

Report

1. Accessing the Website

Video: <https://www.bilibili.com/video/BV1HC4y1772E?t=8.7>

Code: <https://githubfast.com/123Yiran/258-assignment2>

1.1 Simple Guide on How to Access:

To access, you need to go to GitHub and visit my public repository:

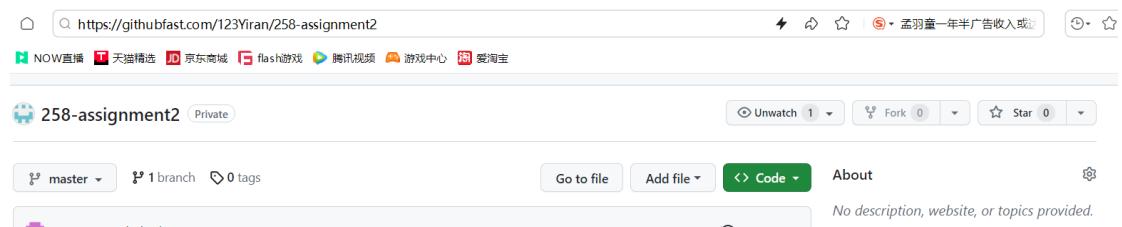
<https://githubfast.com/123Yiran/258-assignment2.git>.

From there, clone it, and I recommend using **SSH** for the download. In the directory, click on "**assignment2.sln**" to open it in the **Visual Studio** interface. Click "Run" to start browsing the webpage.

For detailed steps, please refer to 1.2.

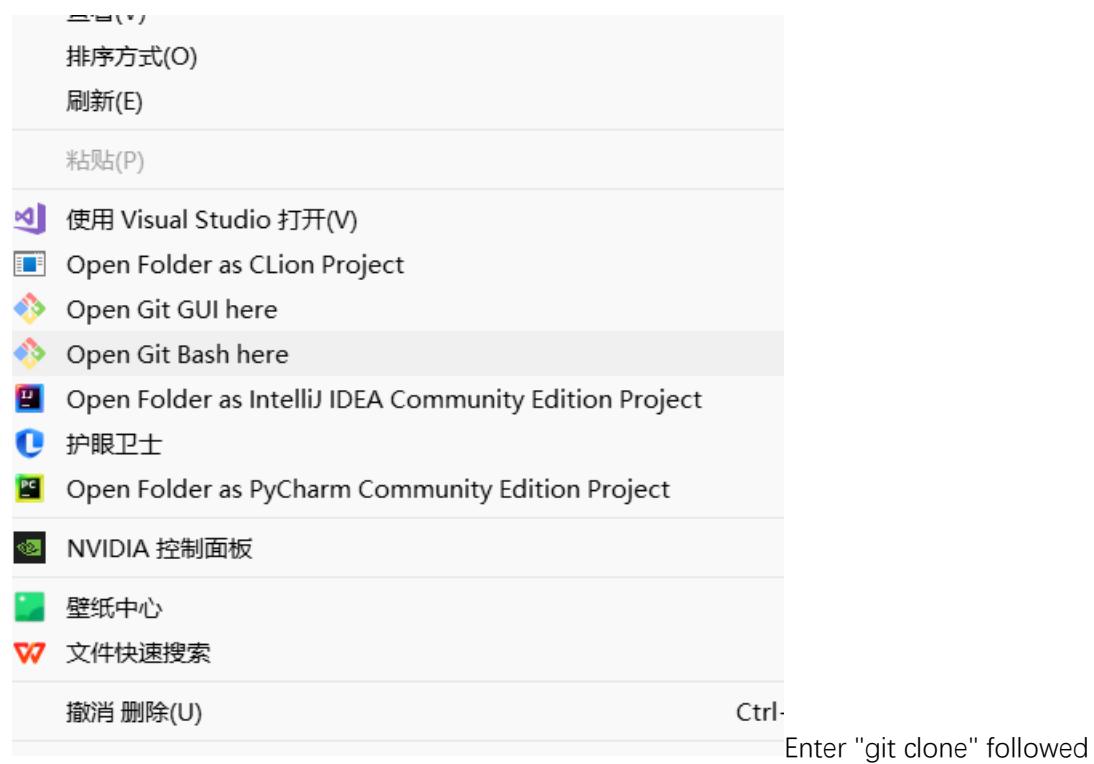
1.2 Detailed Guide on How to Access the Webpage:

1. Firstly, go to the following website:



On the repository page, find the SSH protocol and clone its address:

Choose any folder you prefer, and open the Git Bash interface:



by the cloned address. (Use SSH protocol here; if you don't have an SSH public key, please see 1.3).

```
Lenovo@LAPTOP-KRACD7HI MINGW64 ~/Desktop (master)
$ git clone git@github.com:123Yiran/258-assignment2.git
Cloning into '258-assignment2'...
remote: Enumerating objects: 697, done.
remote: Counting objects: 100% (39/39), done.
remote: Compressing objects: 100% (38/38), done.
remote: Total 697 (delta 3), reused 14 (delta 0), pack-reused 658
Receiving objects: 100% (697/697), 149.73 MiB | 283.00 KiB/s, done.
Resolving deltas: 100% (163/163), done.
Updating files: 100% (754/754), done.

Lenovo@LAPTOP-KRACD7HI MINGW64 ~/Desktop (master)
$ |
```

After cloning, select the "assignment2.sln" file in the directory:

assignment2.csproj	2023/11/8 23:50	VisualStudio.Lau...	28 KB
assignment2.csproj.user	2023/11/8 23:50	Per-User Project...	3 KB
assignment2.sln	2023/11/8 23:50	Visual Studio Sol...	2 KB
favicon.ico	2023/11/8 23:50	ICO 图片文件	32 KB
Global.asax	2023/11/8 23:50	ASP.NET Server ...	1 KB
Global.asax.cs	2023/11/8 23:50	C# Source File	1 KB
packages.config	2023/11/8 23:50	XML Configurati...	2 KB

Open Visual Studio, click the "Run" button, and you can access the webpage freely.



1.3: How to Use the SSH Protocol for File Download:

3.1 Check Your Keys

1. First, check if your keys exist. If they do, there's no need to generate them. Start by navigating to the SSH directory with the command "cd ~/.ssh" and view the list of keys:

id_rsa: Private key

id_rsa.pub: Public key

2 Create Keys

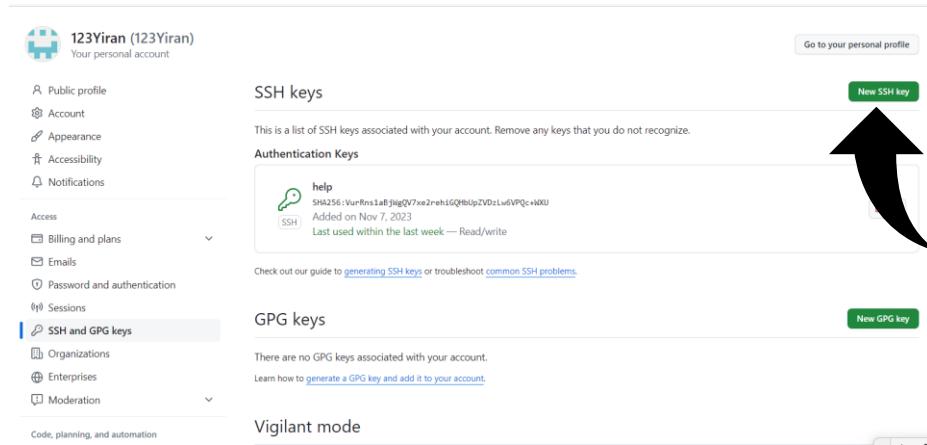
If there's no "id_rsa.pub" file, it means you haven't configured a public key. In that case, you'll need to create one. Use the following command in the Git command line:

```
$ ssh-keygen -t rsa -b 4096 -C your_email@example.com
```

3. Press Enter three times in a row.

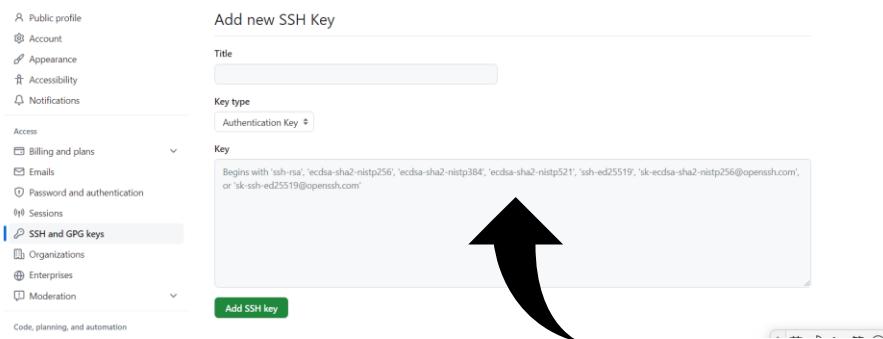
4. Fourth, Git Server

Add your SSH key as shown below to this page:



The screenshot shows the 123Yiran user profile page. The left sidebar has sections for Public profile, Account, Appearance, Accessibility, Notifications, Access, Billing and plans, Emails, Password and authentication, Sessions, SSH and GPG keys (which is selected), Organizations, Enterprises, and Moderation. The main content area is titled 'SSH keys' and shows a list of keys. One key is listed with a green SSH icon, a title, and a timestamp. Below the list is a note about generating SSH keys. To the right of the list is a 'New SSH key' button. A large black arrow points to this button.

Enter the content of the "id_rsa.pub" file from your PC and click "Add."



The screenshot shows the 'Add new SSH Key' form. The left sidebar is the same as the previous screenshot. The main form has fields for 'Title' (empty), 'Key type' (set to 'Authentication Key'), and a large text area for the SSH key content. The text area contains placeholder text: 'Begins with "ssh-rsa", "ecdsa-sha2-nistp256", "ecdsa-sha2-nistp384", "ecdsa-sha2-nistp521", "ssh-ed25519", "sk-ecdsa-sha2-nistp256@openssh.com", or "sk-ssh-ed25519@openssh.com"'. Below the text area is an 'Add SSH key' button. A large black arrow points to the text area.

5. Fifth, Code Operations

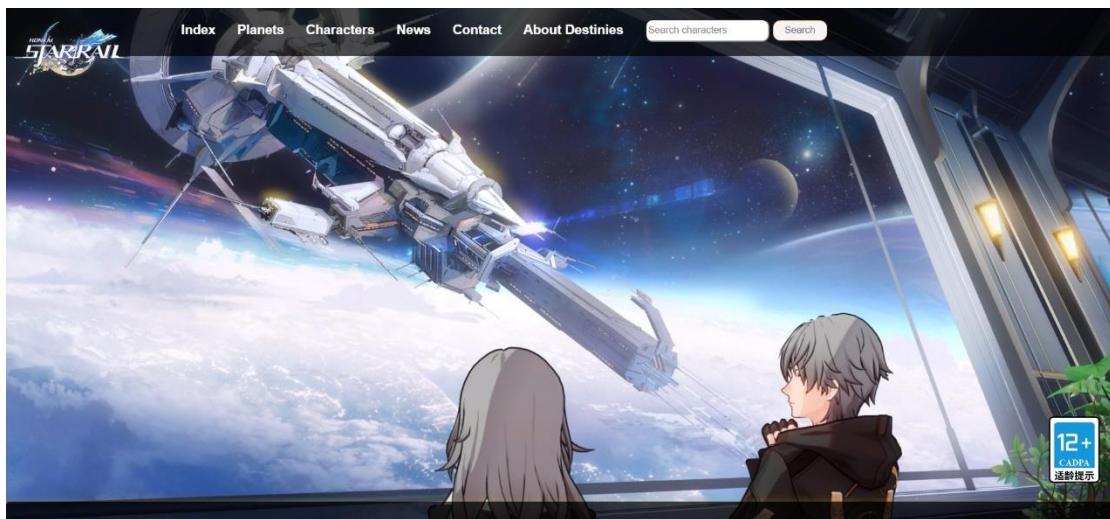
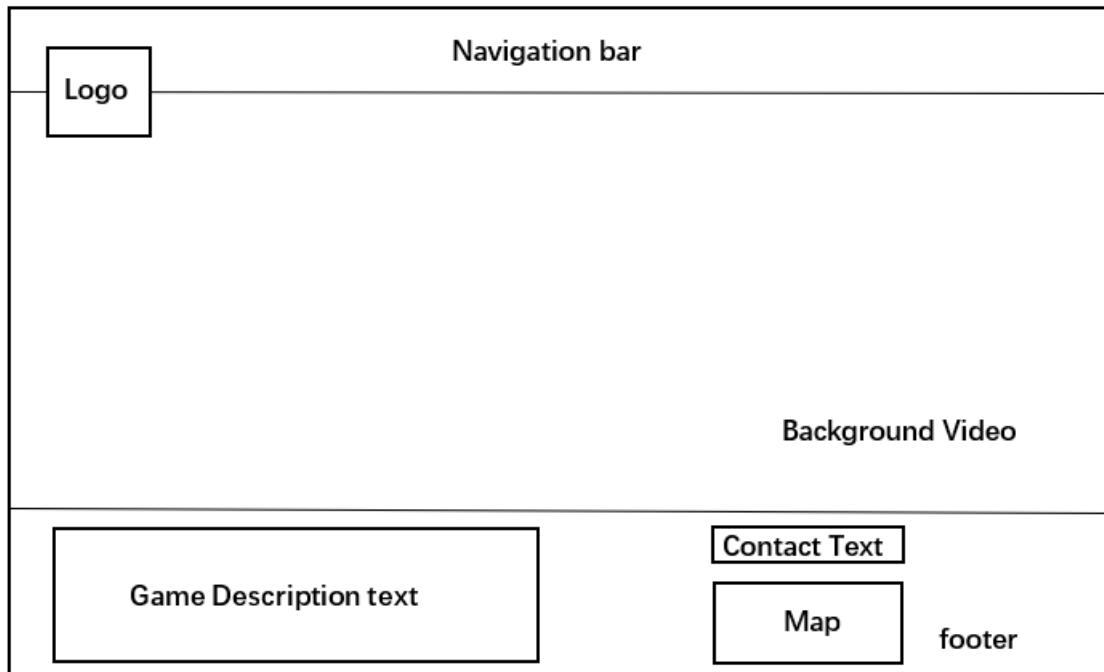
Pull the code by checking the clone address of the GitHub repository. Here, we're choosing the SSH method. Copy the address to clone: git@github.com:123Yiran/258-assignment2.git. Ensure your SSH key is set up correctly to access the repository securely.

