



Usability Testing Report

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Date of Test: April 07, 2016
Location of Test: UMass Lowell, MA

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Executive Summary

The goal of this study was to set up a usability test for our website app called, Sudoku Zen Garden. Our top priority was to observe how testers interacted with our website and discover where testers struggled. These observations would allow us to gain critical feedback on how user-friendly the application was.

Testing Methods

Demographic of Testers

- The average age was 24.
- Most of them were technically inclined.
- All but one were male.

Instructions and Task List for Testers

We laid out several very easy tasks for the testers to complete. The tasks included things such as changing options and playing the game. Our test was designed to get them to explore our website in order to solve particular tasks. That way, we could assure our website had a layout that was simple and easy to use.

Questions for Evaluators

We asked a few questions on how long it took them to get started and how long it took them to get through the tutorial. We wanted the tutorial to be short but informative and we created a good portion of the questions to make sure people were actually reading through it. We also

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wanted to make sure testers were not finding the tutorial so boring/terrible, that they would want to skim or skip over it and creating frustration later during the testing process. We also wanted to know if the interface for the menus was painful to navigate through. Lastly we wanted to know if they spent time exploring the options that were not yet implemented and our questions to them asked if they thought these were important options to have or if they saw it more as extra stuff they wouldn't use.

What did Testers do

We asked the testers to view the tutorial to learn how to play. Then change a theme option. We asked them to change the difficulty of the puzzle and try playing for a minute or two. Lastly we asked them to check if they had any invalid inputs using our built in tools and change any invalid inputs to valid ones.

What data we collected

We collected data on how easy our website was to use, what testers enjoyed about it, and most important, the testers constructive feedback to improve our site. We ended our conversation with asking them if they would want one feature added and what would that be?

For most users, our website worked fine and was easy to you. We did have a couple of rough areas. The first was the tutorial. It was poorly worded and the layout was bad. People were having trouble scrolling down with it, they often failed to find the second scrollbar for the tutorial. The second major problem was that some people were putting letters into our game.

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This was unacceptable and we need to change it to be numbers 1-9 only. The last major problem was solving the game. They had no way to determine when they were done, and the solve button failed to work for several users.

Major Findings and Recommendations

- List major issues -
 - Tutorial was poorly worded.
 - Tutorial was hard to navigate.
 - The game would accept any inputs.
 - The solve button failed to work after some users starting playing.
 - We do not have the accounts system working.
- Identify solutions -
 - Make the tutorial stretch horizontally so that they do not need to scroll.
 - Reword the tutorial and get a few others to read it over before using it. We will also use a better image for clarity.
 - We will disable all inputs except for numbers 1-9.
 - We will add a warning that their game progress will be erased and then we will reset the current game board and the computer will solve it afterwards.
 - We will get the account system working.



Detailed Findings and Recommendations

What do we plan to add to the final version?

We want to add more sounds, such as a sound when you successfully solve the puzzle and a negative sound when you enter a conflicting value in a square so that users know when they have completed it. Right now they don't know when they are really done. For the conflicting sound, we want them to clearly know when they enter bad values. When we change the theme we want to change the entire CSS of the page, not just the background image, some players thought that our colors clashed at times. We want to move the timer, most users didn't notice it at all and so we want to move it to the main screen and have an option to turn it off instead. We will also add a pause button to the timer in case the player needs to leave at some point.

Changes we want to make but don't have time for

One user wanted to use the arrow keys to navigate through the game. This will take a long time to implement and only one user wanted it. Given we have some other, more pressing stuff to add, we don't want to implement this.

Conclusions

The usability testing was certainly a valuable learning experience for us. Many of the testers were able to give feedback on the function as well as the interface of our website. The testers were able to discover flaws in our user interface that we never would have noticed ourselves. The usability testing helped us realize that after looking at your website many times it is easy to

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fall into the assumption that everything is fine the way it is, however now we are able to see that anything can be improved if you or someone else are able to look at it from a different perspective. One user in particular had a wealth of knowledge on the user interface subject and gave valuable suggestions which we will be implementing. It was a bonus to have such technically inclined testers because they were able to give specific suggestions that would improve our website. The testing helped us learn that our user interface is visually pleasing, however certain features could be added and certain aspects of it could be revamped to improve the user experience.

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Usability Testing Form

Date of Test: April 07, 2016

Age: 22 Gender: Female ☐ Male ☒

Sudoku Zen Garden Instructions

Please remember this is a test of the software and not of you. What we have here is a list of tasks we want you to do.

