RED GAP

Website

Model View Controller

(MVC)

Guildford, Surrey

Purpose 2

Scope 3

Model View Controller (MVC)

# Introduction

## Purpose

The purpose of this document is to define the use of MVC (Model, View, Controller) within the Ruby on Rails Web Application.

MVC is a primary use within Ruby on Rails Web Applications and thus will be used with this very website. Considering MVC Structure is key in the early part of the project thus to understand the logic and flow of the application, the models, controllers and views that will be used and how they will work.

## Scope

This Scope of this document is only concerned with MVC.

## Definitions, acronyms and abbreviations

MVC:

Model, View & Controller. A Software Design Pattern.

Ruby on Rails:

A Web Applications Development Language commonly used in creating and making websites.

## Overview

This document first presents a description of the software to provide context and to aid the understanding of the MVC. The MVC is then fully specified and this includes the Models, Views and Controller implementations within the Web Application.

This document follows the IEEE ‘Recommended Practice for Software Requirements Specification” using the template organization for features [2].

# Product

## Product perspective

This SRS defines the requirements for a Web Application, which can be used to make orders for products sold by Red Gap. Users will be able to use the web application registered or not, although they must be registered to make an order. Other functionality of the website will enable users to manage orders/quotations and also configure their account settings.

## Description

This description will aim to provide further information for the Web Site including the structure, features and functions available. From generating such description, we are able to identify Models, Controllers and Views through Noun Phrase Analysis.

**The identification of Models, Views and Controllers will be as followed:**

**Model**, *View,* Controller.

Should A Model, Controller and View all exist then they will be ***Order.***

Red Gap, a business with a focus on delivering Chinese Culture to the UK wants an E-Commerce Site to further promote the culture and to make more accessible. By creating an E-Commerce site, we can build an exciting experience for the **user**. A **user** can find out more information regarding Red Gap, what they do, who they are and how it’s done. Additionally users will be able to see many examples including *Red Gaps portfolio*. *Customer Reviews* will be available. *Guides* will also be available and these will reflect the available Product Packages such as “Chinese Paper Cutting” which is Red Gaps primary package, which includes a selection of paper, size, frame being our **Product Categories** and **Products** being Standard Paper or premium Paper of Product Category Paper, A3 – A5 Products of Type Size. Finally for this **Product Package**, the User can upload an image.

With regards to ***Orders*** and ***Quotations***, for Users to be able to request a ***quotation***, that is to make an ***Order*** they must be registered with a minimum of Email Address and Password.

*Registration*, A **User** must be registered in order to make a ***quotation/quote***. *Registration* requires a minimum of Email and Password. On Registering, a user will receive an Activation Email to their Registered Email Address for which they will be required to Activate before they can use the service.

Thus on making an ***Order*** they must be logged in. Making an ***Order*** is simple, the user as above selects a **Product Package** i.e. “Paper Cutting”, for this product package “Paper Cutting” a User would then go on to select the style or type of paper cutting i.e. Chinese, Japanese etc. This type could then be submitted as a product i.e. “Chinese Paper Cutting” and with product category “Product Package”.

Considering Paper Cutting more, we know that there can be many varieties of Paper Cutting and in particular several styles such as Chinese Paper Cutting, Japanese Paper Cutting and these can be considered as **Packages** i.e. being associated to a **Product Package** where a **Product Package** belongs to a **Package**.

And then they select the relevant **products**, which are associated to “Chinese Paper Cutting” such as Paper Type, Paper Size and Frame, and additionally an image. For each selected product i.e. paper, size, frame these are known as Product Orders in that each product order is associated to an Order i.e. A Product Order belongs to an Order. At the end of this selection, they will then submit the ***Order***.

There is a primary package that being paper cutting and will be the initial product, and this paper cutting can be of any many styles i.e. “Chinese Paper Cutting”, “Japanese Paper Cutting” etc.

Submitting the ***Order*** creates a ***quotation***, this ***quotation*** is then sent to Red Gap and a ***quotation*** will follow up i.e. a price for the work carried out, we will consider the response i.e. price of quotation as a ***Quote Reply***. Finally the user will then make a ***Quote Confirmation*** which will consist of basically Yes or No.

