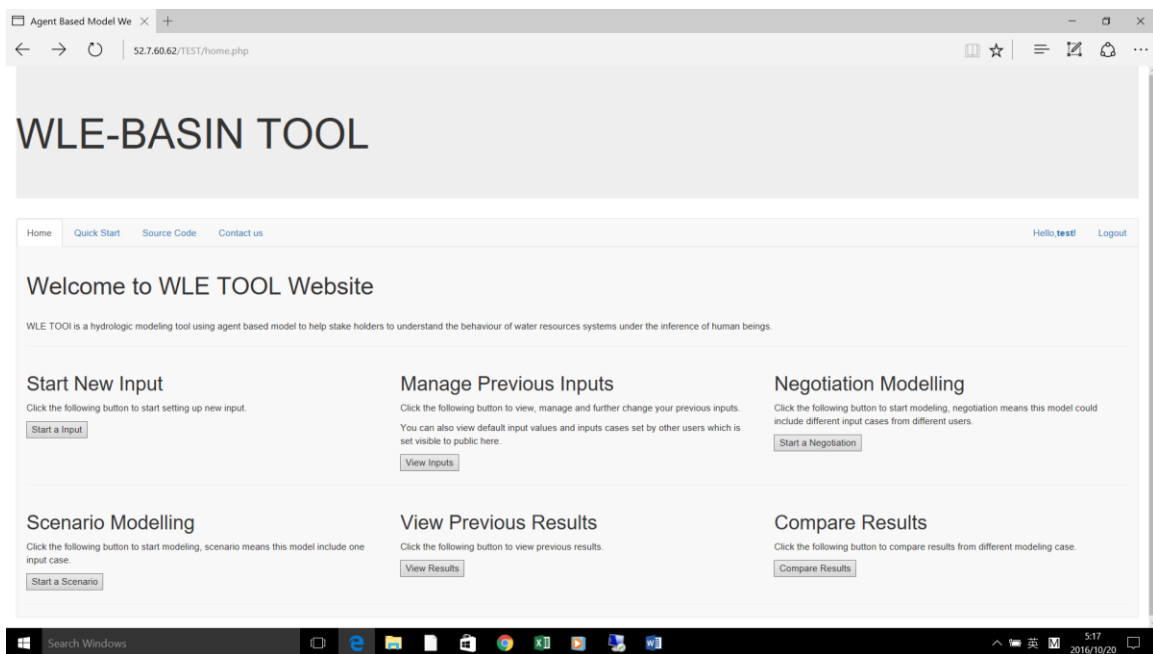
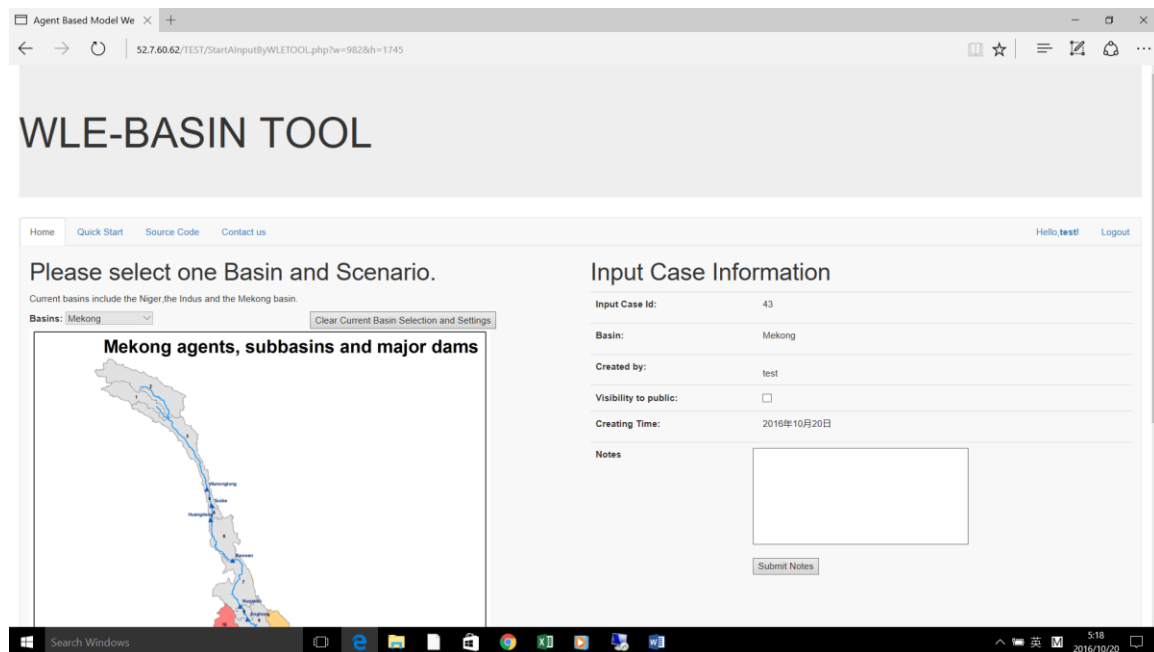


Figure 2 Main Page

3 Start Input Case

By clicking “Start a Input” button on the home page, users could start their new input case. Users can select a basin to set up a model of their choice by clicking on basin options in a drop-down menu. Then, the map for selected basin will show up, with each part of the map linked with a corresponding agent Id using <area> tag provided by HTML. Once a user clicks on the map, a new page will pop-out for the users to set values of input variables for the corresponding agent. For each of these variables, a brief description, a current value and an input field is provided. Users can use the slider bar or group of radio buttons are provided to change the value, and the range of the value is limited by the slider bar or radio choices to ensure feasible input. User can click on the confirm button to save their settings and the server will save their settings to the database. Users can also leave some notes on the right part of the page to help them identify their input case if they want to retrieve the input case in the future. The user interface design of “Starting new input case” is shown in Figure 3.



