

UNCOVERING THE GAMING INDUSTRY'S HIDDEN GEMS: A COMPREHENSIVE  
ANALYSIS OF VIDEO GAME SALES

*Project submitted to Bharathiyar University for Naan Mudalvan scheme*

*for the award of the Degree of*

**B.Sc. MATHEMATICS**

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**ERODE-638 004**

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# **1. INTRODUCTION**

## ***1.1 Overview***

*This project deals about the **Uncovering The Gaming Industry's Hidden gems: A Comprehensive Analysis Of Video Game Sales.** The video game industry **encompasses the development, marketing, and monetization of video games.** The industry encompasses dozens of job disciplines and thousands of jobs worldwide. The gaming industry is **one of the most exciting industries in tech** because of its importance to culture, entertainment and technological advancement. PC, console and mobile gaming companies are using the latest in tech to bring their games to the screens of more than three billion people.*

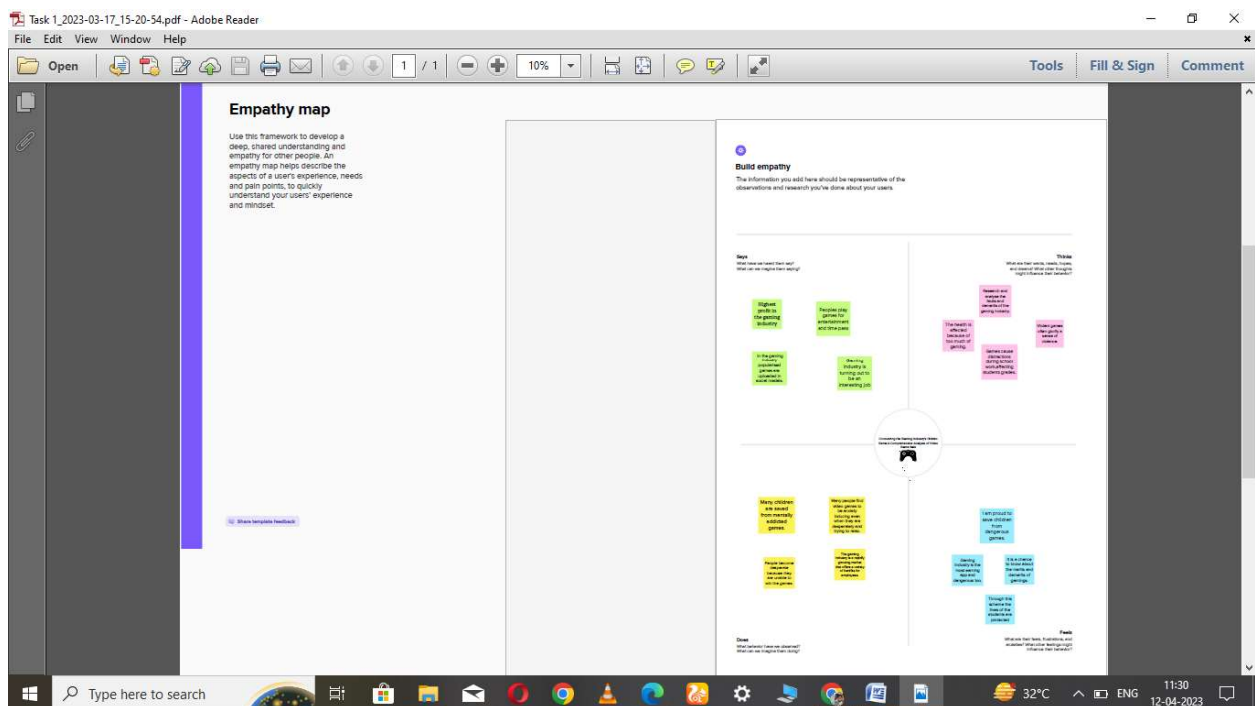
## ***1.2 Purpose***

*The video game industry encompasses the development, marketing, and monetization of video games. The industry encompasses dozens of job disciplines and thousands of jobs worldwide.*