2. Website Layout

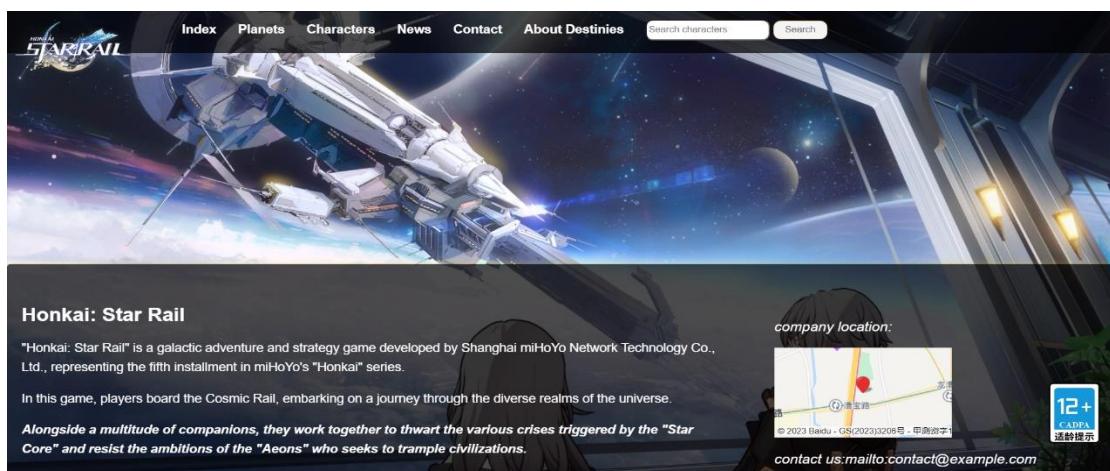
2.1 Home – Layout

2.1.1 Home – Index

The main section is divided into **three** parts: **at the top** is the navigation bar, fixed at the very top of the page; **in the middle** is the background video, serving as the central content of the page; **at the bottom** is the footer, which includes game description on the left and contact information and a map on the right. When you first enter the page, only the corners of the footer are visible, and the full content is revealed when you scroll down.

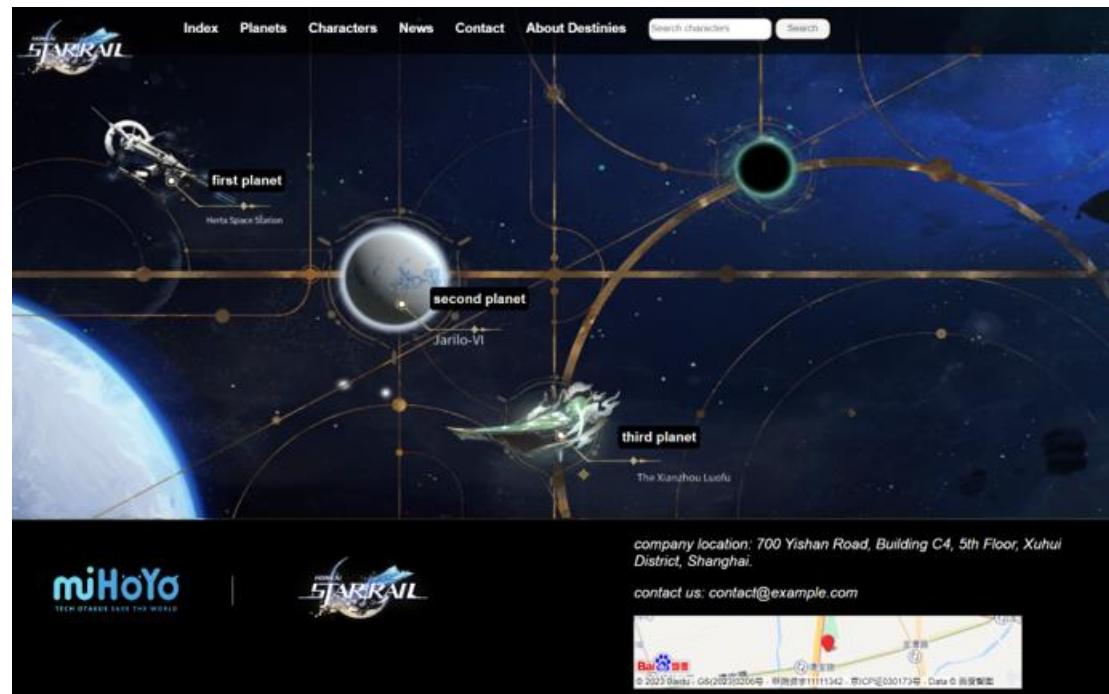
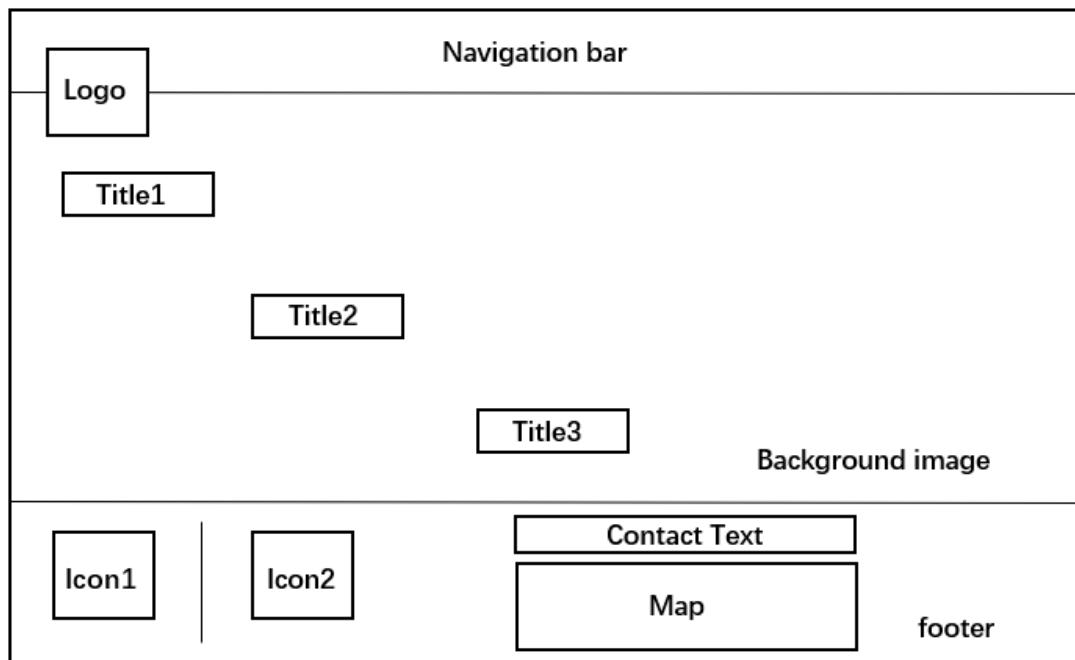


scroll down:

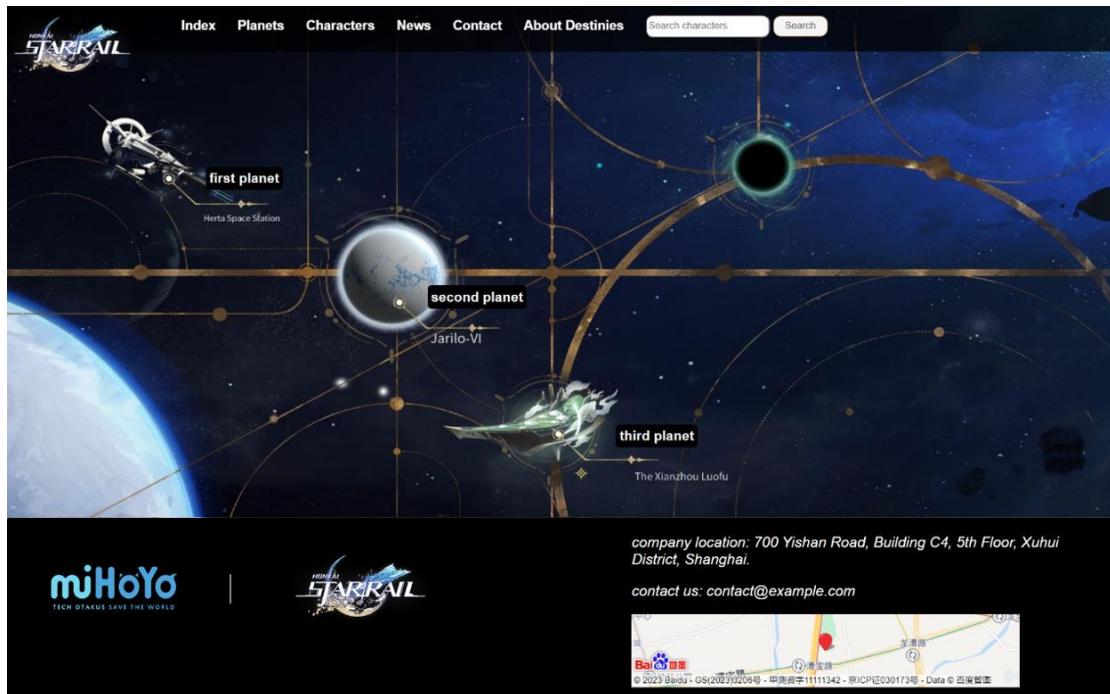
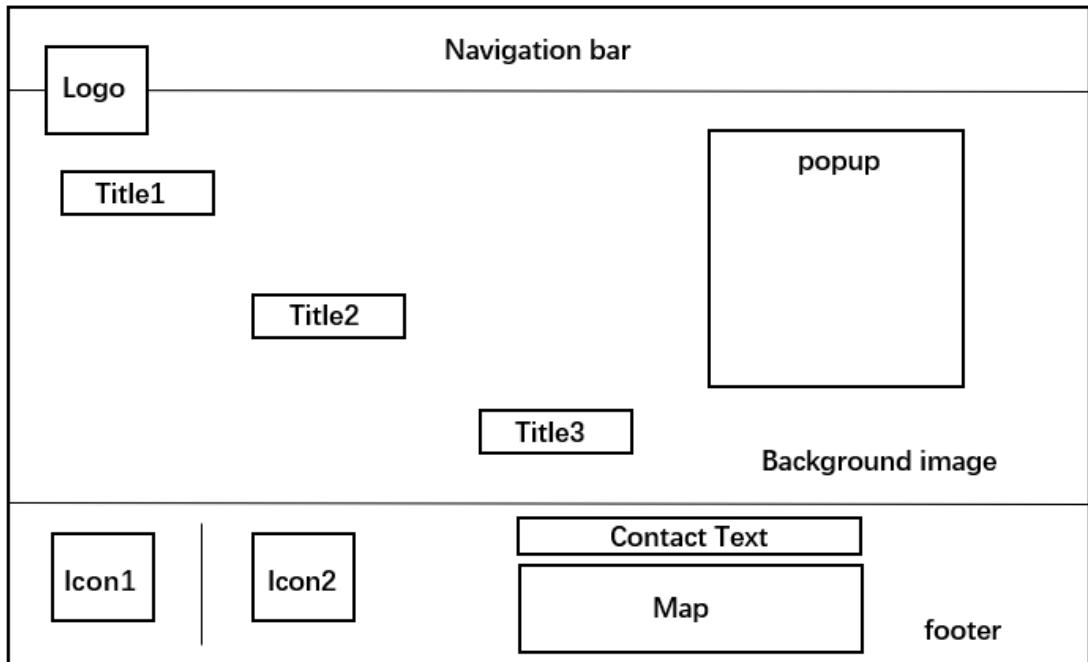


2.1.2 Home – Planets

The main section consists of **three** parts: **at the top** is the navigation bar, fixed at the very top of the page; **in the middle** is the background image with titles for three planets arranged diagonally. Clicking on these titles on the right side of the screen will bring up a popup with information about the corresponding planet ; **At the bottom** is the footer, which includes the game logo on the left, contact information, and a map on the right.



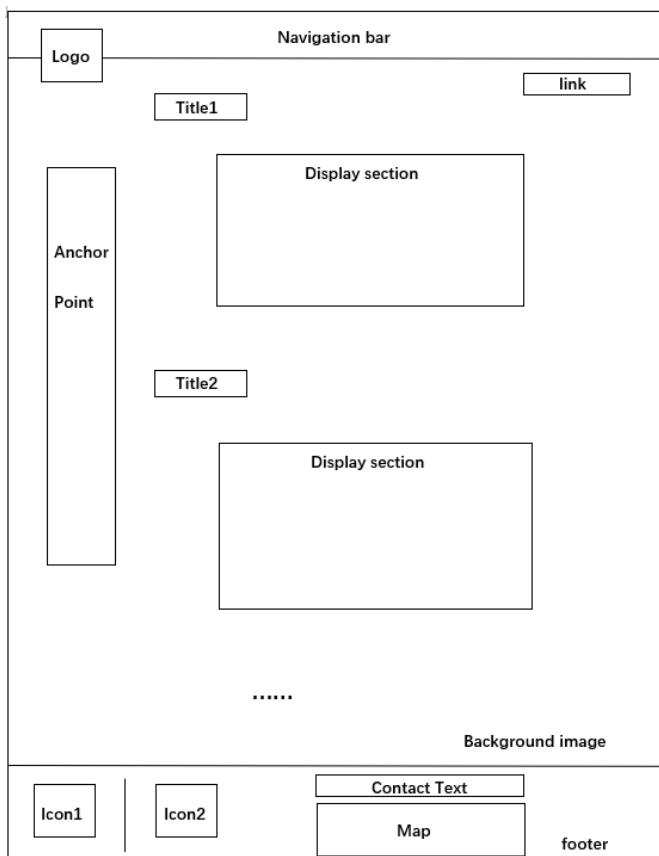
click:



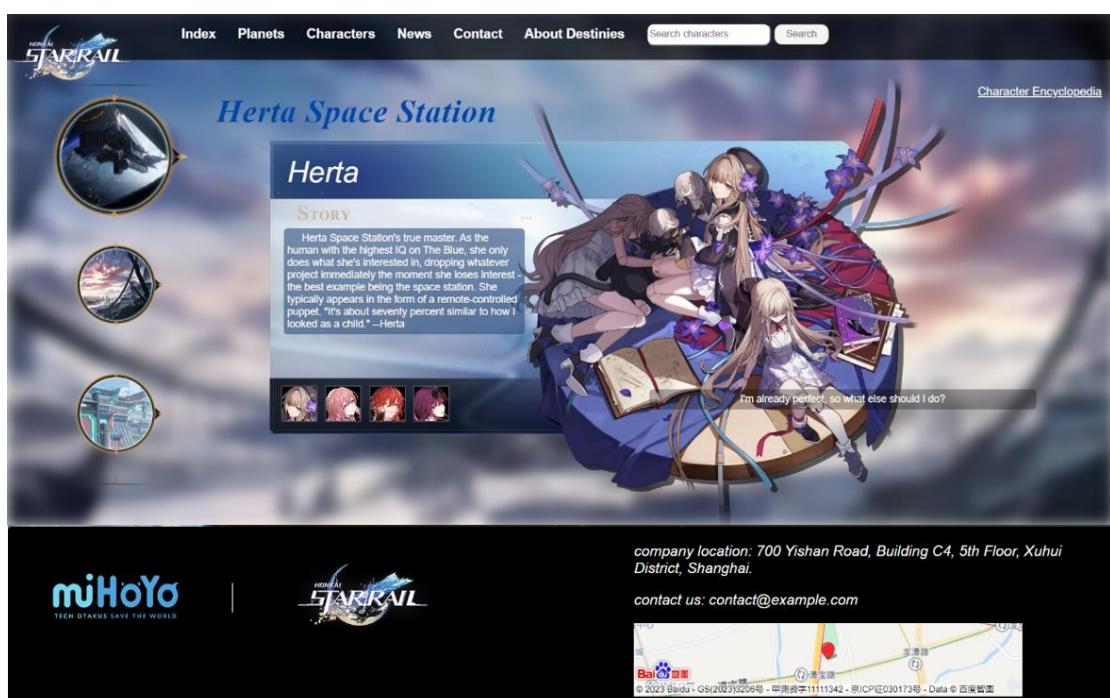
2.1.3 Home – Characters

The main section is divided into **three** parts: **at the top** is the **navigation bar**, fixed at the very top of the page; **in the middle** is the **character showcase**, consisting of two parts. On the left, there are **anchor points** fixed to the left side of the screen. Clicking on these

anchors allows the screen to scroll to the corresponding content. On the right, there's the **character showcase section**, which includes a title at the top, a character display board in the middle, and a character compendium link in the top right corner. **At the bottom** is the **footer**, which includes the game logo on the left, contact information, and a map on the right.