1. View the tutorial page. Learn how to play Sudoku.
2. Change the theme options on the page. (Background or music)
3. Change the difficulty of the puzzle.
4. Try to fill in some of the sudoku puzzle
5. Check if your inputs are valid.
6. If you have entered invalid inputs, try changing them so that they will be valid.

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Post Testing Form

Date: April 7, 2016

Please answer a few questions to help improve our website:

Questions:	Easy/ YES	Neutral	Hard/ NO
Have you ever played Sudoku?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find sound?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
How difficult was it to find the tutorial?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the tutorial helpful?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
How was the tutorial worded?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
How difficult was it to change the picture?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was finding the puzzle difficulty easy?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the gameplay intuitive?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you feel about the color scheme?

Seems mismatched. Maybe when I change the background, the colors change, too.

If you were to add something to the website, what would it be?

What did you like most about the website?

The music is nice

What would you change visually?

Background should change the color theme.

What would you change in relation to how the website functions?

Maybe the difficulty should be under the options.

Do you like the music and image to be separate? Do you want them to be paired by default?

They are fine separated.

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1.
Evaluator Form

Do they spend a lot of time looking around the website before getting started with the tasks?

YES

NO

Do they blow through the tutorial?

YES

NO

Did they skim the tutorial?

YES

NO

Did the tutorial frustrate them?

YES

NO

Did they have trouble navigating menus (did it take a long time)?

YES

NO

Did they care about the login screen or achievements tabs at all or were they ignored?

YES

NO

Other notes:

couldn't scroll tutorial with arrow keys,
page should extend down

not 9x9, 3x3

solve broke



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Usability Testing Form

Date of Test: April 07, 2016

Age: 22 Gender: Female ☐ Male ☒

Sudoku Zen Garden Instructions

Please remember this is a test of the software and not of you. What we have here is a list of tasks we want you to do.

1. View the tutorial page. Learn how to play Sudoku.
2. Change the theme options on the page. (Background or music)
3. Change the difficulty of the puzzle.
4. Try to fill in some of the sudoku puzzle
5. Check if your inputs are valid.
6. If you have entered invalid inputs, try changing them so that they will be valid.

2

Post Testing Form

Date: April 7, 2016

Please answer a few questions to help improve our website:

Questions:	Easy/ YES	Neutral	Hard/ NO
Have you ever played Sudoku?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find sound?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find the tutorial?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the tutorial helpful?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How was the tutorial worded?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
How difficult was it to change the picture?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was finding the puzzle difficulty easy?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the gameplay intuitive?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you feel about the color scheme?

Purple Kind of clashes with the pale green/red of the puzzle

If you were to add something to the website, what would it be?

I would change the tutorial - login bar's color to match the background

What did you like most about the website?

The sudoku board is well done visually

What would you change visually?

I would keep it simple, maybe add a timer above/below the puzzle

What would you change in relation to how the website functions?

Could fix the character input + board validation, solving the puzzle with wrong input should erase the board, or solve empty spots

Do you like the music and image to be separate? Do you want them to be paired by default?

pairing them would be better in my opinion, to create a solid theme

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Evaluator Form

Do they spend a lot of time looking around the website before getting started with the tasks?

YES

NO

Do they blow through the tutorial?

YES

NO

Did they skim the tutorial?

YES

NO

Did the tutorial frustrate them?

YES

NO

Did they have trouble navigating menus (did it take a long time)?

YES

NO

Did they care about the login screen or achievements tabs at all or were they ignored?

YES

NO

Other notes:

- ~~Need fix characters~~
- Characters validate, need to fix
 - He did spend a good portion of his time on the puzzle itself



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Usability Testing Form

Date of Test: April 07, 2016

Age: 21 Gender: Female ☐ Male ☒

Sudoku Zen Garden Instructions

Please remember this is a test of the software and not of you. What we have here is a list of tasks we want you to do.

1. View the tutorial page. Learn how to play Sudoku.
2. Change the theme options on the page. (Background or music)
3. Change the difficulty of the puzzle.
4. Try to fill in some of the sudoku puzzle
5. Check if your inputs are valid.
6. If you have entered invalid inputs, try changing them so that they will be valid.

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3

Post Testing Form

Date: April 7, 2016

Please answer a few questions to help improve our website:

Questions:	Easy/ YES	Neutral	Hard/ NO
Have you ever played Sudoku?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find sound?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find the tutorial?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the tutorial helpful?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
How was the tutorial worded?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
How difficult was it to change the picture?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was finding the puzzle difficulty easy?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the gameplay intuitive?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

How do you feel about the color scheme?