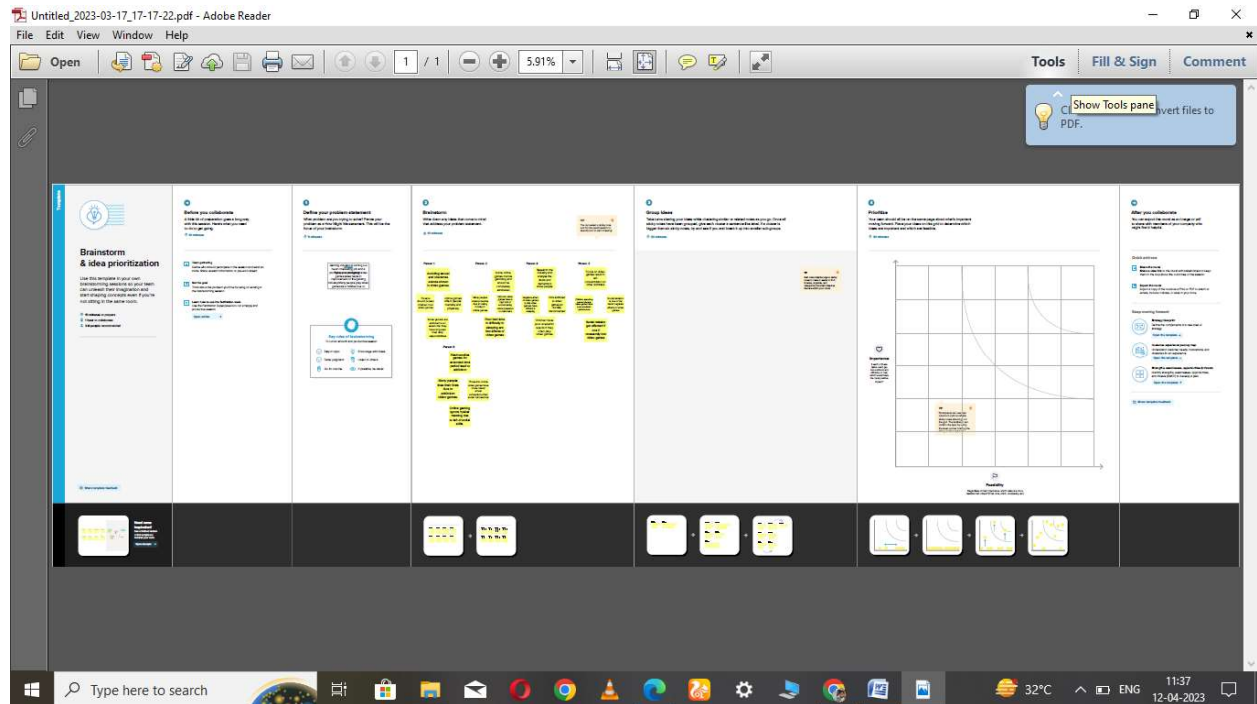
## 2. PROBLEM DEFINITION & DESIGN

### THINKING

#### 2.1 Empathy Map

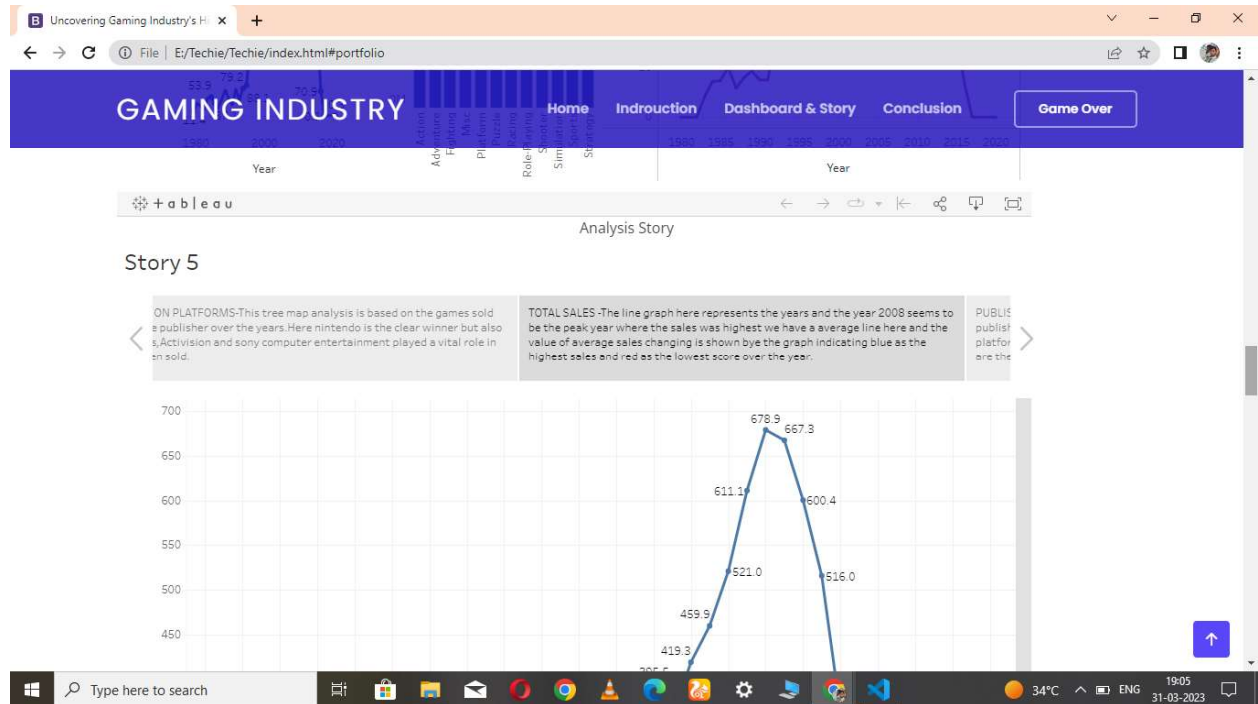


## 2.2 Ideation & Brainstorming



### 3. RESULT

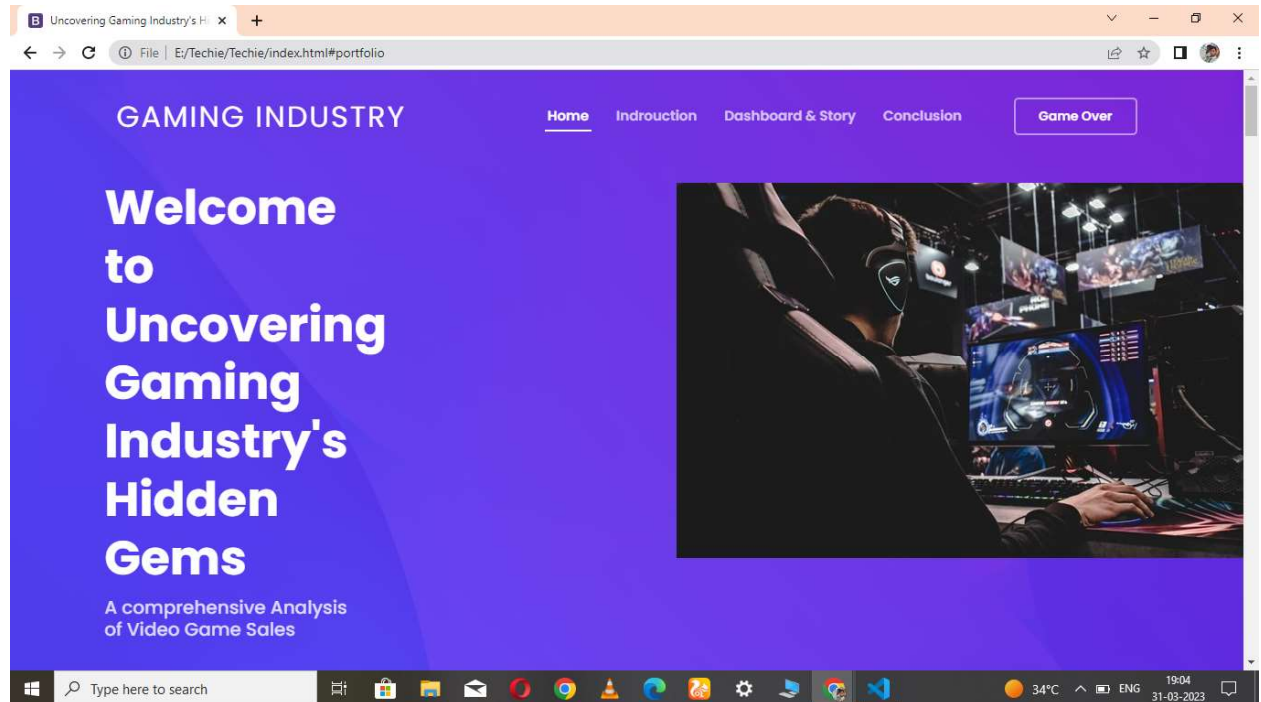
## STORY



# DASHBOARD



# WEB INTEGRATION



#### 4. **ADVANTAGES & DISADVANTAGES**

##### *Advantages:*

1. **Extremely high engagement.** Engagement is one of the most important marketing metrics, as it allows us to understand to what extent users are involved with your brand. While most apps hold users an average of less than 1 minute, a game manages to hold them, on average, between 3 and 10 minutes- which means much more time attached to your brand and subsequently more retention of it.
2. **High quality content.** I'm sure you already know that *content is the most important component of digital media* and that there's nothing that users value most. This content is not necessarily textual or audiovisual; games are high-quality and highly valued content by users- particularly if the audience is younger and more technologically oriented.