Agent Based Model Web Based Application - Microsoft Edge

52.7.60.62/TEST/setattr.php?agentid=1&basin=Mekong

Please specify the following input variables.

Note, rankings for hydropower, ecosystem and agriculture should be different!

Variables	Default Value	Current Value	Change Value
Level of Cooperation	35	35	<input type="range"/>
Priority of Agriculture Production	3	3	<input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3
Priority of Hydropower generation	2	2	<input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3
Priority of Ecosystem service	1	1	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3

Figure 3 Start A New Input Case

Note, here we require input ranking for ecosystem, hydropower generation and crop irrigation to be different. Therefore, if this requirement not satisfied, a red warning will be given and users will be asked to specify the ranking again. Figure 4 shows this warning.

Agent Based Model Web Based Application - Microsoft Edge

52.7.60.62/TEST/setattr.php?agentid=1&basin=Mekong&fault=1

Please specify the following input variables.

Failed to set variable value, same ranking exists!

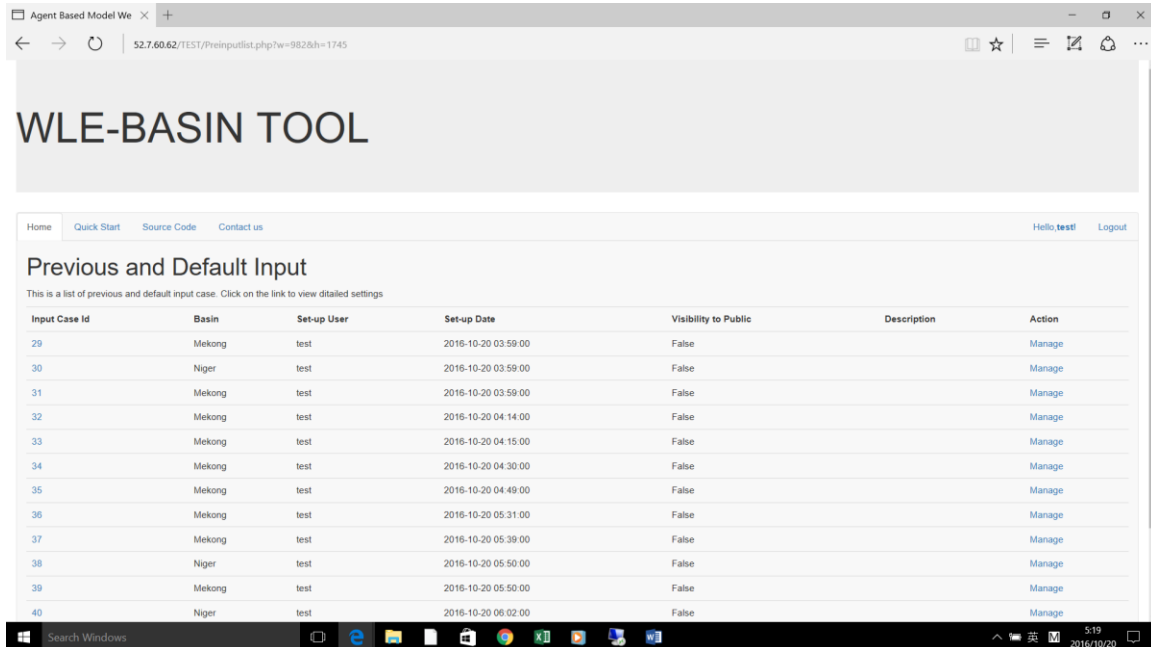
Note, rankings for hydropower, ecosystem and agriculture should be different!

Variables	Default Value	Current Value	Change Value
Level of Cooperation	35	75	<input type="range"/>
Priority of Agriculture Production	3	3	<input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3
Priority of Hydropower generation	2	2	<input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3
Priority of Ecosystem service	1	1	<input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3