On Submitting the ***Order***, the **User** will receive an Email Confirmation of the ***Quote*** they’ve made and a reference to this. They should be able to withdraw this request from the email or their *user orders panel*. Red Gap will receive a ***Quote*** Email summarizing that a ***Quote*** has been made and will be able to respond to the User should any adjustments be required made or should the ***Quote*** be cancelled.

***Quote Confirmation***, should the **user** dismiss the quote and select No then no business will be made and the ***order*** and records made will be discarded. If the **User** agrees with the ***Quote*** price, and selects yes as their ***Quote Confirmation*** then their ***Order*** will be carried forwards.

On submitting the ***Quote Confirmation***, the **User** will receive an email confirmation of their Quote Confirmation either being yes or no and then suggesting further action.

It is important to consider *Users management* of Quotes/Orders and additionally the difference between a ***Quote*** and an ***Order***.

An ***Order*** is considered a ***Quote*** if no **transaction** exists yet i.e. no payment, no quote reply exists, or no ***quote confirmation*** exists or if it does then with a NULL to accept i.e. user has not responded.

An ***Order*** is considered an ***Order*** if a **transaction** exists, and a ***quote confirmation*** has been accepted.

A **User** should be able to manage ***Quotes*** and ***Orders*** and perform general account management not only from Emails but also from a Panel. Such panel called “My Red Gap”. Under *“My Red Gap”,* a User could see ***Orders, Quotes and Account Settings***.

***Orders***, a user could see all ***Orders*** and should be able to cancel the order (if no dispatched), request a refund, report a problem/contact support, and leave feedback (if order completed). Each order should be displayed firstly with the Order reference, order summary, price and further options.

***Quotes***, a user can see all ***Quotes*** and should be able to manage quotes in terms of accepting or not accepting if not already done so, they should also be able to contact Red Gap here regarding a Quote reference. Each quote will be clearly displayed with the Quote Reference, Order Summary and if a Quote Reply is received and if so with price. Further Options exist at the end.

Account Settings, a user can see their account settings and make adjustments under this. Adjustments include changing email addresses etc.

‘An Online Platform, A *Gallery* for *Artists’*

Following the above, an online platform for *artist’s* *galleries* will also exist where we provide an interface, a platform for where ***artists*** can become known throughout the world for their paper cutting.

*Artist’s* can be ‘*discovered’* by many factors/attributes, an artist can have a name, be associated with a primary package such ‘Chinese Paper Cutting’ but also other packages, a story, a profile image, duration of service. Also on the *Artist page*, their ***portfolio*** which is customizable and thus they can add/remove and modify it. **Ranking** is also available, and is defined through *‘Customer Feedback’* i.e. a customer following an order can leave ***feedback*** for their order i.e. rating (5 stars), title, description.

As for the registering, artists to register for the platform, they would contact us to register etc and then they would be given a unique link to an *online portal* where they can update, register their details and thus add to their *online artist page*.

For Artists, we need a mechanism in place where Artists can state if there available for work and if they are Orders can go through to them i.e. “Available”, “Not Available”. We don’t want to overwhelm the supplier and give false hopes to customers.

An Artist is a Type of User i.e. a Group being Artist and for a general user a Group being General User but those who Register through the site can only register as General Users and General Users can only make Orders and manage their Red Gap. An Artist can sell through the site, and thus it being a new unique ‘Online Platform for Artists’. Regarding the registration of an Artist, this can be requested through the registration form i.e. via a link. Being that they would have requested a registration, this will be recognized by Red Gap and thus the new Artist must be verified and validated by management and/or control.

# MVC

## Summary

### Models

**The web application will consist of models:** Address, Admin User, Artist, Feedback, Group, Order, Package, Product, Product Category, Product Order, Product Package, Quote, Quote Confirmation, Quote Reply, Restrictions, User, User Address, User Feedback, User Group, User Quote, User Restriction.

Models defined here are used within the Ruby on Rails Application and should be consistent across other platforms i.e. Mobile Applications including Android.

