Project   : Poodle.com

Student name   : Himarsha R Jayanetti

Student UIN   : 01160219

1. Overview

List specifications of this milestone and label whether each specification is fulfilled or not.

Table 1: Overview of status for Milestone 2 specifications.

Fulfilled	#	Description
Yes	1	The search engine can return paginated results; [2 points]
Yes	2	The search engine can highlight results that contain search terms; [2 point]
Yes	3	The SERP should display the actual term (after sanitization) shown on top; [2 point]
Yes	4	Users can click each item on SERP and go to either an external link or a page containing more information of the item; [2 point]
No	5	Users can save items in search result to their profiles; [2 points]
Yes	6	Users have to login first to save search history to their profiles; [2 point]
Yes	7	reCAPTCHA should be used for both the logging in and the signing up page; [3 points]

2. Pagination

The pagination is implemented using a JavaScript plugin made available via List.js. The script can be embedded anywhere in the code and there are several parameters that we have control over to customize the pagination as we require. The control module fetch ALL records, sort them, and display them all together and the script will be used to organize them across pages.

```
<script src = "https://cdnjs.cloudflare.com/ajax/libs/list.js/1.5.0/list.min.js"></script>
<script>
var options = {
valueNames: [ 'name', 'category' ],
page: 10,
pagination: true,
innerWindow: 10,
outerWindow: 10
};

var listObj = new List('listId', options);
</script>
```

(https://listjs.com/docs/pagination/)

- **Page**   : Number of records per page
- **innerWindow**   : How many pages should be visible on each side of the current page.
  innerWindow: 2 (Example: ... 3 4 **5** 6 7)
- **outerWindow**   : How many pages should be visible on from the beginning and from the end of the pagination.
  outerWindow: 2 (Example: 1 2 ... 4 5 **6** 7 8 ... 11 12)
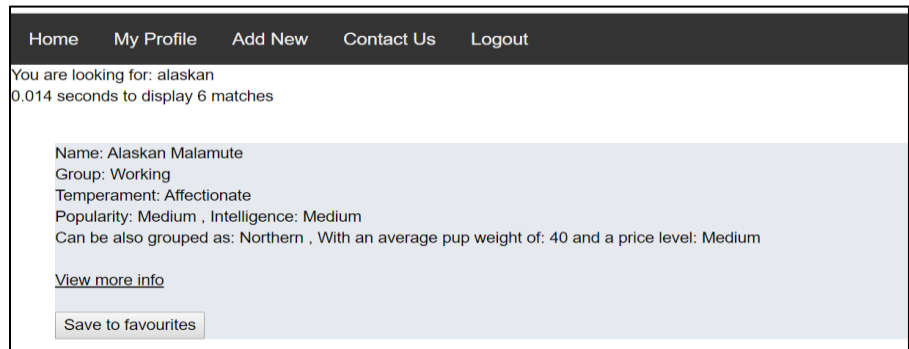
3. Highlight

Describe how the highlight is implemented. The highlight only works in the first page due to the fact that the highlighting function is called when the search term / keyword is initially fetched. But in pagination from the way I have implemented, it does not re-search but re-arrange the already fetched data.

