

Poster generator for kindergarten children

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1. INTRODUCTION

1.1 Overview

In modern society, with the rapid development of internet, there are many softwares and free online generators which can generate posters. As the information is increasing fast, people need to design posters by electric tools instead of handwritten. They link users' personal information and draw appropriate images for them. The posters could be downloaded and also saved for later editing. Products could be used for decorating and advertising. However, they are not up-to-date in time. Some are only using the existed pictures as templates. Also, user experience needs to be improved. Functions can be more plentiful and creative.

Also, user experience needs to be improved. Functions can be more plentiful and creative. Posters could be used in many areas. The most important function of posters is attractive. People could extract information of the event easily. For various events, posters should be in different styles. The color, shape and also font family should be fantastic. Modern poster generators are a little bit complicated. To be familiar with the operations needs time. Thus, children who are interested at drawing do not have a simple, easy to use, and lovely poster tools.

1.2 Project Objectives

This project aims to create a website which gives a quick way to generate a poster for kindergarten. The posters should be distinct and beautiful. People who scan this poster just for seconds could understand its meaning and remember some useful details. The user can simply choose color and generate a poster with art and abstract style. Then, the user could enter some basic information such as the title, several texts, details and so on. These characters could be added into the poster. Therefore, these colorful posters can be used in kindergarten to advertise activities.

In addition, some children desire to use their own pictures. Maybe they draw pictures by watercolor and pencils and take a photo. This website can provide some filters to modify the picture to be distinct. All of the functions need to be simple and easy to operate since children do not adapt to complicated process.

- This poster generator should be simple to understand.
- This poster generator should have many choices and styles.
- This poster generator should improve the efficiency and loveliness.

2. BACKGROUND

In recent years, there are some modern websites which generate posters for users. They use basic knowledge of CSS and HTML5 to build the interface. And core functions are completed by Javascript and PHP.

First, some generators aim to get special styles, such as old western style, colorful style and also cool style. As Figure 1 shows, user can upload a picture in the middle of the poster. Then it changes to be an old one.



Figure 1. Old western style

Second, as Figure 2 shows, some generators can add words to the original picture in some special templates. These templates are just the background, such as book, blackboard.

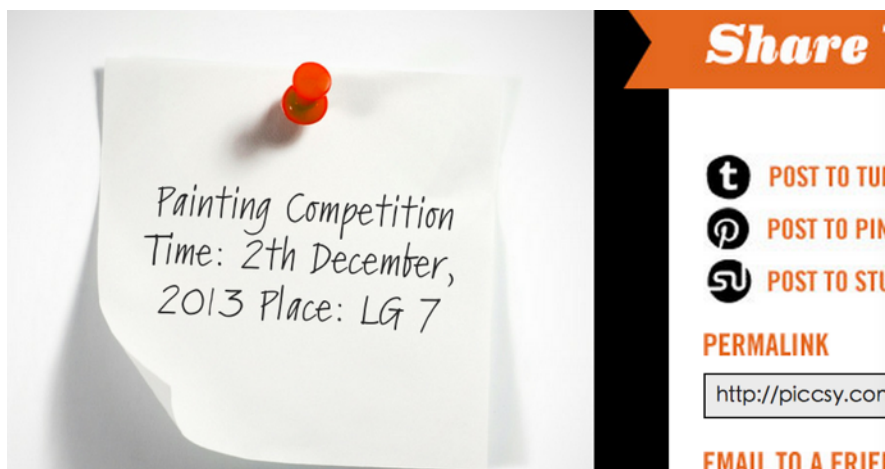


Figure 2. Simple example

There are also some other posters. They are much more complicated. Inside these websites, there are many advertisements and a huge amount of information to introduce how to use it.