### Views

**The web application will consist of views:** Home page, Products, Portfolio, Customer Feedback, My Red Gap, Order, Quote, Quote Reply, Quote Confirmation, User.

Views defined here are used within the Ruby on Rails Application and should be consistent across other platforms i.e. Mobile Applications including Android.

### Controllers

**The web application will consist of controllers:** Site, Users, Orders, Quotes.

## Models

1. **Address**
   * An Address has an Id, Number, Street Address, Street Address 2, City, Post Code, Country.
     + 161, Southway, NULL, Guildford, GU2 8DJ, UK.
   * An Address has many User Addresses and thus many Users through User Addresses.
   * **CRUD:**
     + **Create:** User Order (when address, not already existing, or adding another).
     + **Read:** User Settings (Modify, Remove Address, set default/primary address), Quote/Order Dispatch.
     + **Update:** User Settings (Modify, Remove Address, set default/primary address), Quote/Order (before dispatch).
     + **Delete:** User Settings (Remove Address, if no existing Quotes/Orders exist for that Address), User Deregistration (i.e. removal of User).
2. **Admin User**
   * An Admin has an Id, Email, Encrypted Password, Reset Password Token, Reset Password Sent At, Remember Created At, Sign In Count, Current Sign In At, Last Sign In At, Current Sign In IP, Last Sign In IP.
     + [Admin@redgapculture.com](mailto:Admin@redgapculture.com), … etc.
   * **CRUD:**
     + **Create:** N/A.
     + **Read:** N/A.
     + **Update:** N/A.
     + **Delete:** N/A.
3. **Artist**
   * An Artist has a User, Name, Description.
     + 1, “Beauty Arts”, “Beauty Arts brings you a deep dimension, a new visual perspective to Paper Cutting.
   * An Artist has many Artist Images and thus many Files through Artist Images, many Artist Portfolios and thus many Portfolios through Artist Portfolios, many Portfolio Products.
   * **CRUD:**
     + **Create:** Request of Registration of Artist through registration form for new Artist, firstly with new User.
     + **Read:** Artist: Index, Show, Portfolio.
     + **Update:** User Panel.
     + **Delete:** N/A.
4. **Feedback**
   * A Feedback has a User, Transaction, Title, Description.
     + 188, 497, “Amazing”, “Better than expected”
   * A Group has many User Groups and thus many Users through User Groups. A Group is created by admin. A Group can define one or many things as a collection.
   * **CRUD:**
     + **Create:** N/A.
     + **Read:** User login / Session.
     + **Update:** N/A.
     + **Delete:** Destroys association between User Groups; User and Group.
5. **Group**
   * A group has a Name, Description.
     + General, A General User uses the site with full functionality and access to all features with the ability to make quotes and manage orders.
   * A Group has many User Groups and thus many Users through User Groups. A Group is created by admin. A Group can define one or many things as a collection.
   * **CRUD:**
     + **Create:** N/A.
     + **Read:** User login / Session.
     + **Update:** N/A.
     + **Delete:** Destroys association between User Groups; User and Group.
6. **Order**
   * An Order has an Id, Product Package.
     + 1, 1.
   * A Product Package belongs to an Order and an Order has many Quotes, Transactions and Product Orders. An Order is created when a User makes a Quote, and an Order is used as a reference i.e. an Order Number but also associates a Quote, Products and Transaction. An Order has many Product Orders i.e. in that many products can be selected for an order such as premium paper, a4.
   * **CRUD:**
     + **Create:** User makes Order/Quote.
     + **Read:** Quotes/Orders.
     + **Update:** N/A (Order should not be updated).
     + **Delete:** N/A BUT Archive after a period of time.
7. **Package**
   * A Package has an Id, Name, Description, Product Package.
     + 1, “Chinese Paper Cutting”, “Paper Cutting with Chinese Style”, 1.
   * A Product Package belongs to a Package.
   * **CRUD:**
     + **Create:** Admin.
     + **Read:** N/A.
     + **Update:** N/A.
     + **Delete:** N/A.
8. **Product**
   * A Product has an Id, Name, Description, and Product Category.
     + Premium Paper, Quality of Premium Paper, Paper.