Figure 4 Invalidity Warning

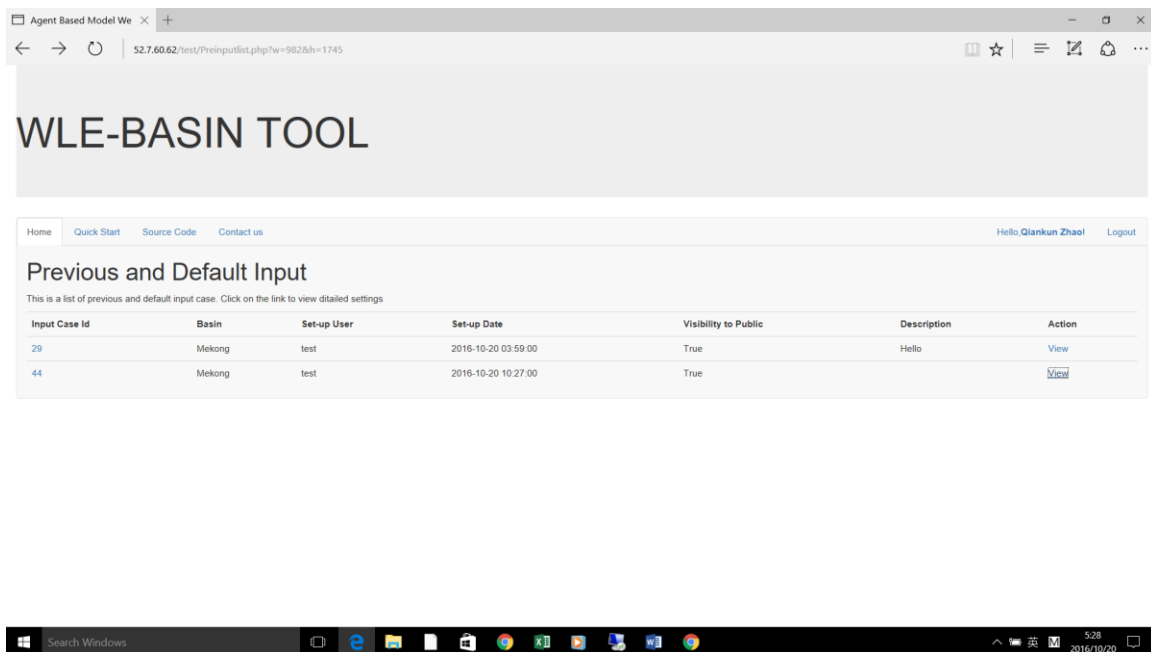
4 View Inputs

By clicking “View Inputs” button on the home page, users could view their previous inputs and public inputs set up by others. Figure 5 shows the list of previous inputs. Note, users can only change their own inputs, therefore, there is only ‘View’ link for public inputs, while the link is ‘Manage’ for users’ own inputs.



The screenshot shows the WLE-BASIN TOOL web application. The header includes navigation links: Home, Quick Start, Source Code, and Contact us. The user is logged in as 'test' and can click 'Logout'. The main section is titled 'Previous and Default Input' and contains a table of input cases.

Input Case Id	Basin	Set-up User	Set-up Date	Visibility to Public	Description	Action
29	Mekong	test	2016-10-20 03:59:00	False		Manage
30	Niger	test	2016-10-20 03:59:00	False		Manage
31	Mekong	test	2016-10-20 03:59:00	False		Manage
32	Mekong	test	2016-10-20 04:14:00	False		Manage
33	Mekong	test	2016-10-20 04:15:00	False		Manage
34	Mekong	test	2016-10-20 04:30:00	False		Manage
35	Mekong	test	2016-10-20 04:49:00	False		Manage
36	Mekong	test	2016-10-20 05:31:00	False		Manage
37	Mekong	test	2016-10-20 05:39:00	False		Manage
38	Niger	test	2016-10-20 05:50:00	False		Manage
39	Mekong	test	2016-10-20 05:50:00	False		Manage
40	Niger	test	2016-10-20 06:02:00	False		Manage

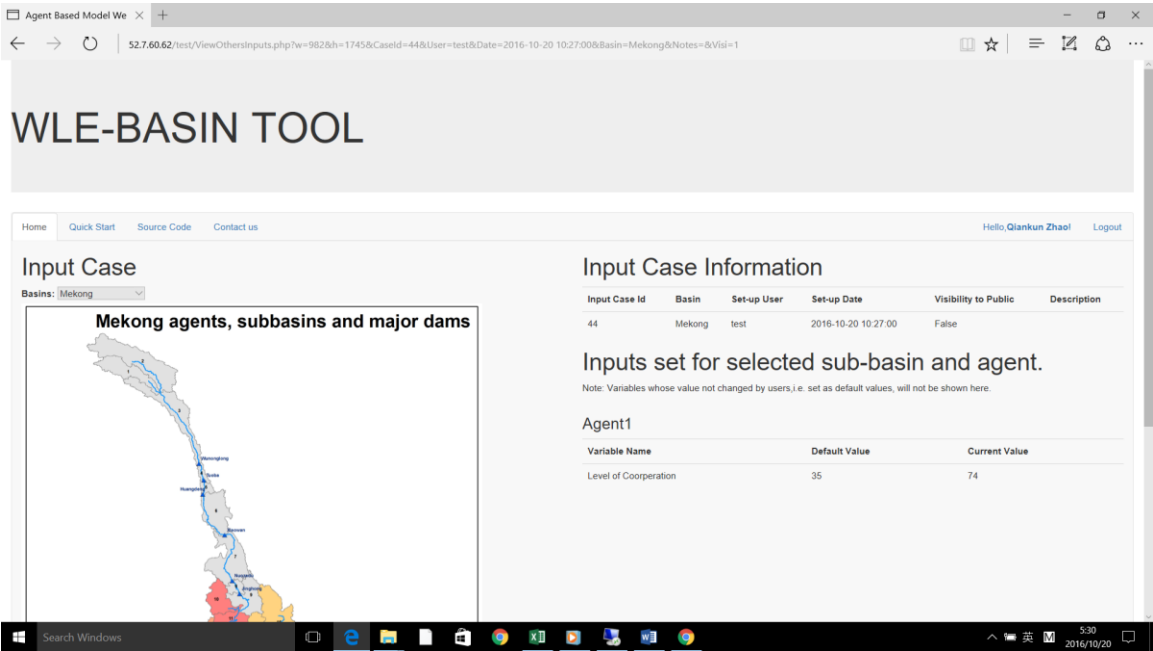


The screenshot shows the WLE-BASIN TOOL web application. The header includes navigation links: Home, Quick Start, Source Code, and Contact us. The user is logged in as 'Qiankun Zhao' and can click 'Logout'. The main section is titled 'Previous and Default Input' and contains a table of input cases.

