Dear Candidate,

This assignment is part of the technical interview to assess your technical knowledge by observing the code quality, completion of the project on time.

Please reach back in case you have any doubts on the question.

Dynamic Ad Rendering

Advertisers are constantly looking at ways of capturing the attention of the user. In order to do this, ads can be made dynamically from some basic elements. With the set of instructions defined below, you are tasked with creating dynamic ads based on a JSON file input.

Instructions

All elements of an ad are bound together with layers. There are two types of layers for this assignment:

1. Text Layer
2. Frame Layer

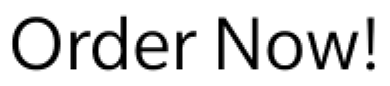
Every layer is applied on top of another with a fixed priority. In this case, the Text Layer is **always applied on top** of the frame layer. A layer typically has the following fields:

1. Type: can be "text" or "frame"
2. Placement: Where is this layer exactly placed to create an ad on the plane
3. Properties: Valid operations on top of this particular layer

For example, consider the following basic layer:

```
{
   "layers":[
      {
         "type":"text",
            "placement": [
                {
                    "position":{
                        "x":0,
                        "y":0,
                        "width":200,
                        "height":200
                    }
                }]
        }
    ]
}
```

If the input text for this layer is “Order Now”, the output would look something like:

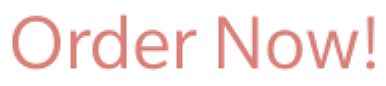

Order Now!

In the placement property, the x,y fields denote where the rendering has to start. The height and width define the size of this layer.

Now if we introduce some property on this layer like color, the output should change accordingly. Consider the following input:

```
{
    "layers":[
        {
            "type":"text",
            "placement": [
                {
                    "position":{
                        "x":0,
                        "y":0,
                        "width":200,
                        "height":200
                    }
                }],
      "operations": [
        {
          "name":"color",
          "argument":"#D97F78"
        }
      ]
    }
  ]
}
```

The output for this will change like:



A frame layer defines the background on which a Text Layer is rendered. If there is no specification of the frame layer, the output is considered to be on a white background.

Consider the following JSON to understand this layer:

```
{
  "layers":[
    {
      "type":"frame",
      "path":"http://lab.greedygame.com/arpit-dev/unity-assignment/assets/wcc2_f2.png",
      "placement": [
        {
          "position":{
            "x":0,
            "y":0,
            "width":650,
            "height":230
          }
        }]
    }
  ]
}
```

The output for this would be something like this below:

On the Frame layer, the operations like color can be applied as shown below:

```
{
    "layers":[
        {
            "type":"frame",
            "path":"http://lab.greedygame.com/arpit-dev/unity-assignment/assets/wcc2_f2.png",
            "placement": [
                {
                    "position":{
                        "x":0,
                        "y":0,
                        "width":650,
                        "height":230
                    }
                }],
            "operations": [
                {
                    "name":"color",
                    "argument":"#77FF0000"
                }
            ]
        }
    ]
}
```

The output for the above JSON would look like:

Your task is to render a Text ad (the text for the ad will be an input from the user) with a JSON template consisting of the layers and properties mentioned above.

To simplify the JSON input process, the JSONs mentioned in the problem statement are hosted on the following URLs:

1. Template with Text only
2. Template with Text Color
3. Template with Frame only
4. Template with Frame Color

Your solution should be able to handle multiple layer renderings (not more than one layer of each type i.e only one text layer, one frame layer). Take care of conditions which would make the template unrenderable (what happens when the image path in the frame layer is not a valid image?). In such conditions, you have to declare the template as “invalid”.

Submission
Once you are done with your project, please check in your code in an open CVS like GitHub and send us the link of the repository back for evaluation.