3. WEBSITE STRUCTURE

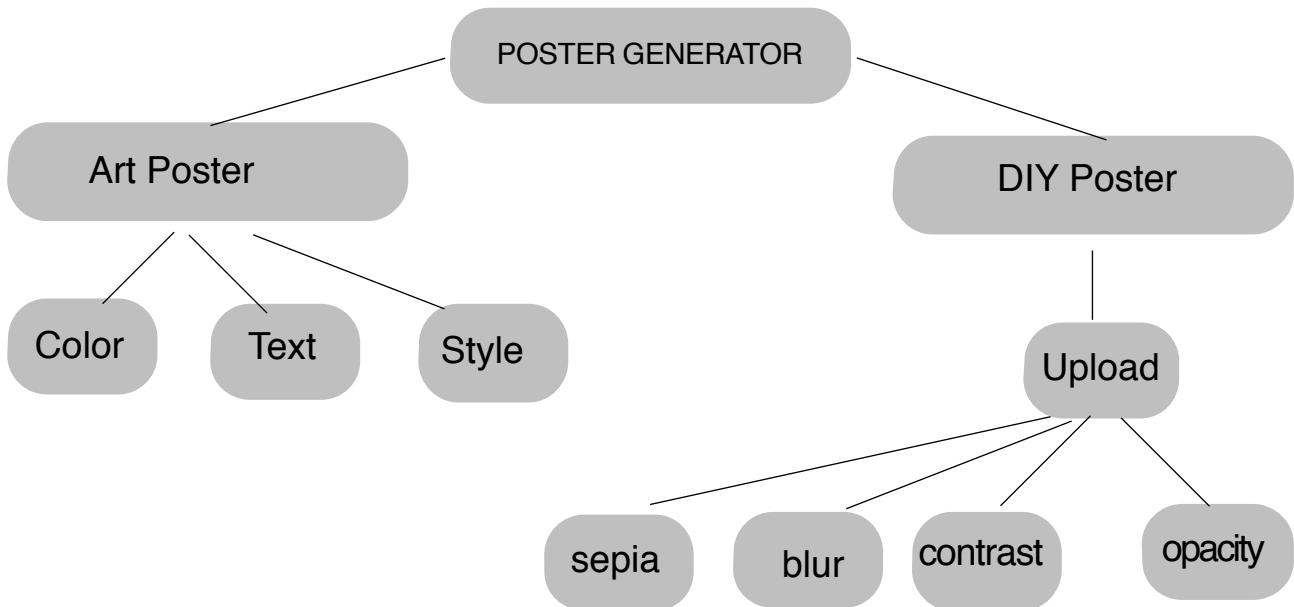


Figure 3. Website Structure

As Figure 3 shows, the generator is separated to two parts. First part can generate simple colors randomly. The user can add own text and choose style, such as the orientation and the size of characters. Second part is DIY Poster. User can upload own picture and change the filter of the original one. These two parts are connected.

3.1 Art Poster

Children in the kindergarten always play with chinks and draw some simple colors. Thus, in this part, we introduce an easy function to combine several colors. As Figure 4 shows below, this project completes several functions.

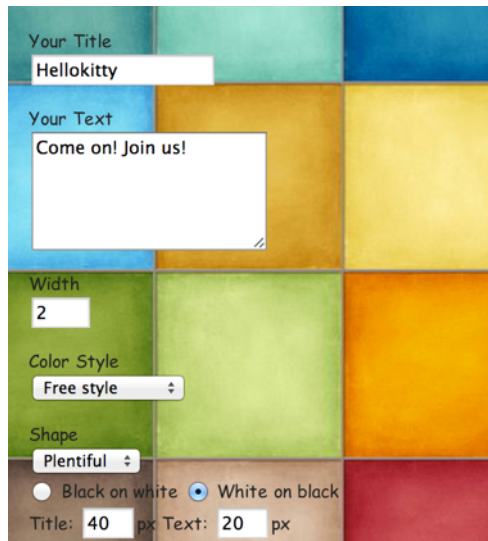


Figure 4. Structure

The whole canvas is separated in a large amount of splits. And then many colors are filling this canvas. The art poster also have text parts. Title and detail information are inputed by the users themselves.

For colors, the generator has many styles, such as free style, cool style, and they can be put randomly or in different lines. For text, it can change size and background color.

3.2 DIY Poster

Users can download the art poster. However, some children may don't like only colors. They have drawn a lot of pictures and also want them to be used in electric ways. Thus, DIY Poster can help them.