Input Case Id	Basin	Set-up User	Set-up Date	Visibility to Public	Description	Action
29	Mekong	test	2016-10-20 03:59:00	True	Hello	View
44	Mekong	test	2016-10-20 10:27:00	True		View

Figure 5 Lists of previous inputs

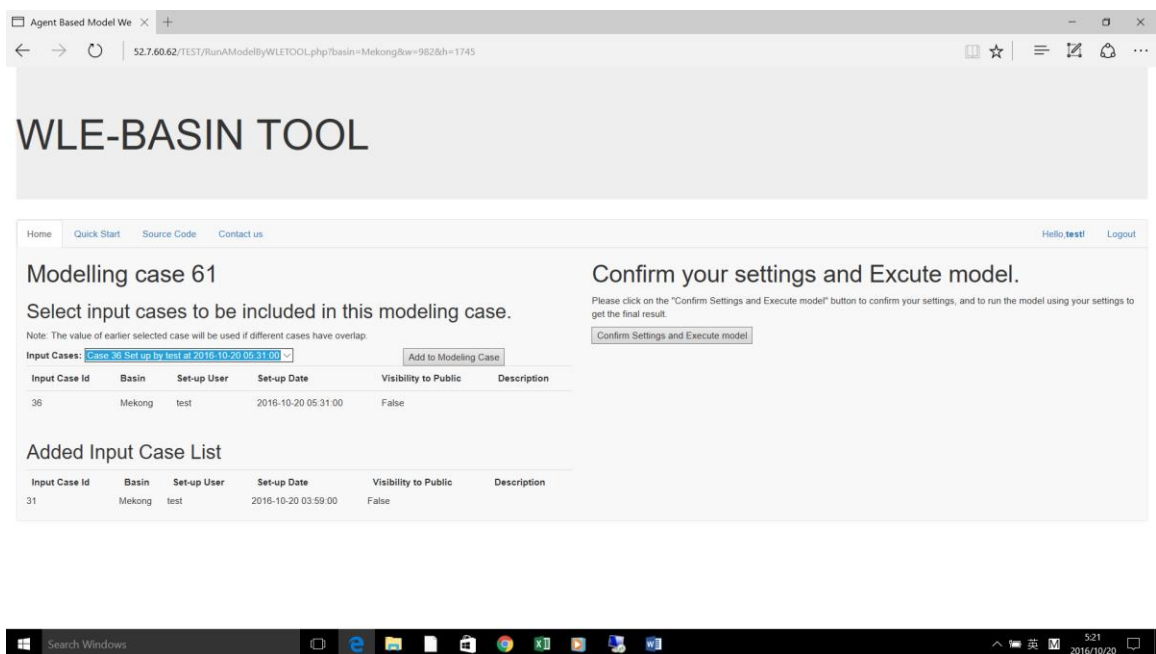
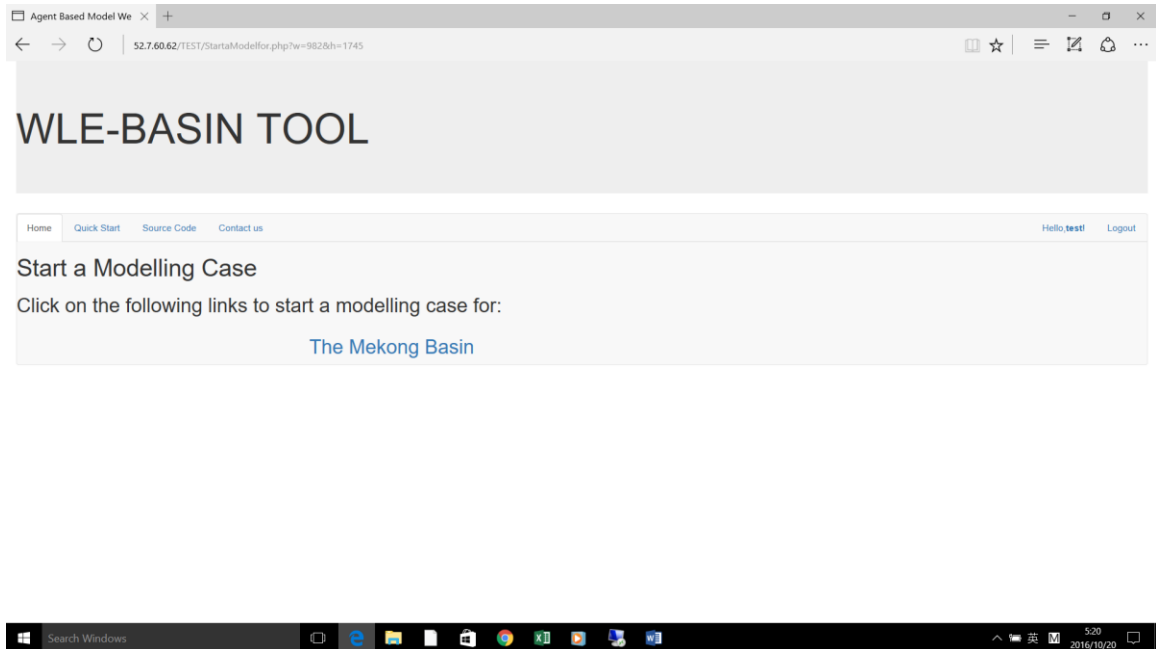
After clicking ‘View’ button, users can view others inputs, as shown in Figure 6. After clicking ‘Manage’, page will be redirected to Input Case page as shown in Figure 3.