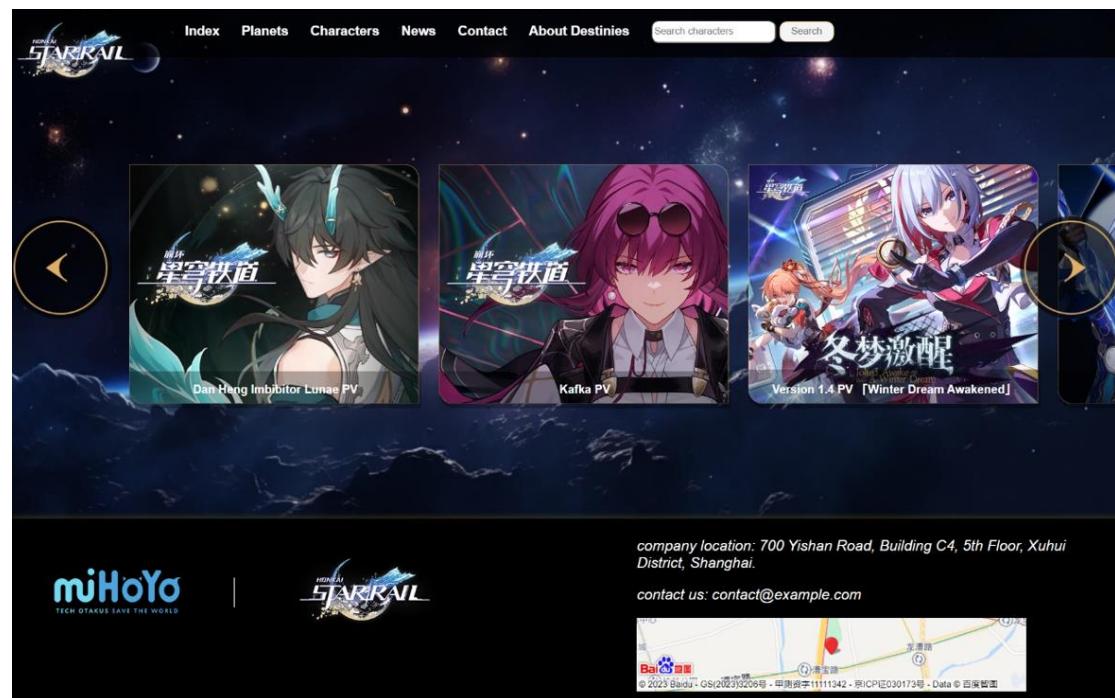
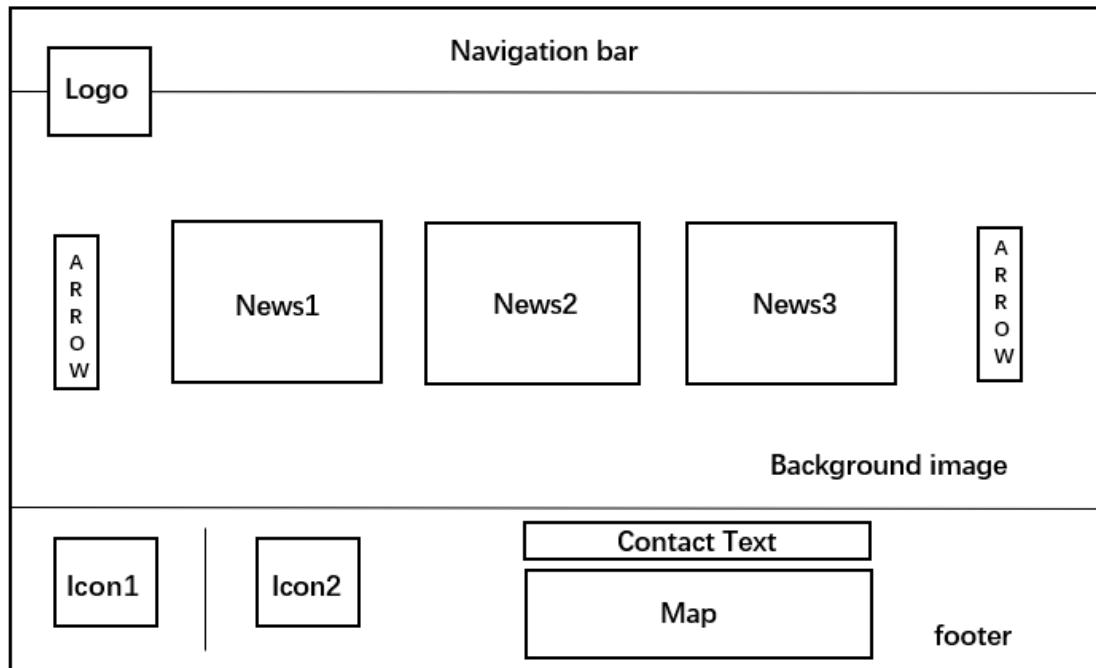


the actual page (showing only the first part and the footer):



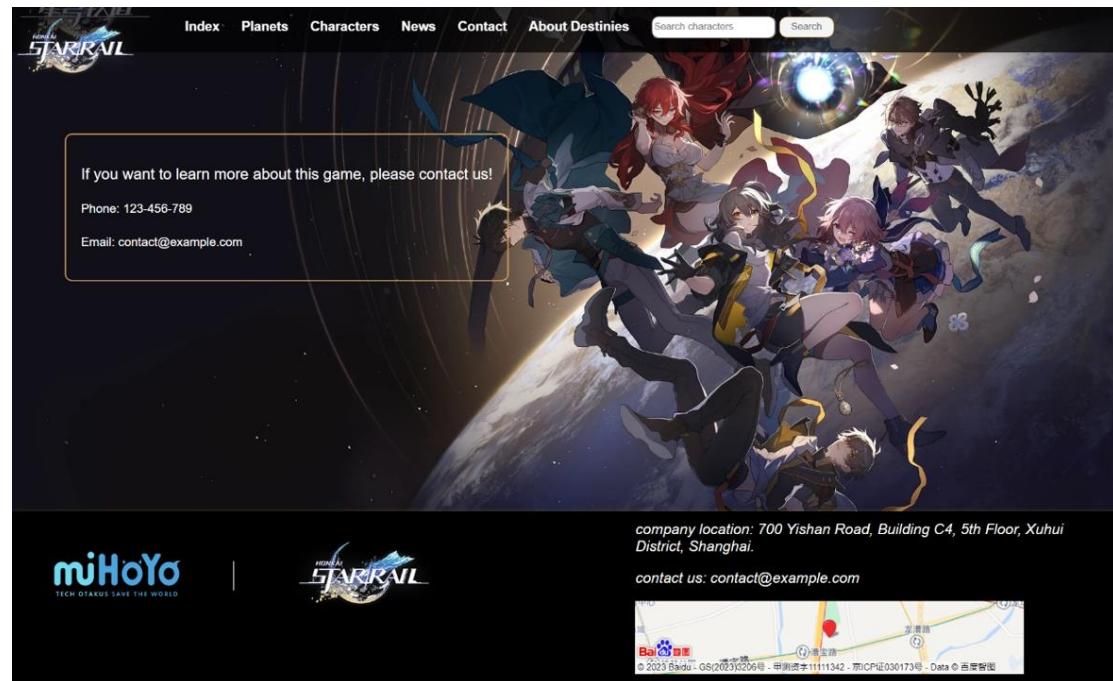
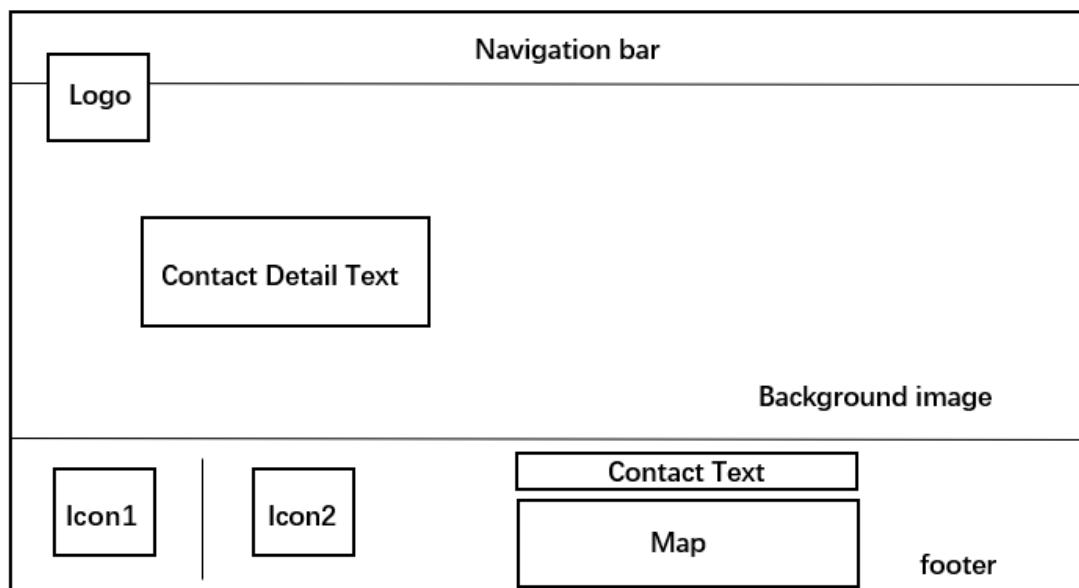
2.1.4 Home – News

The main section consists of **three** parts: **at the top** is the navigation bar, fixed at the very top of the page; **in the middle** is the news section, with arrow icons on both sides for controlling the movement of a **slideshow**. In the center, there are horizontally arranged **news boxes**, each comprising an image and a text description. **At the bottom** is the footer, which includes the game logo on the left, contact information, and a map on the right.



2.1.5 Home – Contact

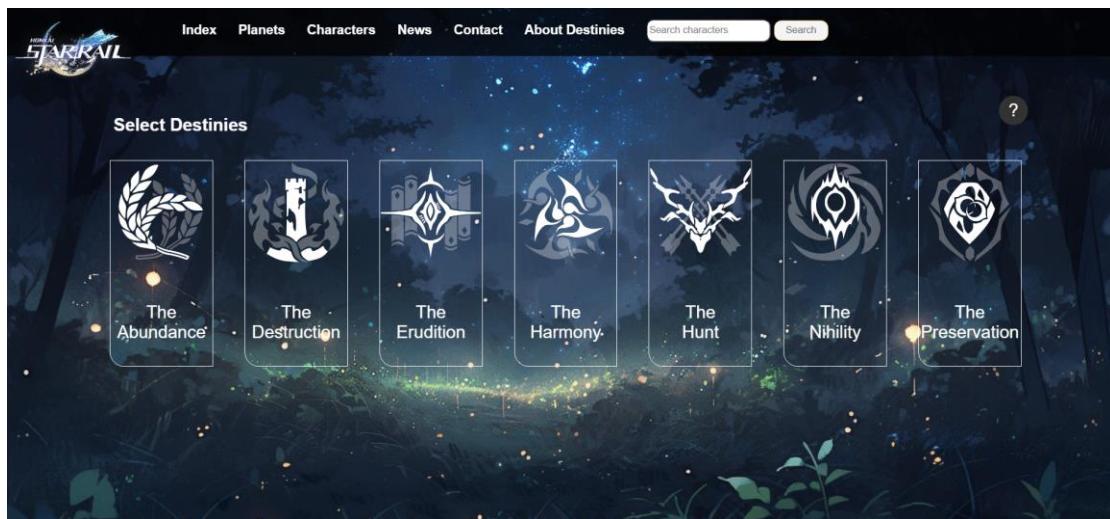
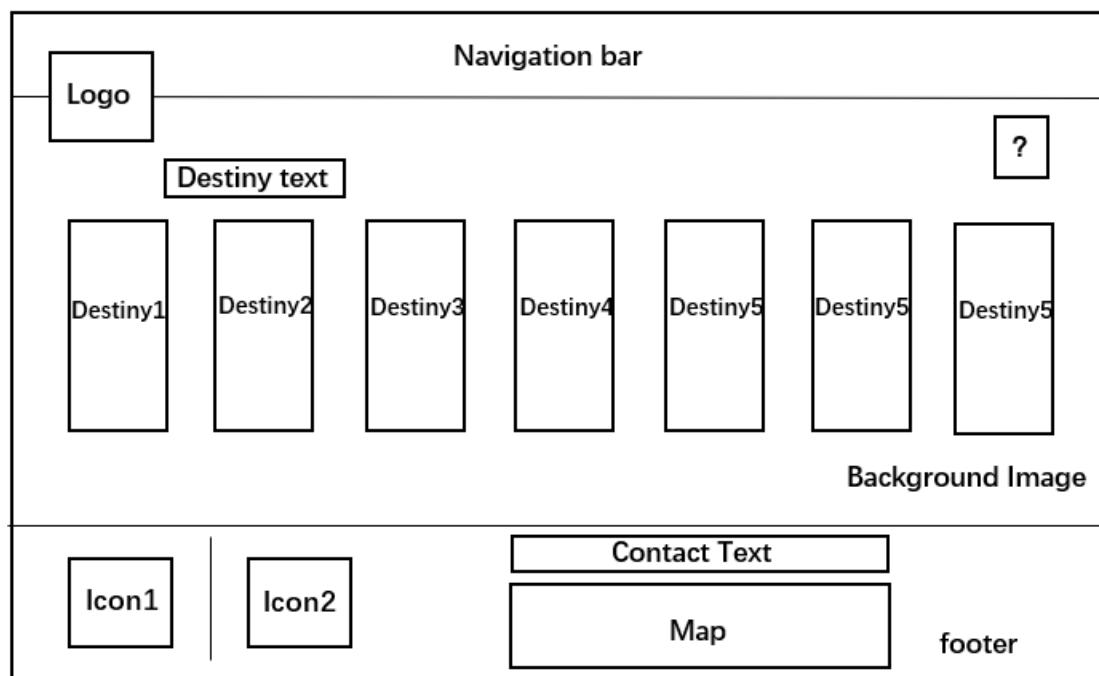
The main section comprises **three** parts: **at the top**, there is the **navigation bar**, fixed at the very top of the page; **in the middle**, there is the main contact interface, with the **contact information panel** on the left side of the screen; **at the bottom**, there is the **footer**, which includes the game logo on the left, contact information, and a map on the right.