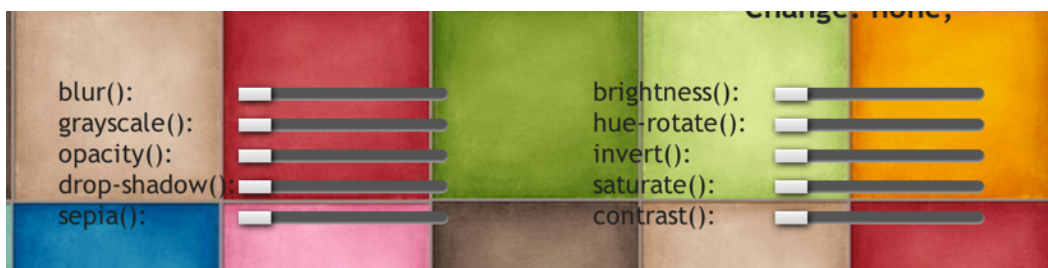


Figure 5. Filter style

As Figure 5 shows, DIY part has many filters. They can change brightness, opacity, grayscale and so on. This generator completes 10 types of filters.

4. TECHNICAL DETAILS

The poster generator has used the knowledge of HTML 5, CSS, PHP and Javascript. For testing some parts, jQuery and AJAX has been practiced.

4.1 Interface

Initially, create a canvas for generating pictures. Canvas is hidden and just for show posters. The canvas has a background part and a colorful part.

```
<canvas id="canvas" width="0" height="0">
```

To fix every layer of the website, like pictures, texts and buttons, every elements' positions are absolute to the whole webpage. Class is built for every element.

```
.title
```

```
{
```

```
font-size: 30px;
```

```
margin: 0;
```

```
font-family: 'Chalkduster', arial, sans-serif;
```

```
font-weight: 300;
```

```
padding-left: 450px;
```

```
padding-top: 100px;
```

```
}
```

4.2 Generate Color

First, color is defined. Free style uses every random color while cool style uses only black and white. Also, some are warm colors while others are cold colors. The coding below is based on javascript.

```
function getColor(color, random) {
```

```
var schemes = {
```

```
  "warmsplit": ["#ff0000", "#ffff00", "#ff6600", "#00ffff"],
```

```
  "coolsplit": ["#0000ff", "#0099ff", "#00ccff", "#ff3300"],
```

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```
"green": ["#003300", "#33cc00", "#99ff99", "#00ff00"],  
"mono": ["#000000", "#ffffff", "#d0d0d0", "#c0c0c0", "#303030", "#808080"],  
"redgreen": ["#ff0000", "#ffffff", "#006600", "#33cc33"],  
"blueorange": ["#00ffff", "#33ffff", "#99ffff", "#ff9900", "#ffff00"],  
};  
if (color == "random" || !(color in schemes))  
    return "#" + Math.floor(random() * 0xffffffff).toString(16);  
return schemes[color][Math.floor(random() * schemes[color].length)];  
}
```

Then, user chooses how to depart the canvas. And colors fill in every single part. Each time, it will generate a new kind. Since color is chosen randomly, sometimes, it will cover larger area. And color should only fill in the canvas area. The coding below shows how to control area.

```
function wrapText(context, text, x, y, maxWidth, lineHeight) {  
    var words = text.split(" ");  
    var line = "";  
    for (var n = 0; n < words.length; n++) {  
        var testLine = line + words[n] + " ";  
        var metrics = context.measureText(testLine);  
        var testWidth = metrics.width;  
        if (testWidth > maxWidth) {  
            context.fillText(line, x, y);  
            line = words[n] + " ";  
            y += lineHeight;  
        }  
    }  
}
```