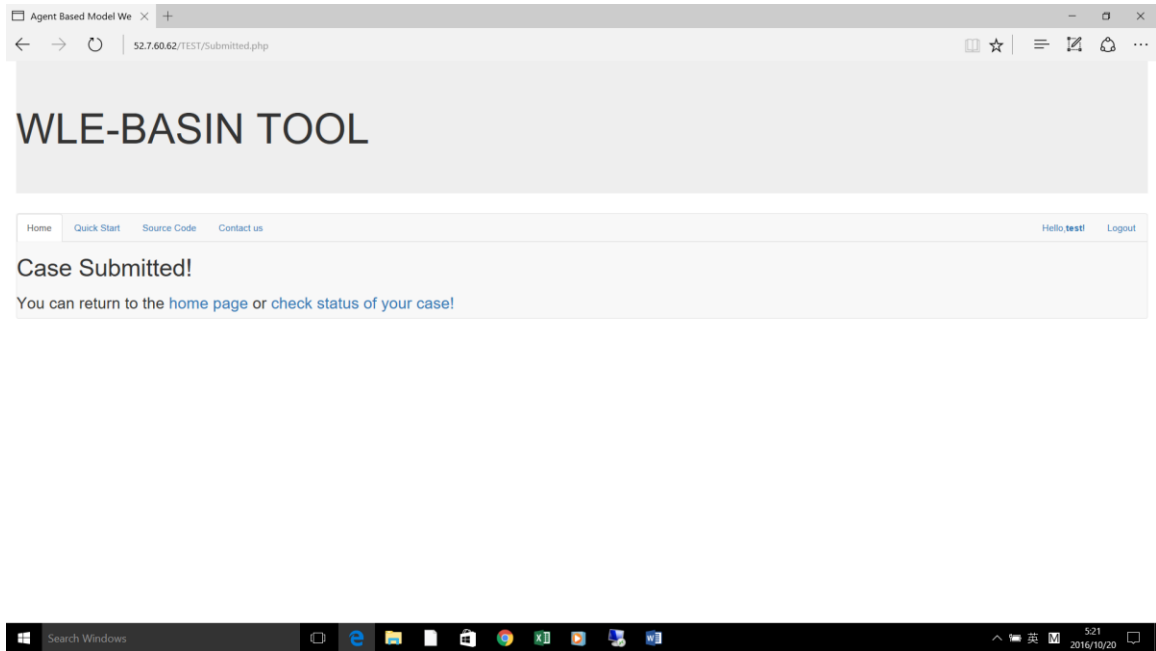


6 View others’ inputs

5 Negotiation Mode

By clicking “Start a Negotiation” button on the home page, users could start a negotiation model. They should select a basin first, then add existing input cases to the model case before executing model. The user interface is shown in Figure 7.





7 Start Negotiation Model

8 Scenario Mode

By clicking “Start a Scenario” button on the home page, users could start a scenario model. They should select a basin first, then select an input case to start modeling. The user interface is shown in Figure 8.