3. **Interactive Brand Storytelling.** Before we explain *the importance of Brand Storytelling*; it turns out that a good game can be Storytelling, one in which the user is not a passive participant, but an active part of the story to be told. In other words, the benefits of Storytelling are multiplied exponentially because they allow the user to engage directly with your brand.
4. **Better message retention.** This is a consequence of a great game, created specifically thinking about its message; the already mentioned case of Chipotle is a quintessential example, since the game conveys the message so well that the brand was completely linked to the notion of sustainability. If you're trying to convey a strong and unforgettable message, a game is an effective way to do so.
5. **Loyalty through entertainment.** Don't neglect the fun factor- thanks to it, you can turn curious people into costumers, and costumers into fans. Games, by nature, generate immense loyalty and even create communities around them; now, just



*imagine the impact of a game based on your brand. Suddenly, you have a legion of highly faithful followers, not only to your game, but especially to your brand.*

### ***Dis Advantages:***

- 1. Depression and social anxiety.*
- 2. Lack of motivation.*
- 3. Poor emotional regulation.*
- 4. Poor sleep hygiene.*
- 5. Muscle loss and fat gain.*
- 6. Dehydration.*
- 7. Exhaustion.*

## ***5. APPLICATIONS***

*These main areas of game jobs are **game design, game art, game programming, and game production.***

## ***6. CONCLUSIONS***

*The main contribution of this paper includes four parts. First, based on the game industry value chain, we provide a comprehensive literature review about game analytics. Second, based on the coding system, we overview the current research status and point out the potential research trends about game analytics. Third, we also discuss the main purposes of using game analytics in the game industry and the related algorithms used for game prediction. Finally, we present the research gaps and also potential reasons why these research gaps exist. This research is valuable as a baseline for future research in this area.*