It should change with the background
The board needs more contrast

If you were to add something to the website, what would it be?

Accounts where you can save in-progress
games

What did you like most about the website?

Sudoku is fun

What would you change visually?

The board should have more contrast

What would you change in relation to how the website functions?

Make the color scheme change with the background

Do you like the music and image to be separate? Do you want them to be paired by default?

They should be paired

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3.

Evaluator Form

Do they spend a lot of time looking around the website before getting started with the tasks?

YES

☒ NO

Do they blow through the tutorial?

☒ YES

NO

Did they skim the tutorial?

☒ YES

NO

Did the tutorial frustrate them?

YES

☒ NO

Did they have trouble navigating menus (did it take a long time)?

YES

☒ NO

Did they care about the login screen or achievements tabs at all or were they ignored?

YES

☒ NO

Other notes:

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S	U			Z		G	A	R
	D	O		E				
K	U			N		D	E	N



Usability Testing Form

Date of Test: April 07, 2016

Age: 25 Gender: Female ☒ Male ☐

Sudoku Zen Garden Instructions

Please remember this is a test of the software and not of you. What we have here is a list of tasks we want you to do.

1. View the tutorial page. Learn how to play Sudoku.
2. Change the theme options on the page. (Background or music)
3. Change the difficulty of the puzzle.
4. Try to fill in some of the sudoku puzzle
5. Check if your inputs are valid.
6. If you have entered invalid inputs, try changing them so that they will be valid.

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Post Testing Form

Date: April 7, 2016

Please answer a few questions to help improve our website:

Questions:	Easy/ YES	Neutral	Hard/ NO
Have you ever played Sudoku?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find sound?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
How difficult was it to find the tutorial?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Was the tutorial helpful?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How was the tutorial worded?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to change the picture?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Was finding the puzzle difficulty easy?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the gameplay intuitive?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you feel about the color scheme?

Good.

If you were to add something to the website, what would it be?

"Difficulty" can be noted as "Levels"

What did you like most about the website?

Themes & structure of website

What would you change visually?

What would you change in relation to how the website functions?

Do you like the music and image to be separate? Do you want them to be paired by default?

I'd like to be the music & image separated.

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4.

Evaluator Form

Do they spend a lot of time looking around the website before getting started with the tasks?

YES

NO

Do they blow through the tutorial?

YES

NO

Did they skim the tutorial?

YES

NO

Did the tutorial frustrate them?

YES

NO

Did they have trouble navigating menus (did it take a long time)?

YES

NO

Did they care about the login screen or achievements tabs at all or were they ignored?

YES

NO

Other notes:

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Usability Testing Form

Date of Test: April 07, 2016

Age: 23 **Gender:** Female ☐ Male ☒

Sudoku Zen Garden Instructions

Please remember this is a test of the software and not of you. What we have here is a list of tasks we want you to do.

1. View the tutorial page. Learn how to play Sudoku.
2. Change the theme options on the page. (Background or music)
3. Change the difficulty of the puzzle.
4. Try to fill in some of the sudoku puzzle
5. Check if your inputs are valid.
6. If you have entered invalid inputs, try changing them so that they will be valid.



5

Post Testing Form

Date: April 7, 2016

Please answer a few questions to help improve our website:

Questions:	Easy/ YES	Neutral	Hard/ NO
Have you ever played Sudoku?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find sound?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
How difficult was it to find the tutorial?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Was the tutorial helpful?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How was the tutorial worded?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to change the picture?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was finding the puzzle difficulty easy?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the gameplay intuitive?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you feel about the color scheme?

I'm not sure why, I just didn't like the purple.

If you were to add something to the website, what would it be?

I would change the drop down menus to be medals
~~As the first~~

What did you like most about the website?

Simplicity

What would you change visually?

The logo and then the full width nav look funky

What would you change in relation to how the website functions?

~~Not a menu~~ Make the page unscrollable

Do you like the music and image to be separate? Do you want them to be paired by default?

I would pair them or make a 'pair' option. OR just make a 'recommended' theme button so I don't have to deal with it.

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5

Evaluator Form

Do they spend a lot of time looking around the website before getting started with the tasks?

YES

NO

Do they blow through the tutorial?

YES

NO

Did they skim the tutorial?