```
else {  
    line = testLine; }  
}  
context.fillText(line, x, y);  
}
```



Figure 6. Free Style



Figure 7. Cool Style

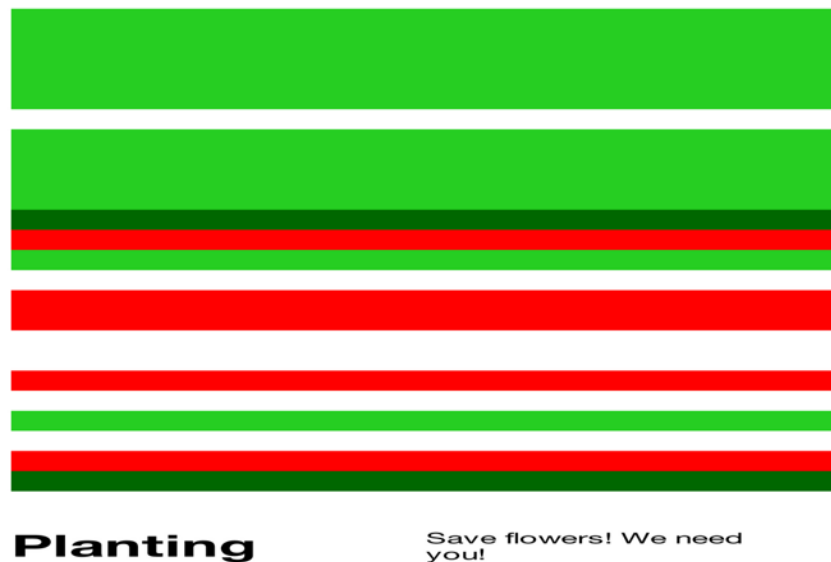


Figure 8. Green Style

Figure 6, Figure 7 and Figure 8 are different styles of the poster. And different color can have different functions for activities. Figure 6 is a plentiful one which can present dancing party while Figure 7 is much more cool. Figure 8 is related to environment to some extent.

4.3 Upload File

This part uses PHP to upload file.

```
<?php
    move_uploaded_file(
        $_FILES['userfile']['tmp_name'],
        $_FILES['userfile']['name']);
    echo $_FILES['userfile']['name'], "is uploaded successfully
";
    rename($_FILES['userfile']['name'], "file.jpg");
    $url = "filter.html";
    if (isset($url))
```

```
{  
Header("Location: $url");  
}  
?>
```

Then, pictures are uploaded to the server. Server define the name of this picture as “file.jpg”. Then the other part choose this special picture from the folder into its box.

4.4 Filter

The generator completes ten filters. They are blur, grayscale, opacity, drop-shadow, sepia, brightness, hue-rotate, invert, saturate and contrast.

First, set a span in the bottom of the web page.

```
<span><span>blur</span><input type="range" onchange="set('blur', this.value +  
'px');" value="0" step="1" min="0" max="10"></span>
```

Then, use CSS filter to process the original picture. Figure 9 is the original one. And Figure 10 is changed by user.



Figure 9. Original Picture

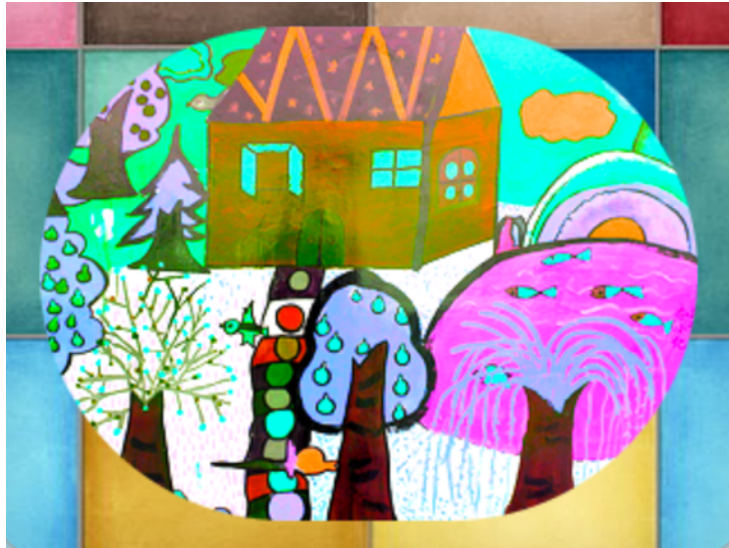


Figure 10. After changing brightness and contrastness

```
.blur {  
  -webkit-animation: blur-anim 0.5s linear;  
  -webkit-animation-direction: alternate;  
  -webkit-animation-iteration-count: infinite;  
}  
  
.sepia {  
  -webkit-animation: sepia-anim 2s ease-in-out;  
  -webkit-animation-direction: alternate;  
  -webkit-animation-iteration-count: infinite;  
}
```

Like these two types.

The website also has a reset button to cancel the processing.