2.2 Destiny – Layout

2.2.1 Destiny – Index

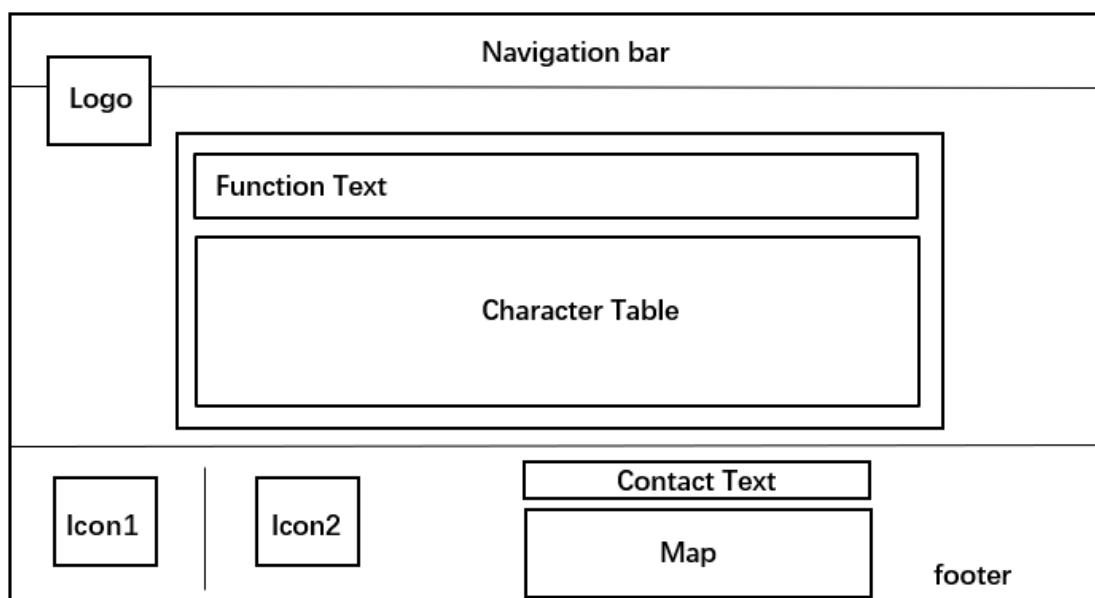
The main section consists of **three parts**: at the top, there is a fixed **navigation bar** at the very top of the page; **in the middle**, there is the display of destiny, which comprises **three components**. At the top is the **title**, and just below the title are **Destiny icons** arranged horizontally. In the top right corner of the screen is a **question mark icon**, which, when clicked, displays a conceptual introduction to Destiny in the center of the screen. **At the bottom**, there is the **footer**, which includes the game logo on the left, contact information, and a map on the right.



2.3 Characters – Layout

2.3.1 Characters – Index

The main section consists of **three parts**: at the top, there is a fixed navigation bar at the very top of the page; **in the middle**, there is the character compendium section, which is divided into **two parts**. At the top are the functional **features** of character display, including **filtering and sorting** options. Below that is the character display **list**, arranged vertically, with pagination content at the bottom of the table. **At the bottom**, there is the **footer**, which includes the game logo on the left, contact information, and a map on the right.



Character Encyclopedia

Showing all 34 characters

Filter by destiny: All Sort By: Default Filter

Name	Destiny	Age	Faction	Attribute		
	Arlsn	The Destruction	354	Herta Space Station	Lightning	Details
	Asta	The Harmony	50	Herta Space Station	Fire	Details
	Bailiu	The Abundance	231	The Xianzhou Luofu	Lightning	Details

Page 1 of 12

1 2 3 4 5 6 7 8 9 10 11 12

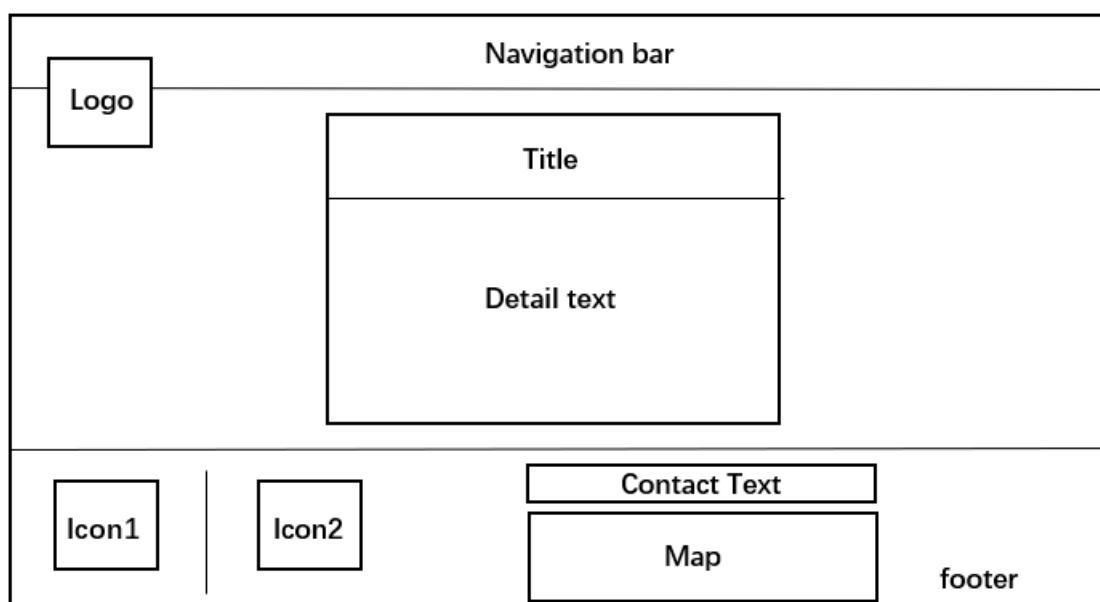
company location: 700 Yishan Road, Building C4, 5th Floor, Xuhui District, Shanghai.

contact us: contact@example.com

Baidu Map

2.3.2 Characters – Details

The main section consists of **three parts**: **at the top**, there is a fixed **navigation bar** at the very top of the page; **in the middle**, there is the character compendium section, which is divided into two parts. At the top is the **title** of the character showcase, and below it is the **detailed character information**, including a **link** to return to the character's index. **At the bottom**, there is the **footer**, which includes the game logo on the left, contact information, and a map on the right.



STAR RAIL

Index Planets Characters News Contact About Destinies

Search characters

Details

Character

Name	Arlán
Destiny Name	The Destruction
Age	354
Faction	Herta Space Station
Attribute	Lightning
Description	The inarticulate head of Herta Space Station's Security Department. While scientific research is beyond his understanding, Arlán is willing to risk his life to protect the staff who value research so very much. He is used to the pain and wears his scars like badges of honor. Only when holding Peppy does the boy finally let down his guard and show a rare smile.

[Back to List](#)

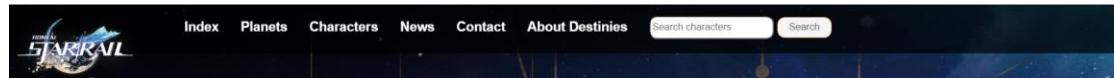
company location: 700 Yishan Road, Building C4, 5th Floor, Xuhui District, Shanghai.

contact us: contact@example.com

Baidu Map

3. Utilizing Website Features

3.1 Navigation and Menus:



The navigation bar contains hyperlinks to six pages with the following content:

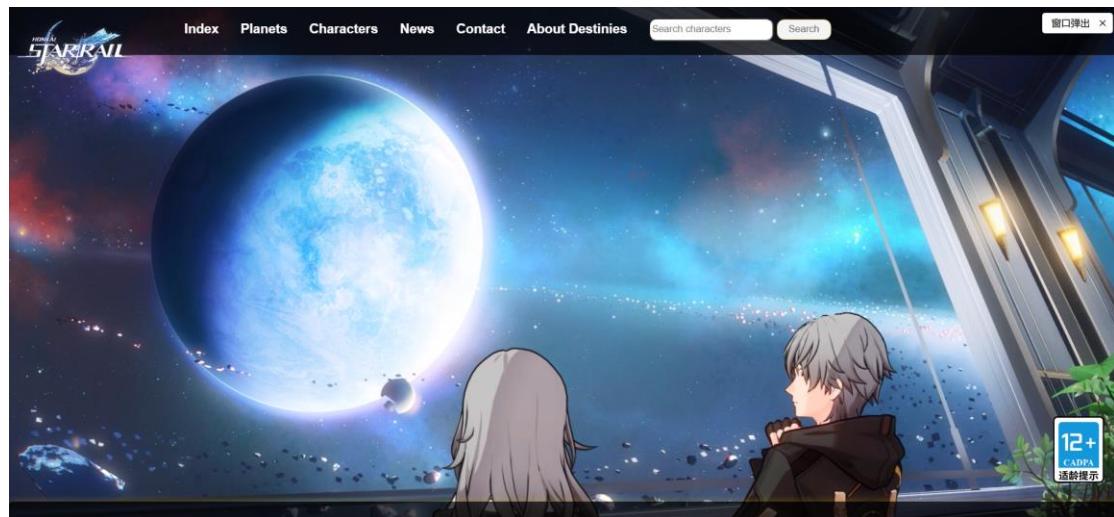
1. **Index:** Game Introduction
2. **Planets:** Game Map Introduction, down to each individual planet
3. **Characters:** Display of Game Characters
4. **News:** Latest Game Updates and Information
5. **Contact:** Contact Information
6. **About Destiny:** Explanation and Presentation of the Game's Special Concept - Destiny

Clicking on the respective link will allow you to access and browse the relevant content on each page.

3.2 how to use my website:

3.2.1 Index

Upon entering the page, an entrance animation and audio will play:



When scrolling down, you can view the game introduction, along with the map and email address:

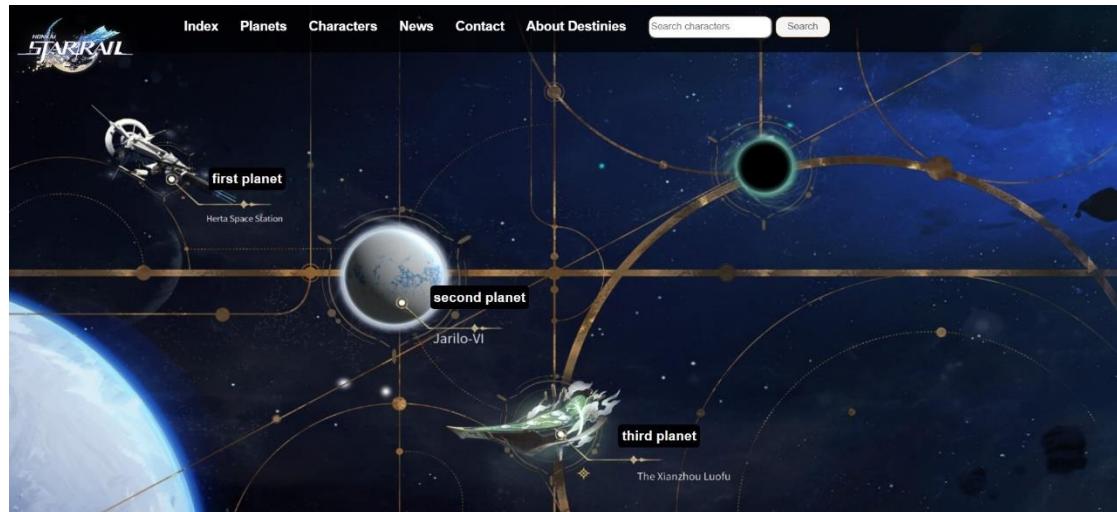


The email address can be clicked directly (hovering the mouse over it will provide a tooltip). Clicking on it will lead to the email interface:

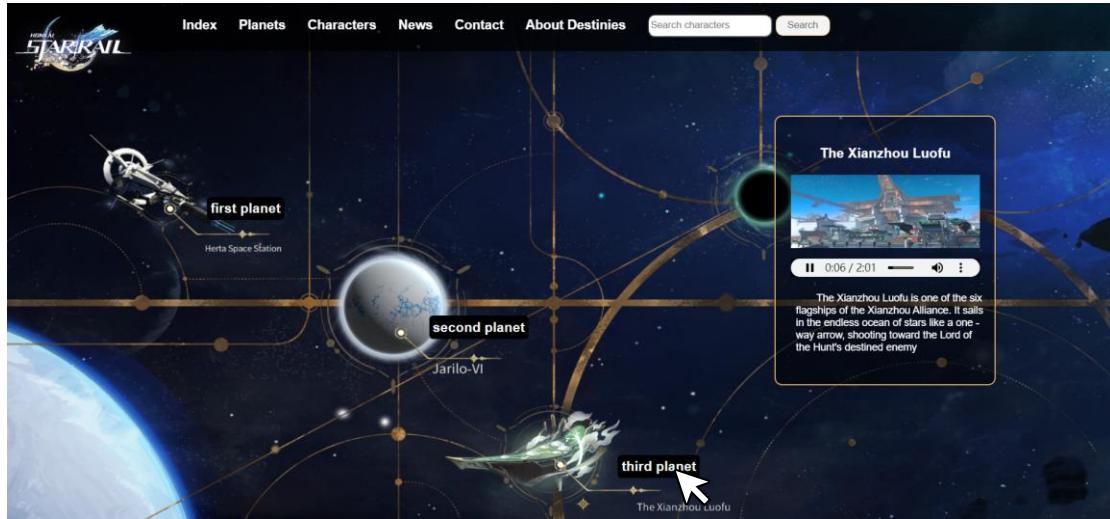


3.2.2 Planets

Upon entering the interface, the game map is displayed:



Clicking on the titles (First Planet/Second Planet/Third Planet) will bring up the corresponding planet descriptions (with automatic music playback)



When scrolling down, you can see the footer interface:

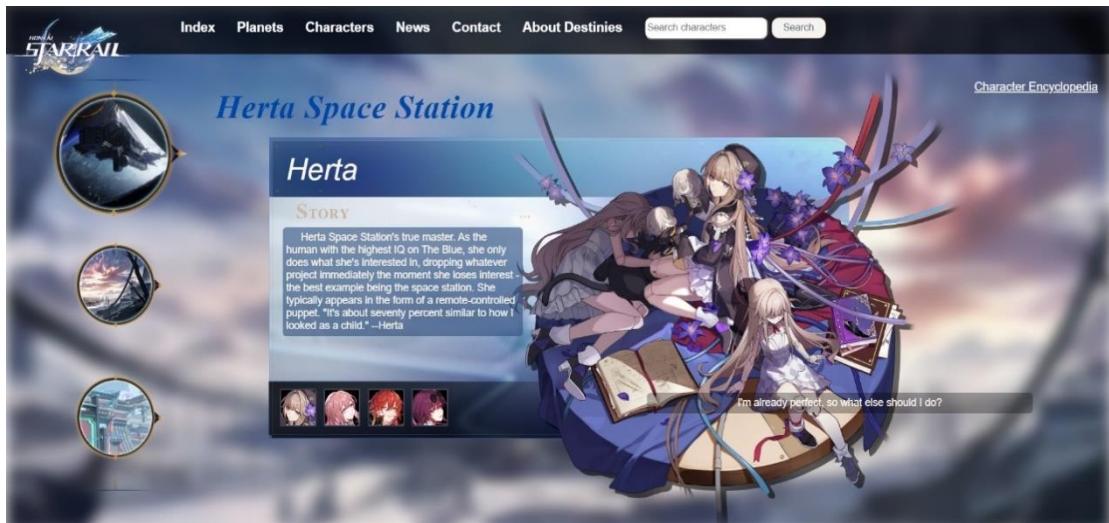


Clicking on it will bring up the email interface

*Except for the Home-Index page, all footers are the same and will not be further described.

3.2.3 Character

Entering the Home-Character interface:



The left side features anchor points, three in total, corresponding to the three planets on the map:



Clicking on these anchors will take you to the respective section to view the representative characters of that planet:

The Xianzhou Luofu

Jing Yuan

STORY

Although his appearance may be one of indolence, the Cloud Knight general who commands the Xianzhou Luofu is more meticulous than seemingly meets the eye. He does not consider saving a situation from the brink of disaster to be a show of wisdom, and is thus fastidious with routine affairs to avoid any potential problems. As such, his command of the Xianzhou Luofu has remained many years of peace, with Jing Yuan's seemingly lazy demeanor having earned him the moniker of "Dozing General."

A truly masterful chess player has no brilliant moves. People clamor excitedly over displays of extreme cunning, forgetting to worry about the overall dangers of the situation.

Character Encyclopedia

Clicking on the character's avatar will display the corresponding character showcase board:

The Xianzhou Luofu

Dan Heng Imbibitor Lunae

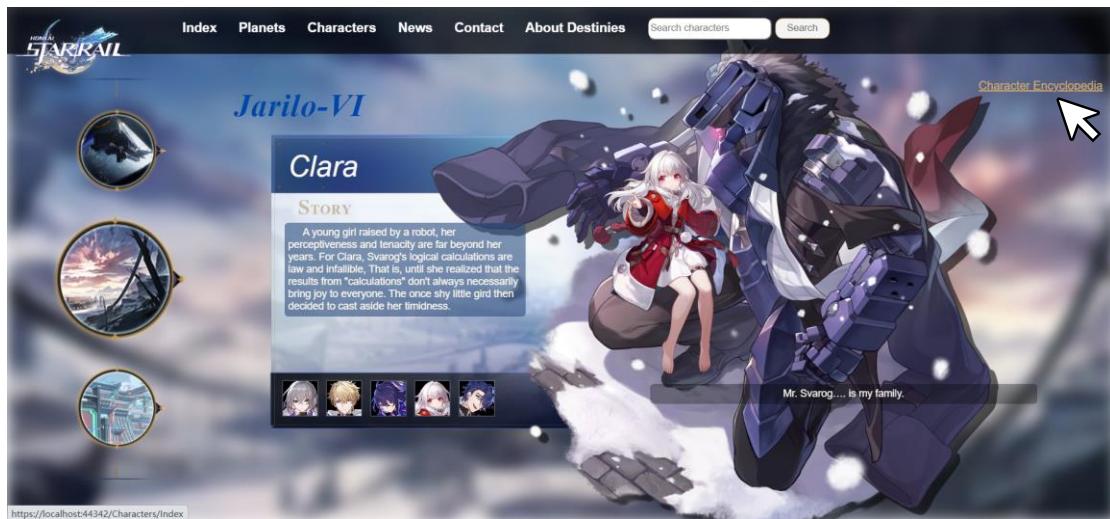
STORY

Dan Heng's true Vidyadhara form, revealed after rejecting the mortal body from his previous reincarnation of "Imbibitor Lunae". Upon accepting the majestic horns atop his crown, he must accept all the merits and faults attributed to that person. However, he was never himself.

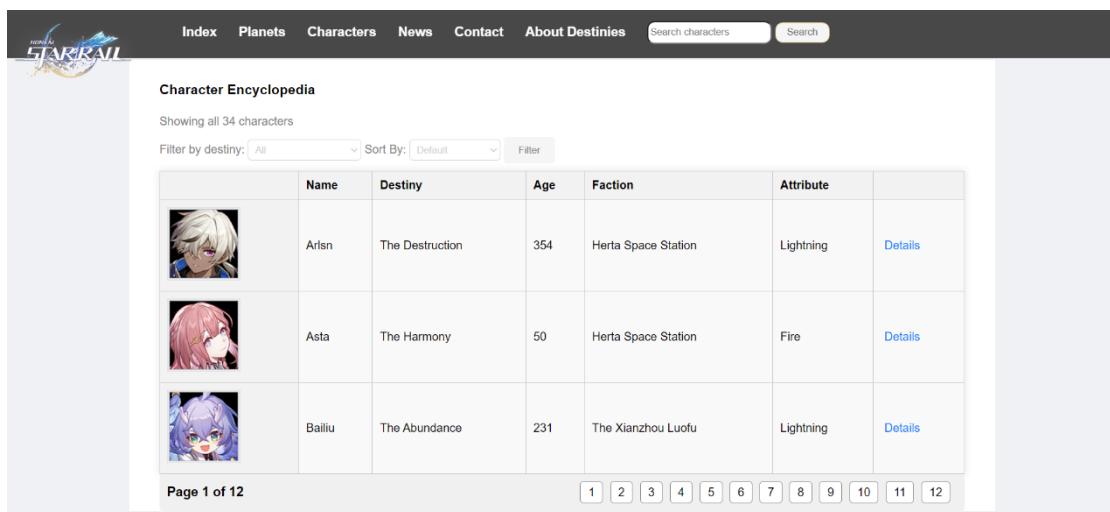
Even as we speak, farewells are happening throughout the universe. The grief that we share is real, but there's nothing special about it.

Character Encyclopedia

The Character Compendium link is fixed in the top right corner of the page:



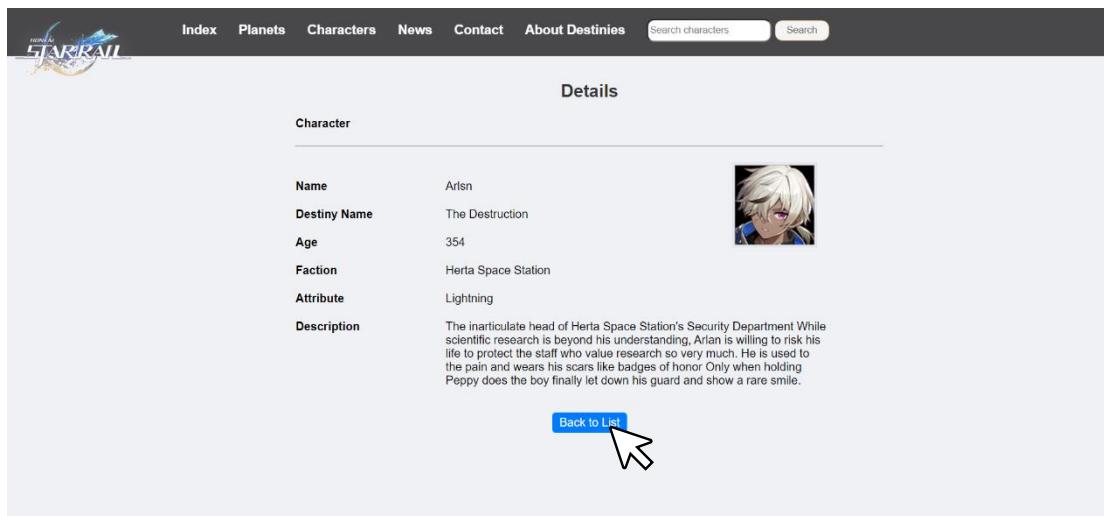
Clicking on it will take you to the Character Compendium page:



* Search, filter, sort, and pagination are all implemented on this page. For detailed instructions on how to use these functions, please refer to sections 3.3 and 3.4. For information on how these functions are implemented, please see section 4.4 Feature Implementation.

The Character Introduction page allows you to access information about all the characters. Clicking on "Details" provides a detailed view of each character's

information:



The screenshot shows the character details page for Arlun. At the top, there is a navigation bar with links to Index, Planets, Characters, News, Contact, and About Destinies. There is also a search bar for characters. The main content area is titled "Details" and "Character". It displays the following information:

Name	Arlun
Destiny Name	The Destruction
Age	354
Faction	Herta Space Station
Attribute	Lightning
Description	The inarticulate head of Herta Space Station's Security Department. While scientific research is beyond his understanding, Arlun is willing to risk his life to protect the staff who value research so very much. He is used to the pain and wears his scars like badges of honor. Only when holding Peppy does the boy finally let down his guard and show a rare smile.

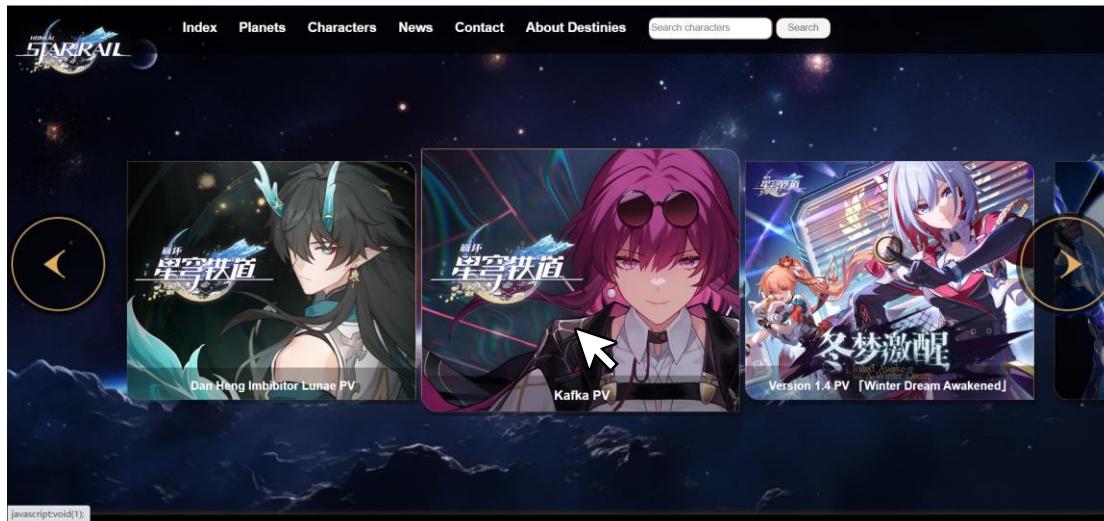
Below the description is a "Back to List" button with a mouse cursor hovering over it.

Clicking "Back to List" will return you to the Character Compendium page.