   * A Product Category belongs to a Product and is a type of Product e.g. Paper, Size, Frame etc. This enables for dynamically adding, manipulating and removing products but also Product Categories are use to Filter Products by Product Package e.g. for “Chinese Paper Cutting”, we would filter Products by Product Categories: Paper, Size, Frame.
   * **CRUD:**
     + **Create:** Admin, Product Category belongs to Product.
     + **Read:** Order, Products are selectable according to the Product Package i.e. “Chinese Paper Cutting”, Products are also read from Product Orders from Quotes/Orders.
     + **Update:** N/A.
     + **Delete:** N/A unless no longer associated to a Product Order.
9. **Product Category**
   * A Product Category has an Id, Category.
     + Paper.
   * A Product Category has many Products and is a type of Product e.g. Paper, Size, Frame etc. This is a flexible and dynamic approach as more Product Categories can be added.
   * **CRUD:**
     + **Create:** By Admin, associating products to category i.e. “Paper”.
     + **Read:** Quotes/Orders.
     + **Update:** N/A.
     + **Delete:** N/A unless Product Category does not belong Product.
10. **Product Order**
    * A Product Order has an Id, Order, Product, Quantity, Details.
      + 1, 1, 1, NULL.
    * An Order belongs to a Product Order and a Product belongs to a Product Orders thus an Order has many Product Orders.
    * **CRUD:**
      + **Create:** User Order.
      + **Read:** Orders/Quotes.
      + **Update:** By Admin only if User requests change but this must be before Quote Confirmation or after but Quote Confirmation will be updated.
      + **Delete:** By Admin only if User requests removal of product but this must be before Quote Confirmation or after but Quote Confirmation will be updated.
11. **Product Package**
    * A Product Package has an Id, Name, Description.
      + “Chinese Paper Cutting”, “Paper Cutting from Chinese Culture, a Selection of Papers, Sizes, Frames et
    * A Product Package has many Products and Orders. A Product Package belongs to an Order. A Product Package associates an Order to one of Red Gap’s Packages including “Chinese Paper Cutting”. A User selects a Product Package to start an Order/Quote e.g. an Order/Quote View for “Chinese Paper Cutting” where the relevant fields and information is available.
    * **CRUD:**
      + **Create:** By Admin, Product Package being “Chinese Paper Cutting”.
      + **Read:** Orders/Quotes.
      + **Update:** By Admin only.
      + **Delete:** N/A unless no Order is associated with Product Package.
12. **Quote**
    * A Quote has an Id, Order.
      + 1.
    * An Order belongs to a Quote. A Quote is created when a User Makes an Order. Quotes are used in this application because the Products and the pricing per Product can differ dramatically dependent on the requirements from the Customer although this should be applicable to every Order i.e. an Order independent of customization.
    * **CRUD:**
      + **Create:** User Order.
      + **Read:** Orders/Quotes.
      + **Update:** By Admin.
      + **Delete:** If transaction created for Order, Quote is no longer needed.
13. **Quote Confirmation**
    * A Quote Confirmation has an Id, Quote, Accepted.
      + 1, 1.
    * A Quote belongs to a Quote Confirmation. A Quote Confirmation is created only when a Quote has been created and a Quote Reply has been. A Quote Reply indicates the price of an Order and thus a Quote Confirmation is then used to mark whether the User accepts this quote or not and this is clearly recorded in the Accepted field with a 1, 0 or – 1 where 1 is accepted, 0 maybe and -1 not accepted.
    * **CRUD:**
      + **Create:** Following User Response to Quote Reply i.e. Acceptance, Maybe, Not Accepted.
      + **Read:** Orders.
      + **Update:** By Admin only.
      + **Delete:** If transaction created for Order, Quote is no longer needed.
14. **Quote Reply**
    * A Quote Reply has an Id, Quote, Price, Description.
      + 1, 29.99, “Due to the minor detail of the image uploaded, thus less work required, we are able to offer you a lower price.”