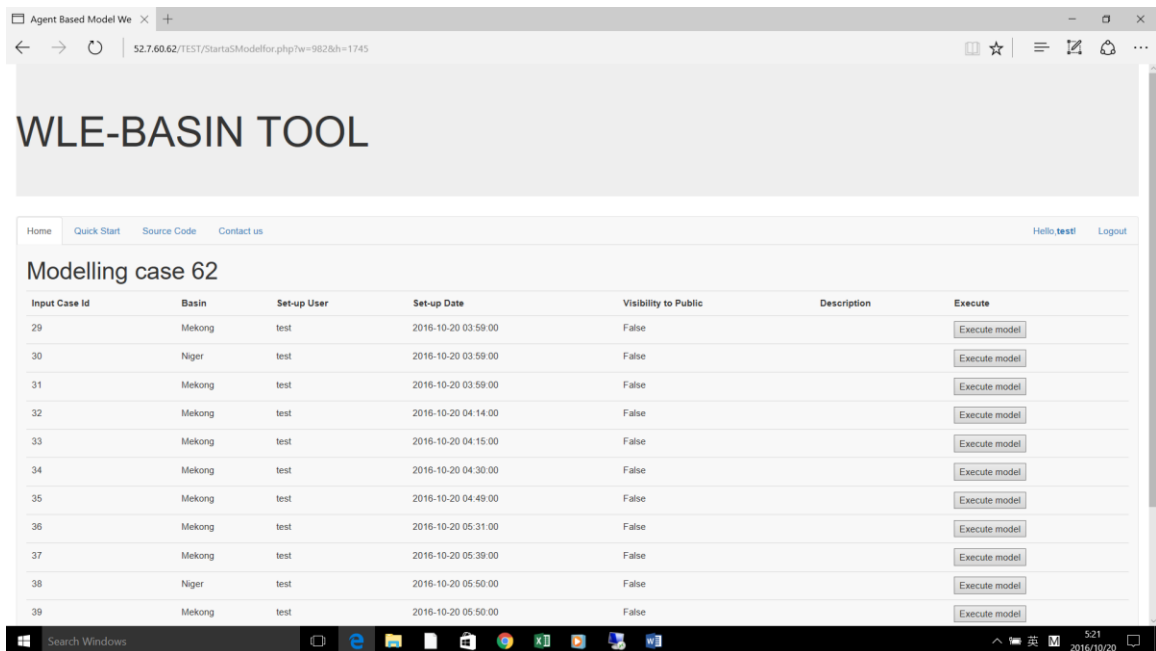


Figure 8 Start Scenario Model

9 View Result

By clicking “View Result” button on the home page, users could view previous model result. They should select a model case first, then click on the map to view result for a specific agent. The user interface is shown in Figure 9. And an example of visualized result is shown in Figure 10.