3.2.4 News

Clicking on the navigation bar will take you to the News page,

Clicking on a news item will lead you to the respective news link:

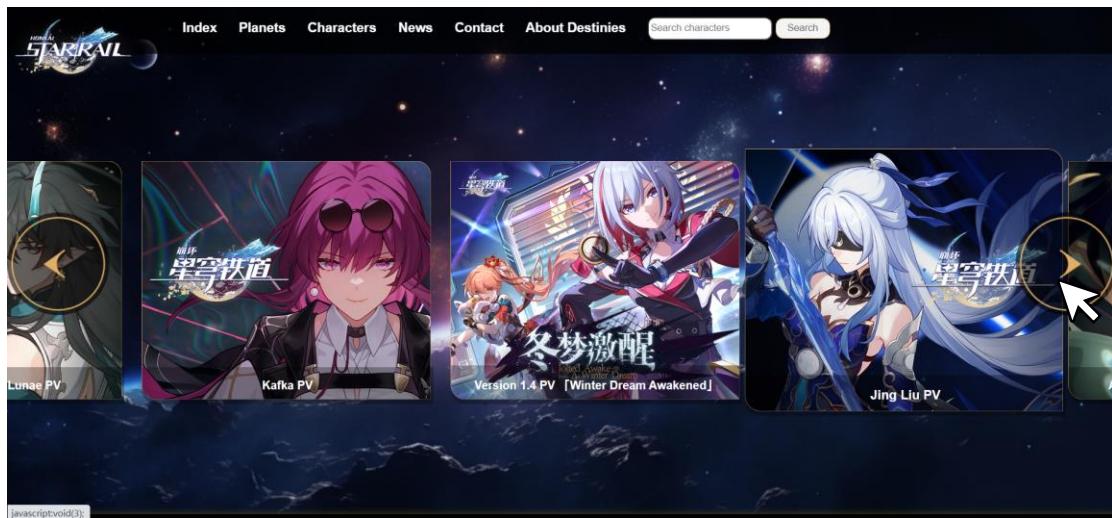


The screenshot shows the news page of the Honkai Star Rail website. The top navigation bar is identical to the character details page. The main content area displays a grid of news items with the following titles and descriptions:

- Dan Hong Imbitor Lunae PV
- Kafka PV
- Version 1.4 PV [Winter Dream Awakened]

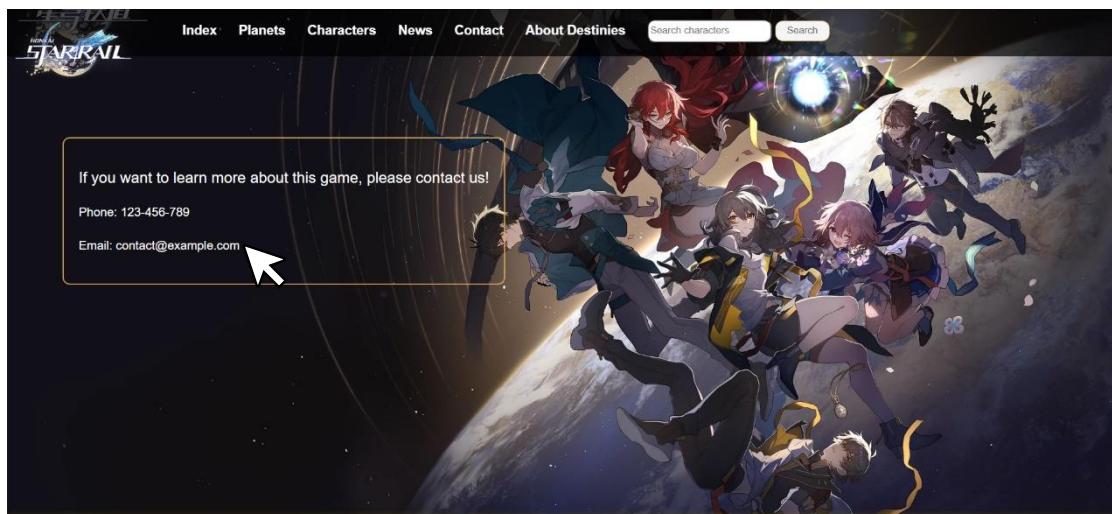
Each news item is accompanied by a thumbnail image and a play button icon. A mouse cursor is hovering over the "Kafka PV" news item.

You can use the left and right arrows to navigate through other news:



3.2.5 Contact

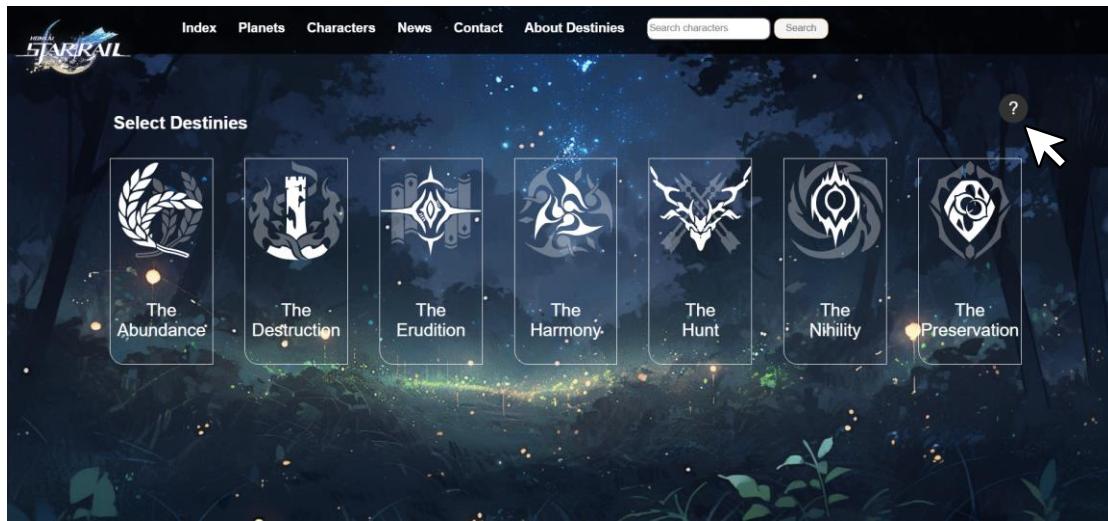
Clicking on the navigation bar will take you to the Contact page:



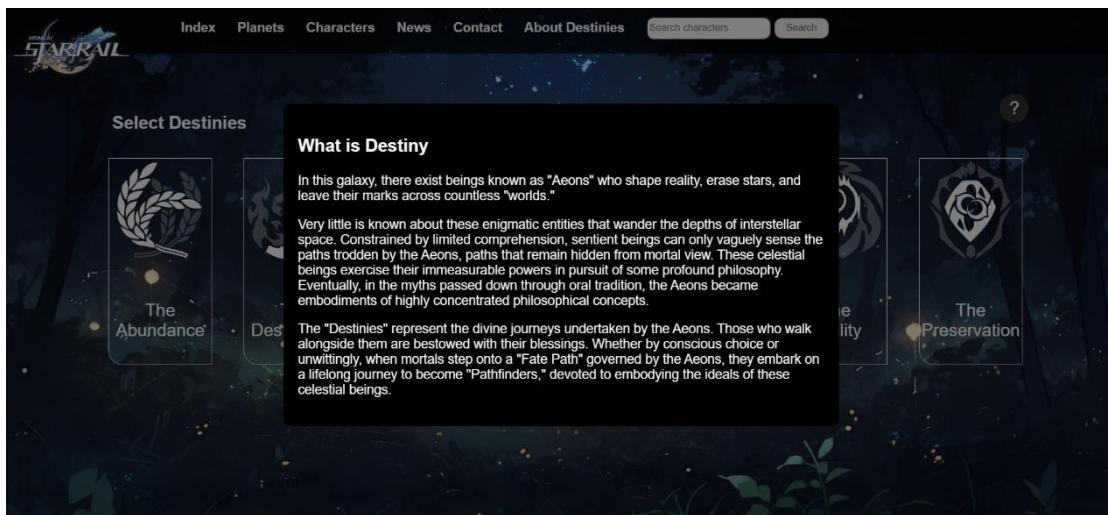
Clicking on the phone or email will directly open the respective application (just an example, actual phone and email do not exist).

3.2.6: About Destiny

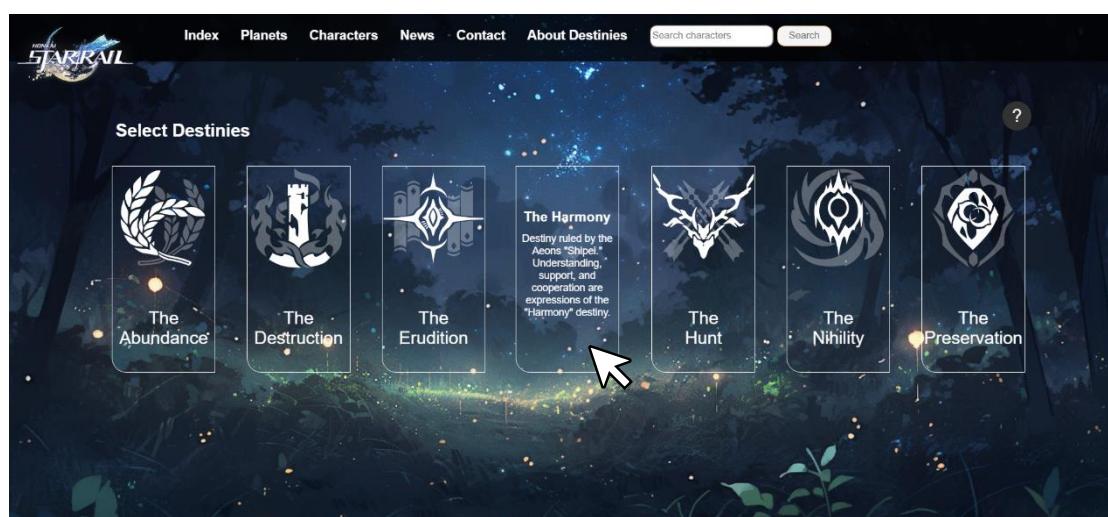
Navigate to the Destiny page through the navigation bar:



Click the question mark in the top right corner to access explanations about the concept of Destiny.



Hovering the mouse over Destiny cards provides specific descriptions of Destiny.



3.3 Search Functionality:

The search box is located on the right side of the navigation bar:



Users can enter keywords to search for characters (which will directly take them to the Character Compendium page):

A screenshot of the Character Encyclopedia page. The page title is "Character Encyclopedia". Below it, a message says "You search for arlsn found 1 characters". There are filter options: "Filter by destiny: All" and "Sort By: Default". A table displays one character: Arlsn, from The Destruction, aged 354, at Herta Space Station, with the attribute Lightning. A "Details" link is next to the attribute. At the bottom, it says "Page 1 of 1" and has a page number "1".

Website search will look for relevant content in character names, ages, factions, attributes, Destinies, and descriptions.

3.4 Sorting and Filtering:

The website supports filtering by Destiny and sorting by age (in ascending or descending order):

Character Encyclopedia

You search for arlsn found 1 characters

Filter by destiny: Sort By: Filter

Select the filter dropdown options and the desired sorting method, then click the "Filter" button to display the corresponding content as per your preferences.

Character Encyclopedia

Showing all 6 characters

Filter by destiny: The Destruction (6) Sort By: Age low to high **Filter**

	Name	Destiny	Age	Faction	Attribute	
	Clara	The Destruction	18	Jarilo-VI	Physics	Details
	Dan Heng Imbibitor Lunae	The Destruction	201	The Xianzhou Luofu	Imaginary Number	Details
	Arlison	The Destruction	354	Herta Space Station	Lightning	Details

Page 1 of 2

1 2

4. Technical Demonstrations

4.1. Models: Explanation of the models created

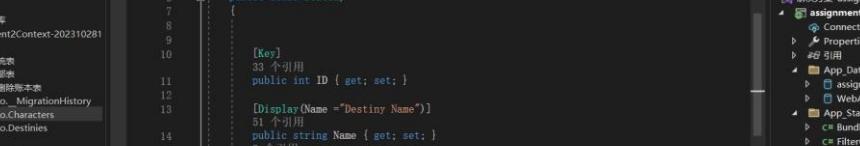
4.1.1. Destiny Model:

The Destiny model is used to represent the destiny of each character (a special concept in the game). This model includes the following attributes:

- ID: A unique identifier, typically used as the primary key.
- Name: The name of the destiny.
- Description: A description of the destiny.
- ImagePath: The path to the destiny's image.
- IsInverted: A boolean value indicating whether the image needs color inversion.
- Characters: A virtual attribute that represents the characters associated with this destiny.

This model is used to manage and display various destiny options for characters and is also linked to the Character model. The relationship between the Destiny model and the

Character model is one-to-many. Below is a screenshot of my Destiny model class:



The screenshot shows the Visual Studio IDE with the assignment2 project open. The left sidebar displays the project structure, including the assignment2Context database and its tables like Characters, Destinies, and MigrationHistory. The code editor shows the Destiny.cs file with the following code:

```
18 个引用
public class Destiny
{
    [Key]
    33 个引用
    public int ID { get; set; }

    [DisplayName = "Destiny Name"]
    51 个引用
    public string Name { get; set; }

    8 个引用
    public string Description { get; set; }

    9 个引用
    16 [  public string ImagePath { get; set; }

    8 个引用
    public bool IsInverted { get; set; }

    1 个引用
    public virtual ICollection<Character> Characters { get; set; }
}
```

The status bar at the bottom indicates 19% completion and shows the current file is assignment2.Models.Destiny. The bottom left shows the output window with some assembly dump information.

4.1.2. Character Model:

The Character model, as part of the website, is used to represent the attributes and features of the characters in the game. This model includes the following attributes:

- ID: This is the unique identifier for the character, used as the primary key.
 - Name: The name of the character.
 - Age: The age of the character.
 - Description: A description of the character.
 - Faction: The faction or organization to which the character belongs.
 - Attribute: The attributes of the character.
 - ImagePath: The image path of the character.
 - DestinyID: A foreign key associated with the Destiny model, used to describe the character's destiny.

The structure of the model defines various attributes of the character for display and management on the website. Below is a screenshot of my character model class:

```

    public class Character
    {
        [Key]
        public int ID { get; set; }
        public string Name { get; set; }
        public int Age { get; set; }
        public string Description { get; set; }
        public string Faction { get; set; }
        public string Attribute { get; set; }
        public string ImagePath { get; set; }
        public int? DestinyID { get; set; }
        public virtual Destiny Destiny { get; set; }
    }

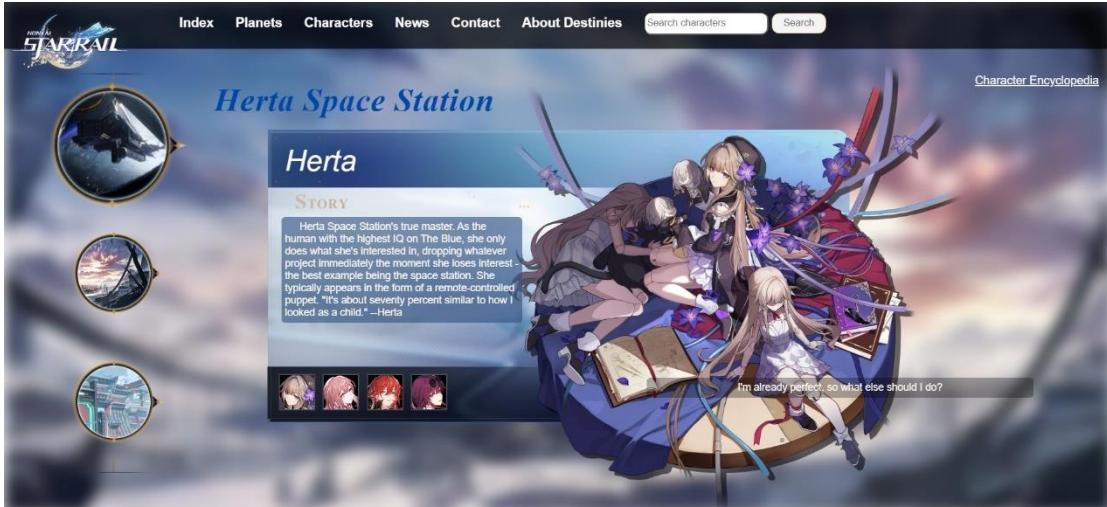
```

4.2. CSS: Overview of the CSS used for styling the website

4.2.1 Color and Fonts:

The website incorporates various clear and legible fonts, including Arial and Pacifico (used for headings), maintaining a consistent font style throughout the entire site. In terms of colors, I have employed a unified color scheme primarily centered around black, gold, and blue. This harmonious color palette ensures consistency across different sections of the website.