    * A Quote belongs to a Quote Reply. A Quote Reply is created only when a Quote has been created and then a response has been made, a response being a reply from the supplier/manager. A Quote Reply would be indicated to the User, and thus a notification would be sent to them via email. A notification would also exist in their “My Red Gap” where under Quotes they would see a reply exists and thus would be able to respond with a Quote Confirmation.
    * **CRUD:**
      + **Create:** Following Quote and User Quote, a Quote Reply will be the response and thus will be generated and submitted by Management/Supplier at Red Gap.
      + **Read:** Quotes.
      + **Update:** By Admin only.
      + **Delete:** If transaction created for Order, Quote Reply is no longer needed.
15. **Restrictions**
    * A Restriction has an Id, Name, Description.
      + “User Access Revoked”, “User Access has been revoked and will not be able to access until this is removed”.
    * A Restriction has many User Restrictions and thus many Users through User Restrictions. A Restriction can be the indication of a restriction implied against something or someone. A Restriction type would be a sensible addition as there can be many restrictions existing and a restriction can be applied to a User but also to a Product etc.
    * **CRUD:**
      + **Create:** Restrictions.
      + **Read:** All.
      + **Update:** By Admin only.
      + **Delete:** If no user restriction associated.
16. **User**
    * A User has an Id, Email, Encrypted Password, Reset Password Token, Reset Password Sent At, Remember Created At, Sign In Count, Current Sign In At, Last Sign In At, Current Sign In IP, Last Sign In IP, Confirmation Token, Confirmed At, Confirmation Sent At, Username, Phone Number, First Name, Last Name, Date Of Birth.
      + “Michael Stokes,
    * A User has many User Addresses and thus many Addresses through User Addresses, has many User Groups and thus many Groups through User Groups, has many User Quotes and thus many Quotes through User Quotes, has many User Restrictions and thus many Restrictions through User Restrictions, has many User Transactions and thus many Transactions through User Transactions.
    * **CRUD:**
      + **Create:** User Registration.
      + **Read:** User Settings.
      + **Update:** By Admin and User Settings.
      + **Delete:** if User is not associated to any Quotes, Transactions, User Groups, User Quotes, User Transactions, User Restrictions etc.
17. **User Address**
    * A User Address has a User, Address.
      + 1, 1.
    * A User and Address belong to User Address. A User Address is used to associate many Users to many Addresses. A User Address is created if not already existing when making a Quote/Order. It is that a User may have more than one address but also may specify a default/primary address.
    * **CRUD:**
      + **Create:** User Quote/Reply if Address does not exist already or if want to add new address. User can select default address.
      + **Read:** Quotes/Orders, User Settings.
      + **Update:** User Settings, change details and change default.
      + **Delete:** If address no longer associated to that User but also delete the address if not used by any other.
18. **User Group**
    * A User Group has a User, Group.
      + 1,1.
    * A User and Group belong to User Group. A User Group is created on User Registration. A User Group associates a User to a Group where a Group could imply the User type i.e. general, commercial.
    * **CRUD:**
      + **Create:** Group.
      + **Read:** All.
      + **Update:** By Admin only.
      + **Delete:** If User no longer is associated to group.
19. **User Quote**
    * A User Quote has a User, Quote.
      + 1, 1.
    * A User and Quote belong to a User Quote. A User Quote is created when a User makes a Quote. A User Quote is used to associate a User and a Quote.
    * **CRUD:**
      + **Create:** User Quote/Order.
      + **Read:** Quotes.
      + **Update:** By Admin only.
      + **Delete:** if User or Quote do not exist.
20. **User Restriction.**
    * A User Restriction has a User, Restriction, Description.
      + 1, 1, “you abused your use of the service because you …”.
    * A User and Restriction belong to a User Restriction. A User Restriction is created by Admin and associates a User and Restriction.
    * **CRUD:**
      + **Create:** User Restriction.
      + **Read:** All.
      + **Update:** By Admin only.
      + **Delete:** If User no longer associated to restriction.