YES

NO

Did the tutorial frustrate them?

YES

NO

Did they have trouble navigating menus (did it take a long time)?

YES

NO

Did they care about the login screen or achievements tabs at all or were they ignored?

YES

NO

Other notes:

Tested the game. Looked at how errors worked
Did spend a good time looking at website
afterwards



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Usability Testing Form

Date of Test: April 07, 2016

Age: 30 Gender: Female ☒ Male ☒

Sudoku Zen Garden Instructions

Please remember this is a test of the software and not of you. What we have here is a list of tasks we want you to do.

1. View the tutorial page. Learn how to play Sudoku.
2. Change the theme options on the page. (Background or music)
3. Change the difficulty of the puzzle.
4. Try to fill in some of the sudoku puzzle
5. Check if your inputs are valid.
6. If you have entered invalid inputs, try changing them so that they will be valid.

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6

Post Testing Form

Date: April 7, 2016

Please answer a few questions to help improve our website:

Questions:	Easy/ YES	Neutral	Hard/ NO
Have you ever played Sudoku?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
How difficulty was it to find sound?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficulty was it to find the tutorial?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the tutorial helpful?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How was the tutorial worded?	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
How difficult was it to change the picture?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was finding the puzzle difficulty easy?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the gameplay intuitive?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

How do you feel about the color scheme?

*Like backgrounds but menu/button scheme
could be better*

If you were to add something to the website, what would it be?

Simplify UI, get rid of validate board

What did you like most about the website?

What would you change visually?

menus, tutorial

What would you change in relation to how the website functions?

ok

Do you like the music and image to be separate? Do you want them to be paired by default?

*Paired probably better and I wouldn't
layer the diff sound tracks - unnecessary
complication*

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~~Enlarge~~

Enlarge Tutorial Screen - remove horizontal scroll bar
and instead navigate back/forward to next pages



6

Evaluator Form

Do they spend a lot of time looking around the website before getting started with the tasks?

YES

NO

Do they blow through the tutorial?

YES

NO

Did they skim the tutorial?

YES

NO

Did the tutorial frustrate them?

YES

NO

Did they have trouble navigating menus (did it take a long time)?

YES

NO

Did they care about the login screen or achievements tabs at all or were they ignored?

YES

NO

Other notes:

"Tutorial was awkward, try to make it so there is no scrolling."

"Move options dropdown to the left of difficulty"

"validate board is ~~unnecessary~~ not needed"

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7.



Usability Testing Form

Date of Test: 4/7/2016 April 07, 2016

Age: 25 Gender: Female ☐ Male ☒

• Hint Button

Sudoku Zen Garden Instructions

Please remember this is a test of the software and not of you. What we have here is a list of tasks we want you to do.

1. View the tutorial page. Learn how to play Sudoku.
2. Change the theme options on the page. (Background or music)
3. Change the difficulty of the puzzle.
4. Try to fill in some of the sudoku puzzle
5. Check if your inputs are valid.
6. If you have entered invalid inputs, try changing them so that they will be valid.

• Both music
Can be Played Simultaneously
• Change cells via arrow key
• The letters are valid input
• Solve button
Row and column

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7.

Post Testing Form

Please answer a few questions to help improve our website:

Questions:	Easy/ YES	Neutral	Hard/ NO
Have you ever played Sudoku?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find sound?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How difficult was it to find the tutorial?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the tutorial helpful?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
How was the tutorial worded?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
How difficult was it to change the picture?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was finding the puzzle difficulty easy?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was the gameplay intuitive?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

How do you feel about the color scheme?

• Would Prefer Higher contrast Play area

If you were to add something to the website, what would it be?

Hint Button

What did you like most about the website?

straight forward

What would you change visually?

smooth corners

What would you change in relation to how the website functions?

• Solve Clears & Solves

• Reset Prompt

Do you like the music and image to be separate? Do you want them to be paired by default?

separate is best

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Michael Bejanian

7

Evaluator Form

Do they spend a lot of time looking around the website before getting started with the tasks?

YES

NO

Do they blow through the tutorial?

YES

☒ NO

Did they skim the tutorial?

☒ YES

NO

Did the tutorial frustrate them?

YES

?

NO

Did they have trouble navigating menus (did it take a long time)?

YES

☒ NO

Did they care about the login screen or achievements tabs at all or were they ignored?

YES

☒ NO

Other notes:

Idea: "Use arrow keys to move through puzzle"

"does not validate letters"