```
function reset() {  
  FILTER_VALS = {};  
  render();  
}
```

```
document.querySelector('output').textContent = '-webkit-filter: none;';

el.className = "";

var ranges = document.querySelectorAll('input[type="range"]');

for (var i = 0, r; r = ranges[i]; i++) {

    r.value = r.min;

}

}
```

5. FURTHER DEVELOPMENT

First, this project can connect with a huge database. If there were many kinds of pictures to choose, children may find more fun. Some normal activities can be topic of the database. Every picture can have a URL which connects the next processing page.

Second, there can also be a login page. User may save the poster and change it again next time. In addition, every child can have its own webpage to show its posters.

Third, now, this poster processing can add many functions. Changing font-family of the characters and the shape of poster can be done in the future.

6. CONCLUSION

The idea of this project can be further fulfilled. Nowadays, children education towards electric tools is not very perfect. Some products which are especially for children are beneficial.

This independent project really improves my ability and self-discipline. I am really grateful for Prof. David Rossiter who teaches me a lot. Besides some technical direction, I also learn the passion and being serious from him. I think simple idea will change a lot. As a beginner of HTML5, CSS, PHP and Javascript, I have learnt a lot. However, I spent much time to test. If I had more time, some functions could be practiced.

7. REFERENCES

[1] HTML/CSS Introduction: <http://www.w3school.com.cn/h.asp>

[2] Javascript Introduction: <http://www.w3school.com.cn/b.asp>

[3] PHP Introduction: <http://www.w3school.com.cn/php/>

[4] Webkit materials: <http://www.webkit.org/>

8. APPENDIX

1st Project Meeting

Date: Monday, 2 Sep. 2013

Time: 2:30 pm

Place: Room 3512

Attending: Prof. Rossiter, XUE Jingran

Absent: None

Recorder: XUE Jingran

Approval of minutes

The first formal group meeting doesn't have minutes to approve.

Report on Progress

XUE Jingran shows the simple webpage and explain some ideas about the project.

Discussion Items and Things to Do

Learn how to use SVG and Javascript

Download some slides from professor's materials

Meeting Adjournment

The meeting was adjourned at 1:00 pm.

2nd Project Meeting

Date: Thursday, 19 Sep. 2013

Time: 12:00 am

Place: Room 3512

Attending: Prof. Rossiter, XUE Jingran

Absent: None

Recorder: XUE Jingran

Approval of minutes

Because XUE had some personal things before, this minutes was amended.

Report on Progress

Show the structure of the project.

Complete the design of interface.

Discussion Items and Things to Do

Learn PHP about how to upload file and process the picture.

Meeting Adjournment

The meeting was adjourned at 1:00 pm.

3rd Project Meeting

Date: Thursday 4th Oct. 2013

Time: 1:00 pm

Place: Room 3512

Attending: Prof. Rossiter, XUE Jingran

Absent: None

Recorder: XUE Jingran

Approval of minutes

The minutes of the last meeting were approved without amendment.

Report on Progress

Generate color in the existed canvas.

Several single part of the progress.

Discussion Items and Things to Do

Increase the speed of the project and finish some functions as soon as possible.

Finish the core function.

Meeting Adjournment

The meeting was adjourned at 2:00 pm.

4th Project Meeting

Date: Thursday 17th Nov. 2013

Time: 8:45 am

Place: LG1 food area

Attending: Prof. Rossiter, XUE Jingran

Absent: None

Recorder: XUE Jingran

Approval of minutes

The minutes of the last meeting were approved without amendment.

Report on Progress

The two parts of the project.

Show the original scene of Art poster and DIY poster.

Discussion Items and Things to Do

Combine two systems. Add more functions.

Improve the design of the interface.

Meeting Adjournment

The meeting was adjourned at 9:45 am.

5th Project Meeting

Date: Wednesday 4th Dec. 2013

Time: 9:00 am

Place: LG1 food area

Attending: Prof. Rossiter, XUE Jingran

Absent: None

Recorder: XUE Jingran

Approval of minutes

The minutes of the last meeting were approved without amendment.

Report on Progress

Show the final version of the project.

Show the report.

Discussion Items and Things to Do

Finish and modify.

Meeting Adjournment

The meeting was adjourned at 10:00 am.