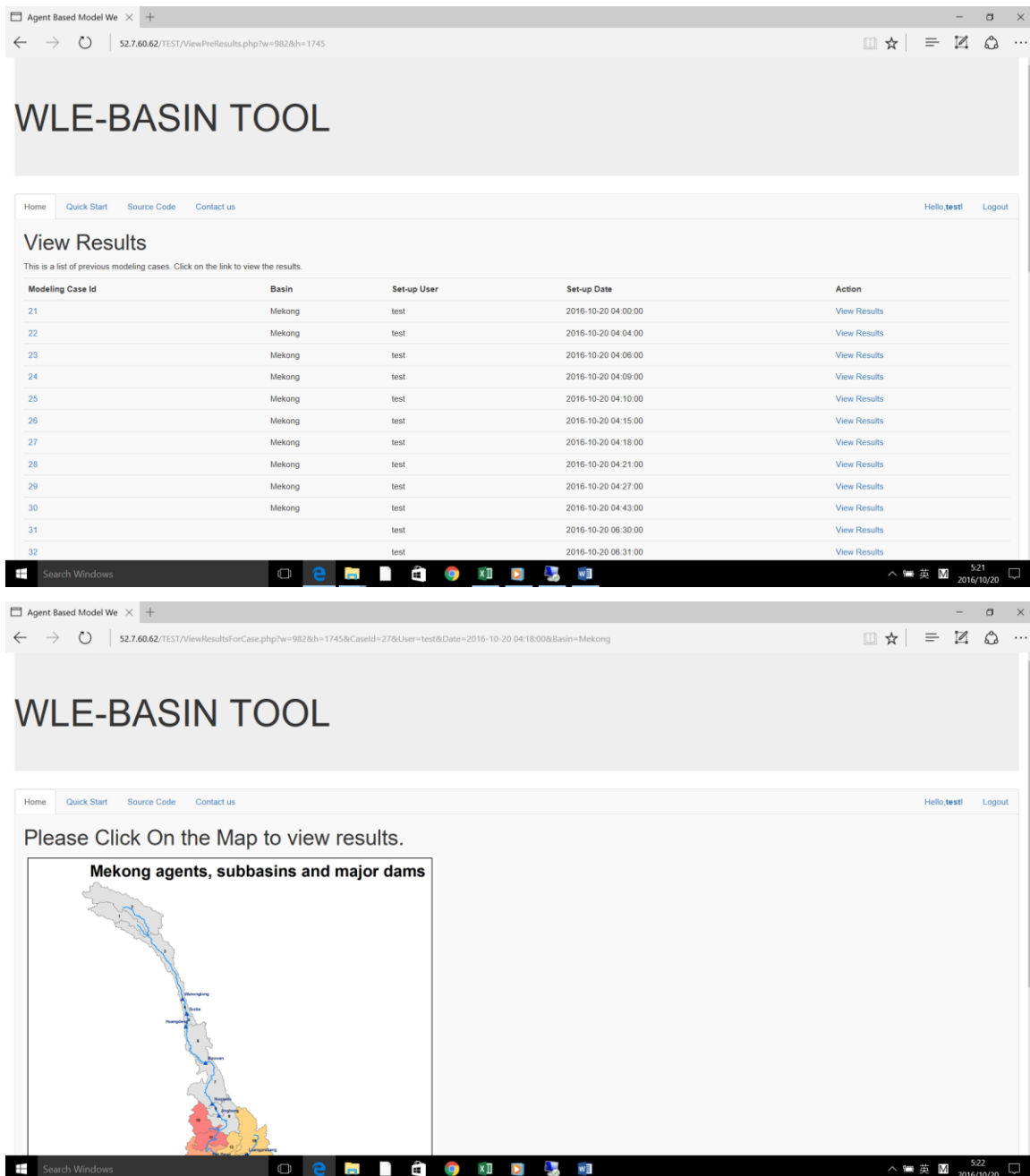


Figure 9 View Results

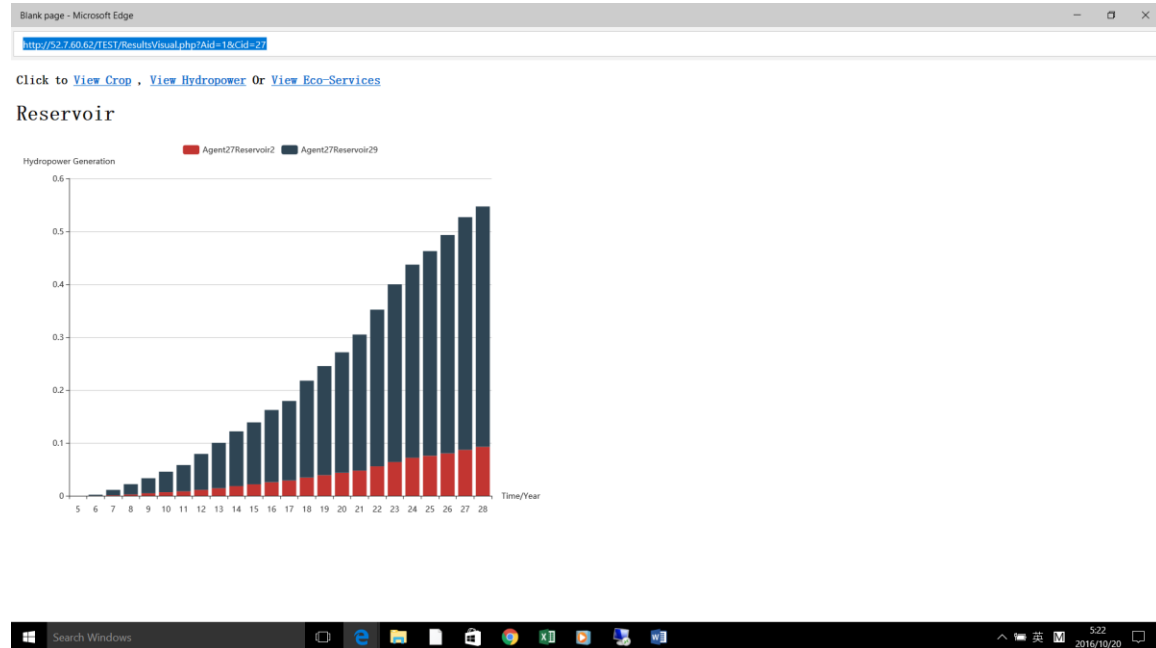


Figure 3.18 Visualize results

8 Compare results

By clicking “Compare Results” button on the home page, users could compare two previous model results. They should select two model cases first, then click on the map to view result for a specific agent. The user interface is shown in Figure 11. And an example of visualized result is shown in Figure 12.