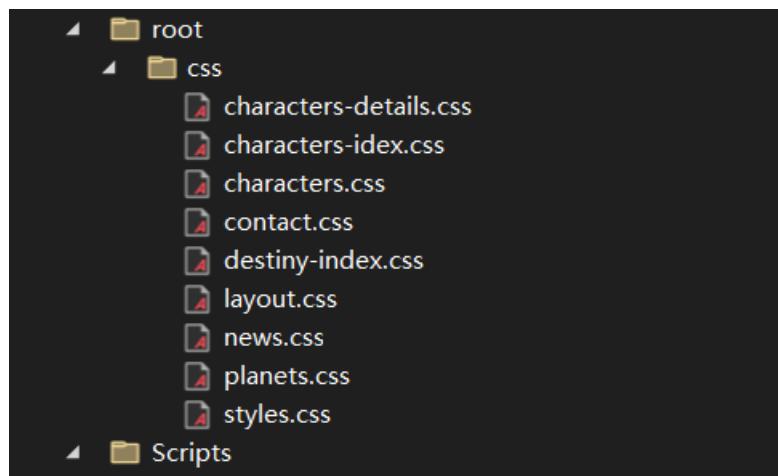
eg1: Character Display Page - Dominated by black and blue as the primary color scheme. Arial is used for paragraph text, and Pacifico is applied for headings.



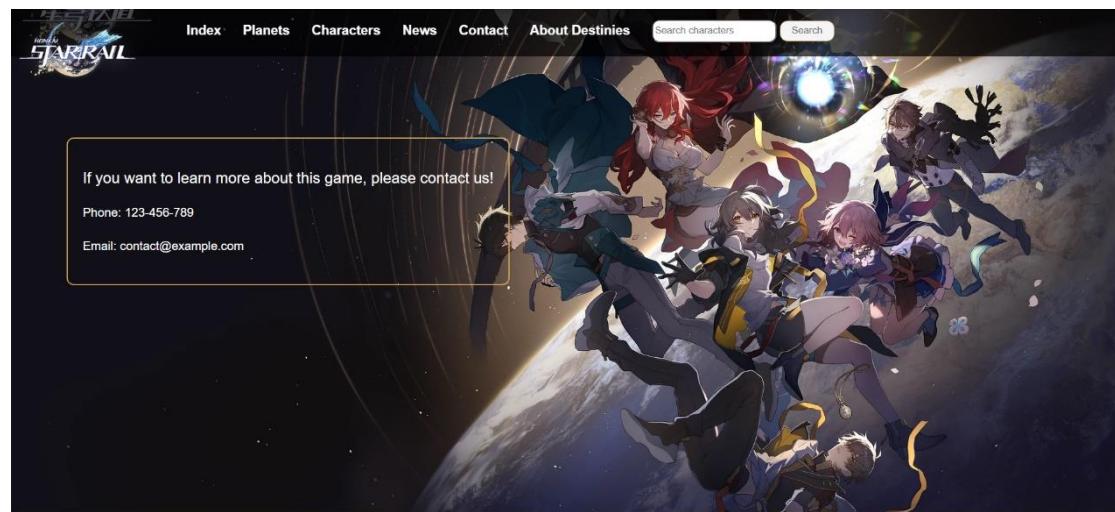
Corresponding Code (Partial):

```
106      [  ]
107      .icon-logo img {
108        |   width: 80%;
109      }
110
111
112      .vertical-line {
113        |   width: 1px;
114        |   height: 40px;
115        |   background-color: #000;
116        |   margin: 0 10px;
117      }
118      .section-title1 {
119        |   position: absolute;
120        |   color: rgb(0, 71, 171);
121        |   top: -173.5px;
122        |   left: 15px;
123        |   transform: translateX(-50%);
124        |   padding: 10px 20px;
125        |   font-size: 44px;
126        |   z-index: 2;
127        |   font-style: italic;
128        |   letter-spacing: 1px;
129        |   font-family: 'Pacifico', 'Times New Roman';
130      }
131      .section-title2 {
```

All CSS files are located here, and the subsequent content will not be displayed for code



eg2: Contact Page - Embraces a black and gold color scheme with Arial being the chosen font for text.



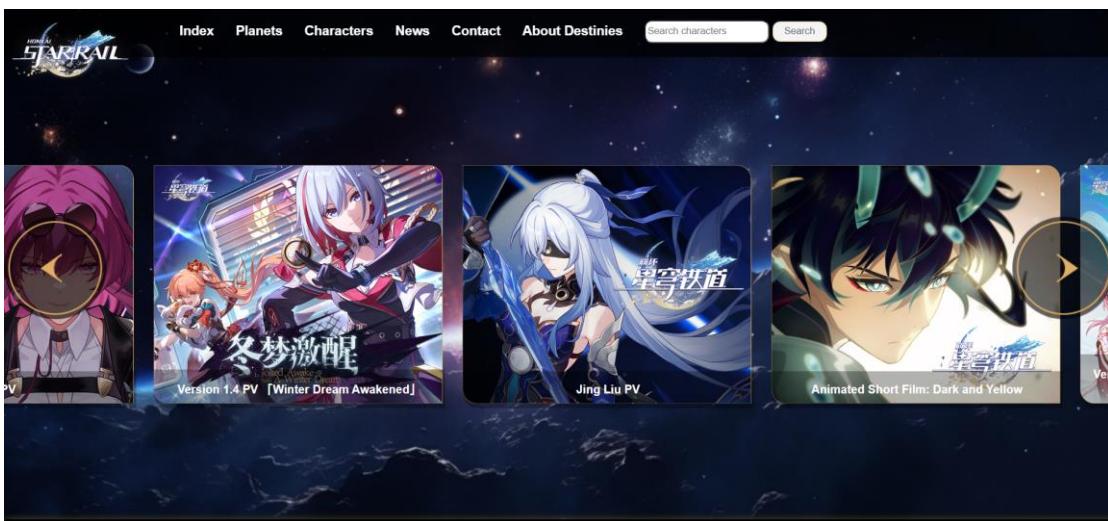
4.2.2 Layout and Spacing:

The website utilizes a grid layout to ensure neat and organized arrangement of page elements, enhancing readability. Additionally, careful adjustments of spacing and margins between elements have been made to provide a comfortable reading and browsing experience.

eg1: Character Display Page - Features a left-side anchor menu and a right-side character display, creating an aesthetically pleasing arrangement of images and text.



eg2: News Page - Utilizes arrow indicators on both sides, maintaining a reasonable spacing between news content in the middle.

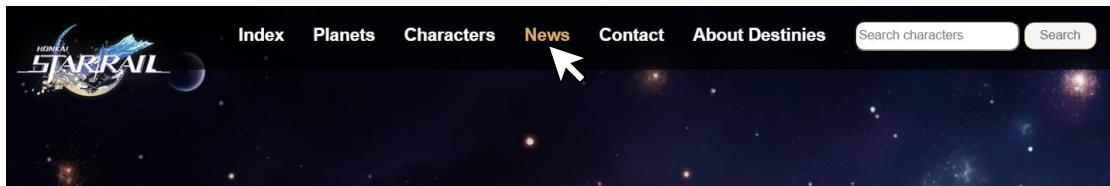


4.2.2 Animations and Transition Effects:

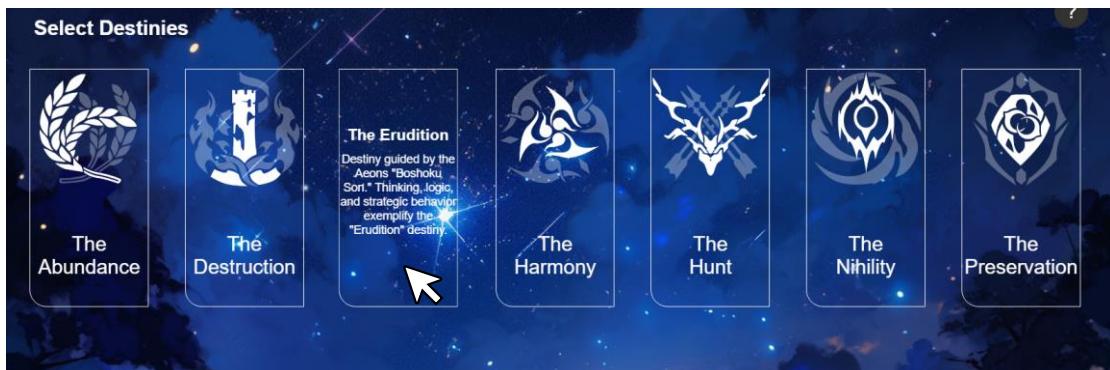
The website leverages CSS animations and transition effects, including hover effects for buttons and image scaling and rotation effects. These animations not only enhance the

website's appeal but also enable users to better understand the changes occurring on the page.

eg1: Navigation Bar - Hyperlinks change color on mouse hover



eg2: Destiny Page - Hovering over Destiny cards triggers a card-flip effect



Corresponding Code (Partial):

```
121  .destiny-front, .destiny-back {
122    width: 100%;
123    height: 100%;
124    border: 1px solid white;
125    /* background-color: hsla(45, 100%, 30%, 0.5); */
126    border-radius: 0 0 20px;
127    position: absolute;
128    backface-visibility: hidden;
129  }
130
131  .destiny-front {
132    z-index: 2;
133  }
134
135  .destiny-back {
136    transform: rotateY(180deg);
137    display: flex;
138    align-items: center;
139    justify-content: space-between;
140  }
141
142  .destiny-back h3 {
143    white-space: nowrap;
144    text-align: center;
145    margin: 0;
146  }
```

eg3: News Section - Hovering over selected news images triggers a zoom-in effect



4.3. JavaScript: Explanation of the JavaScript code used on the site

4.3.1: home-index:

It contains two main functions. The first one automatically plays music when entering the page and stops when leaving. The second function plays a game background introduction segment by segment as you enter the page.

Related JavaScript Code (Partial):

```

1  98 个引用
2  document.addEventListener("DOMContentLoaded", function () {
3      const entranceMusic = document.getElementById("entrance-music");
4
5      entranceMusic.play();
6
7      26 个引用
8      window.addEventListener("beforeunload", function () {
9          entranceMusic.pause();
10     });
11
12     const overlay = document.querySelector(".overlay");
13     const textDisplay = document.getElementById("text-display");
14     const textArray = [
15         "In this galaxy, there exists beings known as the 'Aeons'. They shape reality, erase stars, leaving their mark in",
16         "You—a special traveler, will journey alongside companions inheriting the spirit of 'exploration'. Together, you",
17         "From here, you'll delve into new civilizations, forge connections with new comrades, embarking on fresh adventure",
18         "So, are you prepared to embark on this journey of 'exploration'?",
19         "May this voyage ultimately lead you to the stars."
20     ];
21
22     let currentIndex = 0;
23
24     2 个引用

```

4.3.2: home-planets:

This section primarily accomplishes one function: when clicking on the title of each planet, a popup appears on the right side of the screen. The popup includes the planet's name, image, theme music, and a planet description. Notably, the music automatically plays upon clicking and stops when clicking on the next title.

Related JavaScript Code (Partial):

```
region.addEventListener('click') callback □ popupAudioFirst
98 个引用
1 document.addEventListener("DOMContentLoaded", function () {
2
3     const regions = document.querySelectorAll('.region');
4     const popupContainer = document.getElementById('popup-container');
5     popupContainer.style.display = 'none';
6     let isPopupVisible = false;
7
8     regions.forEach(region => {
9         region.addEventListener('click', (event) => {
10             const title = event.target.dataset.title;
11             const popupContainer = document.getElementById('popup-container');
12             const popupTitle = document.getElementById('popup-title');
13
14             const popupImage = document.getElementById('popup-image');
15
16             const popupAudioFirst = document.getElementById('popup-audio-first');
17             const popupAudioSecond = document.getElementById('popup-audio-second');
18             const popupAudioThird = document.getElementById('popup-audio-third');
19             const popupDescription = document.getElementById('popup-description');
20             popupAudioFirst.pause();
21             popupAudioSecond.pause();
22             popupAudioThird.pause();
23
24             if (title === 'first') {

```

4.3.3: home-characters:

This section comprises three main components:

1. Clicking an anchor point enlarges the image and scrolls the screen to the corresponding section.
 2. When the screen reaches a particular section, the anchor point icon for that section automatically enlarges.
 3. Clicking on a character's headshot in the character display section switches to the corresponding character's detailed information.

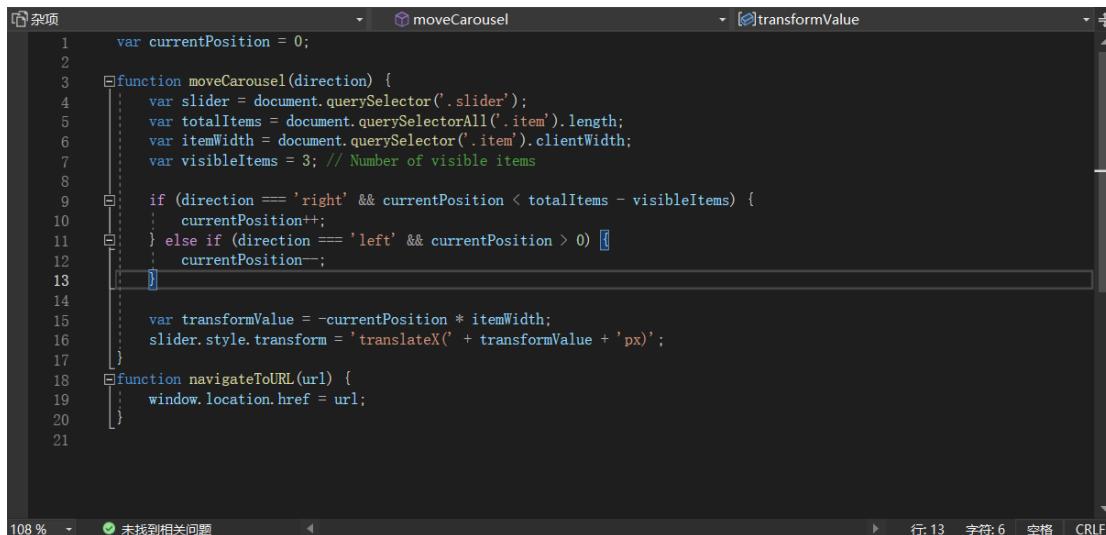
Related JavaScript Code (Partial):

4.3.4 : home-news:

By defining two functions, two functionalities are achieved:

1. Control of a carousel's movement, allowing users to display the next news item by clicking on arrows.
2. Offering navigation to a specified URL, enabling users to click on news items to navigate to the respective news information page.