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.4.1/jquery.min.js"></script>
<script src="https://cdn.jsdelivr.net/mark.js/8.6.0/jquery.mark.min.js"></script>
<script>
$(document).ready(function(){
$(function() {
var mark = function()
{
  var keyword = $("input[name='keyword']").val();
  $(".snippet").unmark({
    done: function() {
      $(".snippet").mark(keyword);
    }
  });
};
$("input[name='keyword']").on("blur", mark);
});
});
</script>
```

4. Favorite Database

The user has to be logged in to save the documents as favorites. If the user is not logged in the save favorites option will not be showing up. I have made it in such a way that the show result is different for a user in session and a general user.

> Home   My Profile   Add New   Contact Us   Logout
>
> You are looking for: alaskan
> 0.014 seconds to display 6 matches
>
> Name: Alaskan Malamute
> Group: Working
> Temperament: Affectionate
> Popularity: Medium , Intelligence: Medium
> Can be also grouped as: Northern , With an average pup weight of: 40 and a price level: Medium
>
> View more info
>
> Save to favourites

> Log in to your account to save search results to your profile! Don't have an account yet? Sign up here first..
>
> Name: German Pinscher
> Group: Working
> Temperament: Even-tempered
> Popularity: High , Intelligence: Low
> Can be also grouped as: Terrier , With an average pup weight of: 14 and a price level: Medium
>
> View more info

If the user is not logged in the user interface will be like how it shows in the image.

It will prompt a message requesting to login to the account if the user needs to save items as favorites.

The schema of the favorites database table is as the diagram. There is an "id" which is auto incrementing and is the primary key. The uname field is the username which distinguishes my session. I will be saving the document ID and the time when the user save the document as a favourite into the database.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id 🔑	int(100)			No	None		AUTO_INCREMENT	🖉 Change ⊘ Drop ▾ More
2	uname	varchar(100)	utf8mb4_0900_ai_ci		No	None			🖉 Change ⊘ Drop ▾ More
3	doc_id	varchar(100)	utf8mb4_0900_ai_ci		No	None			🖉 Change ⊘ Drop ▾ More
4	item	varchar(100)	utf8mb4_0900_ai_ci		No	None			🖉 Change ⊘ Drop ▾ More
5	savetime	varchar(100)	utf8mb4_0900_ai_ci		No	None			🖉 Change ⊘ Drop ▾ More

↑ ☐ Check all   With selected: 🔲 Browse 🖉 Change ⊘ Drop 🔑 Primary 🔟 Unique 🔢 Index 🔤 Fulltext

5. ReCAPTCHA

Version used: reCAPTCHA v2

In order to implement the **ReCAPTCHA,** I have included the necessary JavaScript resource and a g-recaptcha tag for rendering the reCAPTCHA widget on my page. The g-recaptcha tag is a DIV element with class name g-recaptcha and my site key obtained when registered for the

```
<script src='https://www.google.com/recaptcha/api.js' async defer></script>
</head>
dy>



rm action="authenticate_user.php" method="post">
<table cellpadding="6" border="0" align="center">
    <br><br><br>
    <tr><td></td><td><?php if(isset($_GET['error']))
        echo "<p id='error'>".$_GET['error']."</p>"; ?></td></tr>
    <tr><th>Username:</th><td><input type="text" name="uId"/></td></tr>
    <tr><th>Password:</th><td><input type="password" name="pwd"/></td></tr>
    <tr><td></td><td><input type="submit" value="Login" /></td></tr>
    <tr><td></td><td>Forgot your password ? <a href="resetpassword.php">Click here</a></td></tr>
    <tr><td></td><td><div class="g-recaptcha" data-sitekey="6LeNucEUAAAAAD-AUGZdmaEpdCDdOUuMnCDWNrww"></div></td></tr>
    <tr><td><br><br></td></tr>
```

service in the data-sitekey attribute. The script is loaded using the HTTPS protocol and included in the beginning of the code.

As per the requirements of this Milestone, I have made sure that the google re-captcha verification is required while logging in and also during the initial sign up / registration to Poodle.com

6. Challenges and Lessons

I faced many challenges during this Milestone than any of the previously accomplished milestones. The main challenge was to implement pagination to display the search results. Initially, I have been trying to implement the pagination using the traditional way by defining the parameters and function by myself which was quite challenging. In order to overcome this challenge, I have discovered a JavaScript resource built for pagination and started using it which was less challenging to implement but with the same amount of control over the necessary attributes. Another challenge that I faced during this Milestone was the save favorites requirement. The idea was clear and I made sure the save option will be provided to the users only if they are logged in. But the way of actually saving the document and retrieving it was not clearly understood. Upon speaking with the professor during the work-time lectures, the idea of saving the documents using the unique doc id and retrieving them using the same helped a lot in implementing this feature. The database schema was also clearly explained by the professor during the same session.

The main lesson I learned during this Milestone is that it is important to have a clear understanding of the requirements as early as possible so that you can clear all your doubts at an earlier stage to be able to meet your deadlines. If I were to do anything differently about what I have done so far, it would be to have the MVC design pattern in mind from the initial stage and apply that to the design of my search engine. Also, I would use bootstrap or any other framework for user interface improvements from day one.

7. Additional features
The remove record from favorites is implemented as a get ahead from Milestone 3.