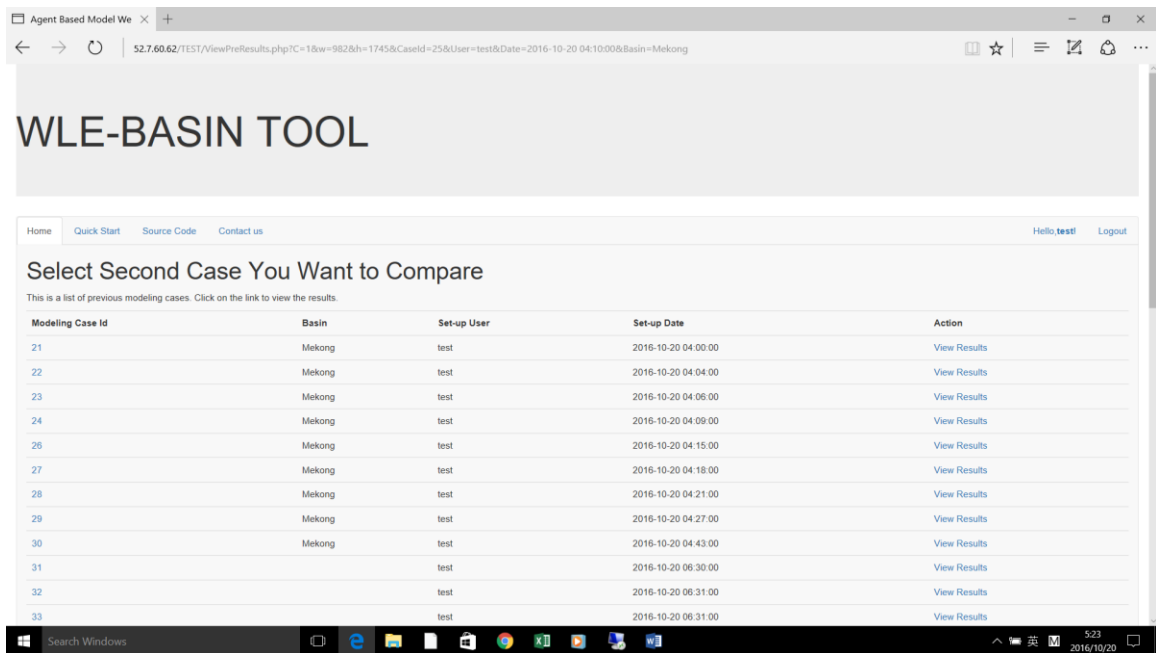
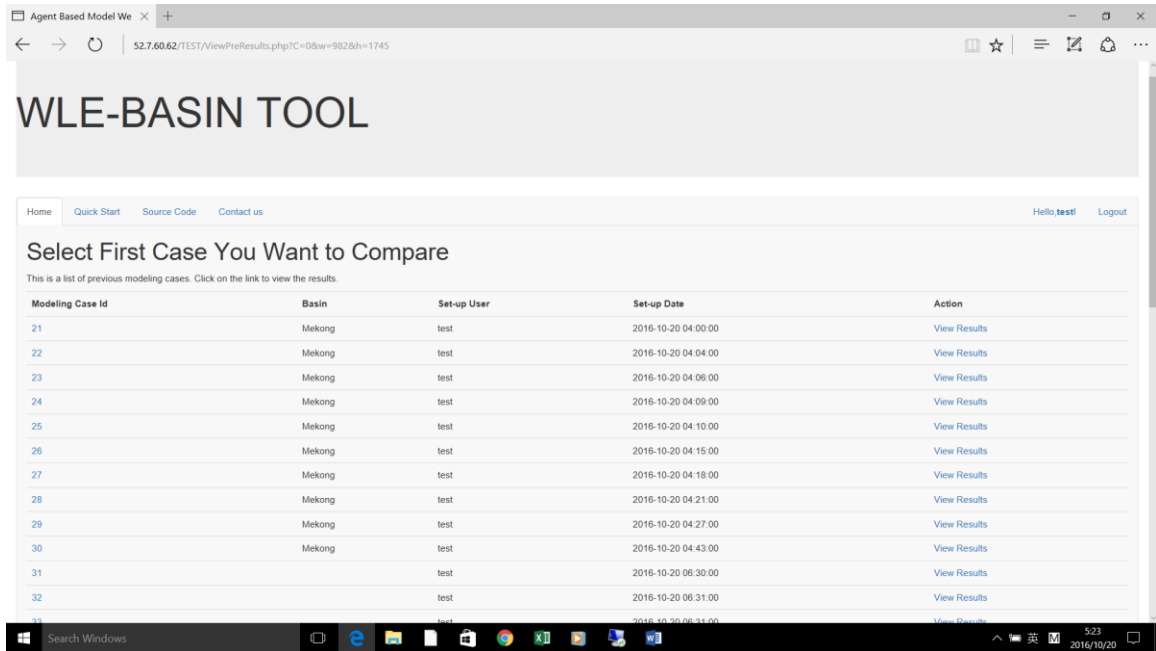


Figure 11 Select two case for compare results

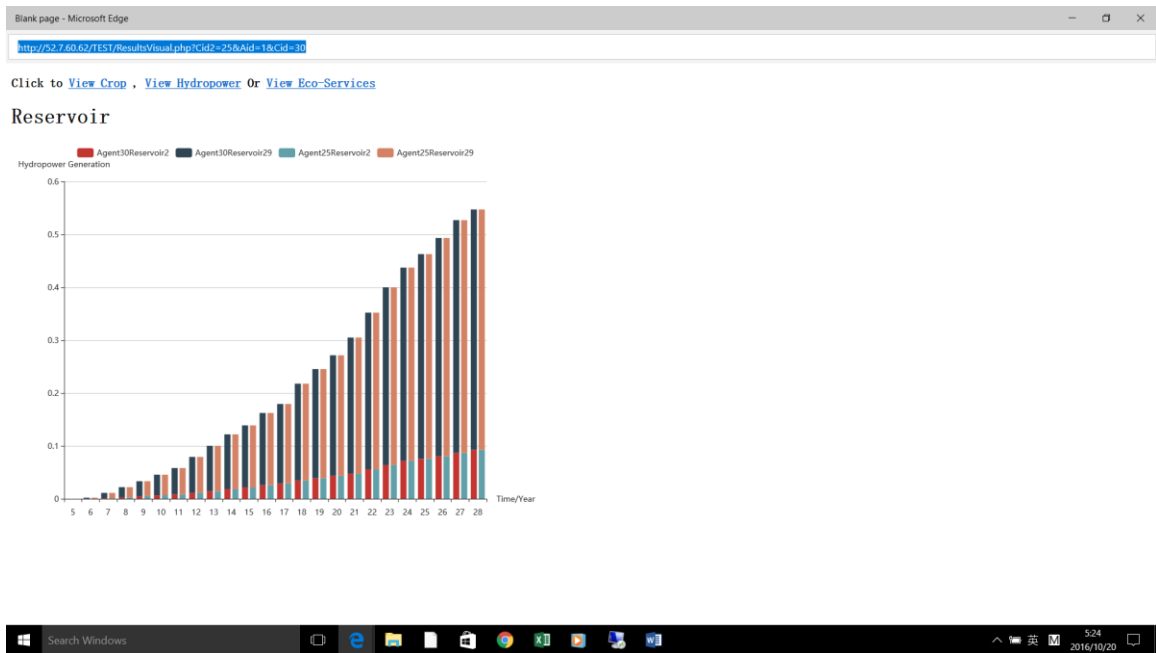


Figure 12 Compare Result Visualization