Related JavaScript Code (Partial):



```
1     var currentPosition = 0;
2
3     function moveCarousel(direction) {
4         var slider = document.querySelector('.slider');
5         var totalItems = document.querySelectorAll('.item').length;
6         var itemWidth = document.querySelector('.item').clientWidth;
7         var visibleItems = 3; // Number of visible items
8
9         if (direction === 'right' && currentPosition < totalItems - visibleItems) {
10             currentPosition++;
11         } else if (direction === 'left' && currentPosition > 0) {
12             currentPosition--;
13         }
14
15         var transformValue = -currentPosition * itemWidth;
16         slider.style.transform = 'translateX(' + transformValue + 'px)';
17     }
18
19     function navigateToURL(url) {
20         window.location.href = url;
21     }

```

4.3.5: destiny:

This section mainly accomplishes one function. When the user clicks the question mark in the top right corner of the screen, a popup appears in the center of the screen to explain relevant concepts. Clicking the popup again makes it disappear.

Related JavaScript Code (Partial):



```
const questionMark = document.querySelector(".question-mark");
const popup = document.getElementById("popup");

questionMark.addEventListener("click", function (event) {
    popup.style.display = (popup.style.display === "none" || popup.style.display === "") ? "block" : "none";
    event.stopPropagation();
});

document.addEventListener("click", function (event) {
    if (popup.style.display !== "none") {
        popup.style.display = "none";
    }
});

```

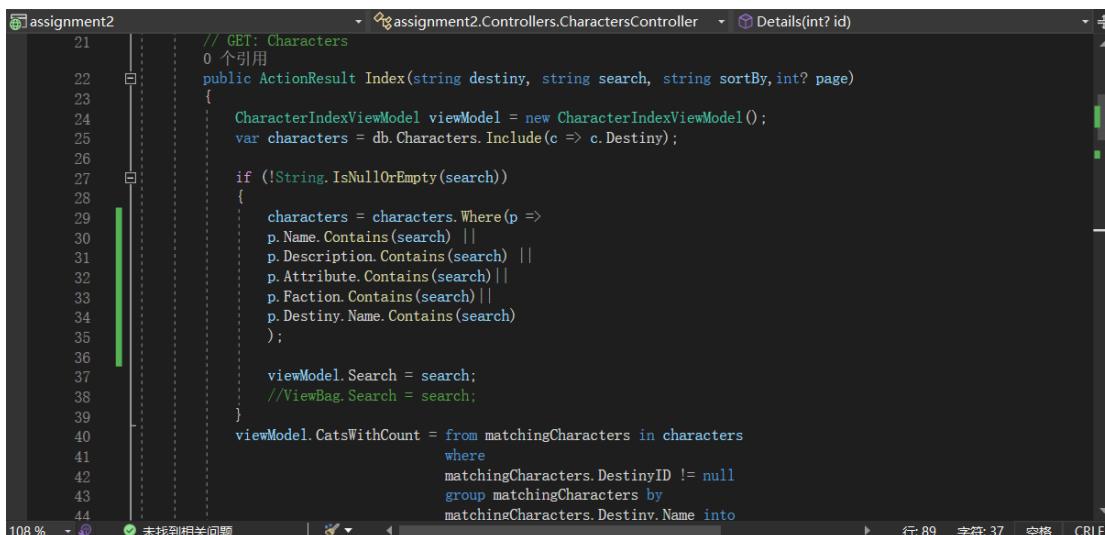
4.4 Feature Implementation

4.4.1 Search Function:

Brief Introduction: The search function allows users to find characters on the website based on specific keywords.

Implementation : When a user enters search keywords in the text box and clicks the "Search" button, a form submission is triggered. This submission causes the page to refresh, including the search keywords in the URL, ultimately calling the backend's Index action method. This method filters characters in the database, finding related results containing the search keywords, and passes these results to the view for display.

Controller Interface: Searching by character name, age, affiliation, destiny, and attributes:



The screenshot shows a code editor with a C# file named 'assignment2.Controllers.CharactersController.cs'. The code is for the 'Index' action method, which handles a GET request for characters. It includes logic to filter characters based on a search query (search) and to calculate the count of characters for each destiny. The code uses LINQ queries and includes annotations for the controller and action.

```
assignment2
assignment2.Controllers.CharactersController
Details(int? id)

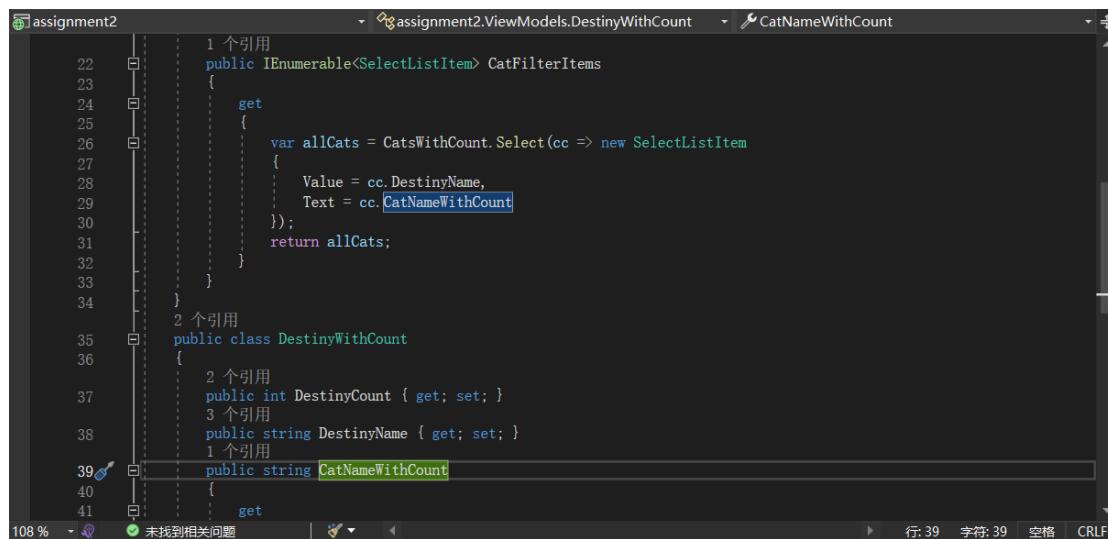
21 // GET: Characters
22 0 个引用
23 public ActionResult Index(string destiny, string search, string sortBy, int? page)
24 {
25     CharacterIndexViewModel viewModel = new CharacterIndexViewModel();
26     var characters = db.Characters.Include(c => c.Destiny);
27
28     if (!String.IsNullOrEmpty(search))
29     {
30         characters = characters.Where(p =>
31             p.Name.Contains(search) ||
32             p.Description.Contains(search) ||
33             p.Attribute.Contains(search) ||
34             p.Faction.Contains(search) ||
35             p.Destiny.Name.Contains(search)
36         );
37
38         viewModel.Search = search;
39     }
40
41     viewModel.CatsWithCount = from matchingCharacters in characters
42                               where
43                               matchingCharacters.DestinyID != null
44                               group matchingCharacters by
45                               matchingCharacters.Destiny.Name into
```

4.4.2 Filter Function:

Brief Introduction: The filter function allows users to limit the result set based on a selected target, i.e., destiny, and displays the number of characters corresponding to each destiny.

Implementation : By performing LINQ queries and grouping data, a filtering function is implemented based on the user's selected target. Users can select target options in the view and trigger form submission by clicking the submit button. The controller processes the selected conditions and filters data from the database that meets the target requirements, ultimately presenting the filtered results in the view.

ViewModel Code (Partial):



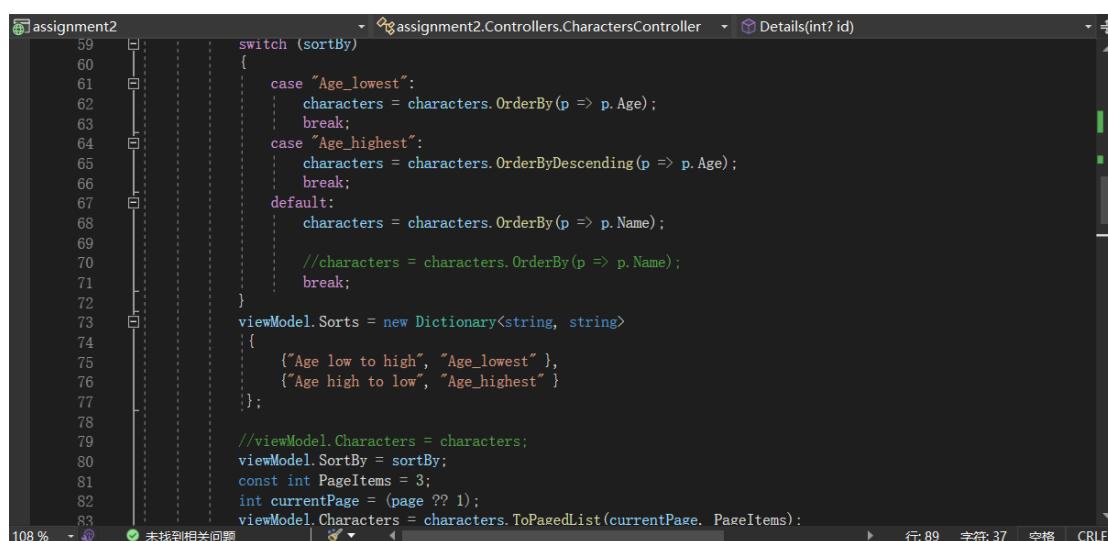
```
assignment2 1 个引用
22  public IEnumerable<SelectListItem> CatFilterItems
23  {
24  get
25  {
26  var allCats = CatsWithCount.Select(cc => new SelectListItem
27  {
28  Value = cc.DestinyName,
29  Text = cc.CatNameWithCount
30  });
31  }
32  }
33  }
34  2 个引用
35  public class DestinyWithCount
36  {
37  2 个引用
38  public int DestinyCount { get; set; }
39  3 个引用
40  public string DestinyName { get; set; }
41  1 个引用
42  public string CatNameWithCount
43  {
44  get
45  }
```

4.4.3 Sorting Feature:

Brief Introduction: The sorting feature allows users to arrange the results based on age, either in ascending or descending order.

Implementation: Users can choose different sorting options within the view, which include sorting by age from low to high, high to low, or the default ascending order by name. Depending on the user's selection, the code performs the corresponding sorting operation on the "characters" dataset and stores the sorted results in "viewModel.Characters." It also stores the user's chosen sorting method in "viewModel.SortBy" to maintain the selection state in the view. This way, users can sort and browse the data according to their preferences.

Controller Section Code:



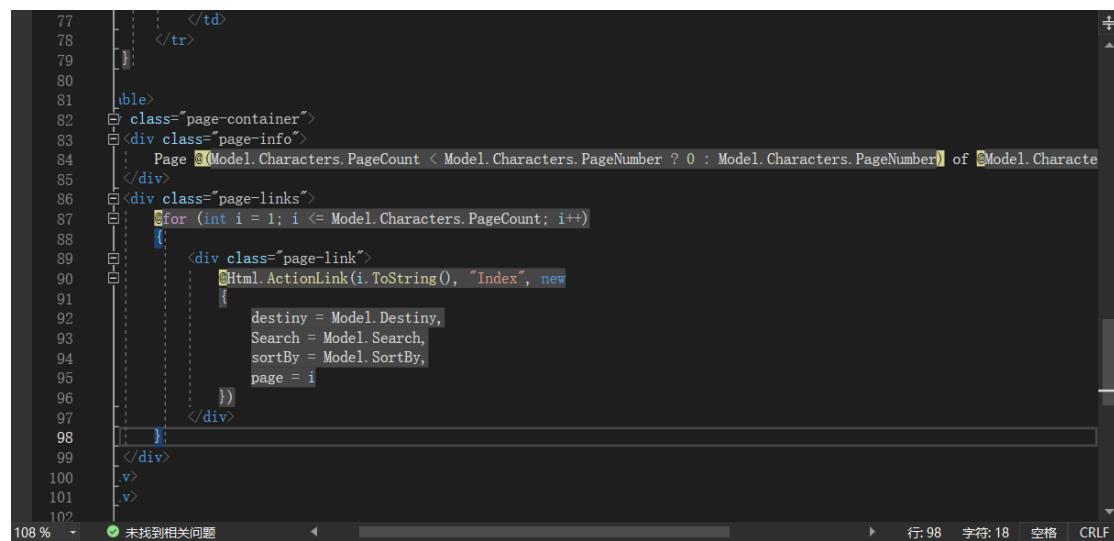
```
assignment2 59  switch (sortBy)
60  {
61  case "Age_lowest":
62  characters = characters.OrderBy(p => p.Age);
63  break;
64  case "Age_highest":
65  characters = characters.OrderByDescending(p => p.Age);
66  break;
67  default:
68  characters = characters.OrderBy(p => p.Name);
69  //characters = characters.OrderBy(p => p.Name);
70  break;
71  }
72  viewModel.Sorts = new Dictionary<string, string>
73  {
74  {"Age low to high", "Age_lowest"}, 
75  {"Age high to low", "Age_highest"} 
76  };
77  //viewModel.Characters = characters;
78  viewModel.SortBy = sortBy;
79  const PageItems = 3;
80  int currentPage = (page ?? 1);
81  viewModel.Characters = characters.ToPagedList(currentPage, PageItems);
82
83 }
```

4.4.4 Pagination Feature:

Brief Introduction: The pagination feature allows users to navigate different sections of extensive data to enhance the user experience.

Implementation: Firstly, the current page information is displayed on the page, including the current page number and the total number of pages. Then, a loop generates links at the bottom of the page, with each link corresponding to a page number. These links are created using the ActionLink method and pass the current selections, including destiny, search keywords (Search), sorting method (sortBy), and the relevant page information. In the controller, the code processes the character dataset for pagination, storing the results in "viewModel.Characters," and setting the current page number and sorting method. Finally, the view is returned to the user. This allows users to browse and navigate through paginated data.

Controller View Code:



```
77     </td>
78   </tr>
79   </tbody>
80 </table>
81 <div class="page-container">
82   <div class="page-info">
83     Page @(Model.Characters.PageCount < Model.Characters.PageNumber ? 0 : Model.Characters.PageNumber) of @(Model.Characters.TotalCount)
84   </div>
85   <div class="page-links">
86     @for (int i = 1; i <= Model.Characters.PageCount; i++)
87     {
88       <div class="page-link">
89         @Html.ActionLink(i.ToString(), "Index", new
90         {
91           destiny = Model.Destiny,
92           Search = Model.Search,
93           sortBy = Model.SortBy,
94           page = i
95         })
96       </div>
97     }
98   </div>
99 </div>
100 <div>
101 </div>
102
```