## Views

Home page, Products, Portfolio, Customer Feedback, My Red Gap, Order, Quote, Quote Reply, Quote Confirmation, User.

1. **Home Page**
   * Home, about, features.
   * **Features:**
     + A summary and brief introduction to Red Gap.
     + A features section illustrating the fine points of Red Gap including culture.
   * **Functionality:**
     + N/A.
2. **Products**
   * Products Packages i.e. “Chinese Paper Cutting”.
   * **Features:**
     + A title, description, image of each Product Package i.e. “Chinese Paper Cutting”, “A unique perspective on photography, capturing your portrait with Chinese Culture.”
   * **Functionality:**
     + Select Product Package i.e. click on “Chinese Paper Cutting”, to go the “Chinese Paper Cutting” page where more details follow and a step by step guide.
3. **Portfolio**
   * Portfolio consists of some of the finest work by Red Gap and this includes a range of Product Packages and Products.
   * **Features:**
     + A title, description, image of each Product Package i.e. “Chinese Paper Cutting”, “A unique perspective on photography, capturing your portrait with Chinese Culture.”
   * **Functionality:**
     + Select Product Package i.e. click on “Chinese Paper Cutting”, to go the “Chinese Paper Cutting” page where more details follow and a step by step guide.
4. **Customer Feedback**
   * Completely for Customer Feedback, \*Customers can leave Feedback for their recent Order under Orders and for the particular Order. The most recent feedbacks will be displayed.
   * **Features:**
     + A title, description and Product Package.
   * **Functionality:**
     + N/A.

## Controllers

### Home page

The Home Page View is used for Home, About, Features.

#### Content

**Home**

**The immediate view is the Home where the logo is displayed with a sleek and bold heading “Red Gap – Make Culture Alive”.**

**Below follows with three main points of Red Gap: Chinese Culture, Personal and Hand-Made and Perfect for a Gift.**

**About**

**A simple focus with three subheadings on what Red Gap is and how it started, the primary product being “Chinese Paper Cutting” and UNESCO and finally the emphasis of tradition and culture.**

**Features**

**Chinese Culture, Personal and Hand-Made and Perfect for a Gift.**

### Products

The Products View is used for displaying our range of Products i.e. “Chinese Paper Cutting”.

Products view is accessible by clicking the Products Link where you can see “Chinese Paper Cutting” and other Products. You can also go directly to the page for “Chinese Paper Cutting”.

#### Content

**Main**

**The immediate view is the Home where the logo is displayed with a sleek and bold heading “Chinese Paper Cutting”.**

**Below follows with the steps to follow and how you can get your “Chinese Paper Cutting”.**

**Footer**

**Get your Quote now.**

### Portfolio

The Portfolio View is used for Red Gaps Portfolio and simply demonstrates Red Gap’s Range of Products.

#### Content

**Home**

**The immediate view is the Home where the logo is displayed with a sleek and bold heading “Red Gap - Products”.**

**Photos and headings with text of products.**

### Customer feedback

The Customer Feedback View is used for feedback from customers regarding orders.

#### Content

**Home**

**The immediate view is the Home where the logo is displayed with a sleek and bold heading “Red Gap – Feedback”.**

**Main**

**A Horizontal list of feedback from customers with first name only.**

### My Red Gap

The My Red Gap View is used the Users Red Gap, a Panel where Users can manage their Red Gap including their Orders, Quotes and Account Settings.

#### Content

**Home**

**The immediate view is the Home where the logo is displayed with a sleek and bold heading “My Red Gap”.**

**Below follows with three main points of Red Gap: Orders, Quotes and Account.**

**Orders**

**A simple list of Orders made where User can sort list of Orders. Orders will be displayed with Order Reference, Product Package i.e. “Chinese Paper Cutting” and then a summary of order including the price. User will also be able to contact support, cancel the order and request a refund.**

**Quotes**

**A simple list of Quotes made where User can sort list of quotes. Quote will displayed with Quote Reference, Product Package i.e. “Chinese Paper Cutting” and then a summary of the Order.**

**A Quote is created and will either have received a response i.e. a Quote Reply and if this is still pending then a message will display next to the summary “Pending Quote Reply”. If a Quote Reply has been received then the User will be able to select from a dropdown with a header of Accept Quote with the options of yes or no or contact.**

**Account**

**Account is where the user can manage their account is this includes user settings.**