## **7. FUTURE SCOPE**

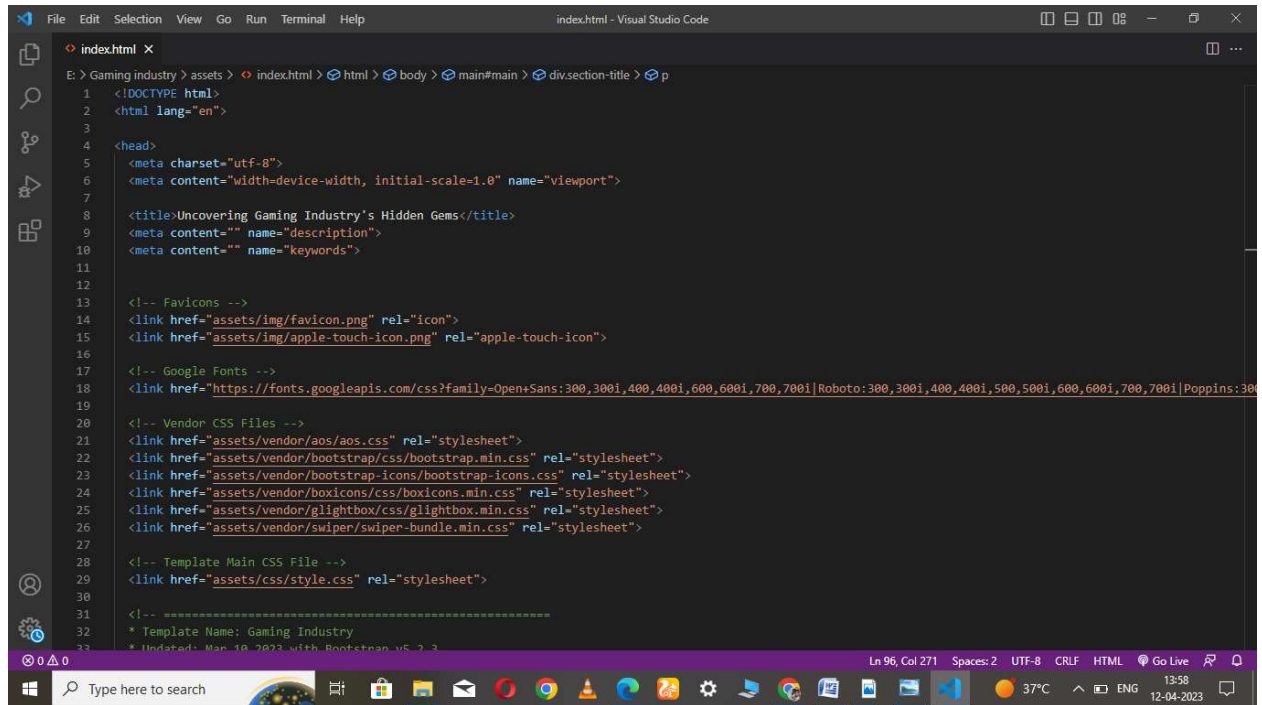
*With the rapid development of the mobile game, it takes up the largest share in the game industry. As most of the mobile games are free, players can download at any time. Hence, for freemium games, the revenue is mainly from game items, such as In-App Purchase (IAP) or advertising. Drachen et al. Through a case study of more than 200,000 players, analyze the relationship between the social features and the revenue in freemium casual mobile games. According to their research, classifier and regression models evaluate the impact of social interaction in casual games for the whole player's life-cycle value. The final results show that social activities are not associated with the trend towards advanced players, but social activities will improve the game revenue.*

*As for freemium games, there is a big difference between the payment players who pay for IAP and the Non-payment players. Non-payment players consist of the majority of freemium players, which leads to highly uneven purchases in mobile games. The key challenge for mobile game developers is to reduce the churn rate and increase players, not only by improving the retention rate, but also by considering the changes from the junior players to senior players. A related goal is to increase player's life-cycle value (LTV) due to the significant increase in user acquisition costs for mobile applications in recent years. Considering the user acquisition costs and the market promotion fee continue to increase, the research to improve the game revenue is essential for game developers and publishers from the game industry side.*

*Alomari et al. extract 31 features by a decision tree. The ten most important features for game success are found, which include the inviting friends' feature, skill tree, leaderboard, Facebook, time skips, request friend help, event offers, customizable, soft currency, unlock new content. The results benefit game developers in increasing their revenue. The study also concludes that the highly related factor to revenue is the daily active user. Besides this, other features will also play a significant role in game success, such as culture, lifestyle, and loyalty to game brand and promotion. Hsu et al. present a novel and intuitive market concept called indicator products used to analyze in-game purchases. Such kinds of researches benefit game designers and game researchers to observe player behaviors and improve game revenue.*

## 8. APPENDIX

### *Source Code:*



```
index.html - Visual Studio Code
index.html X
E: > Gaming industry > assets > index.html > html > body > main#main > div#section-title > p
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="utf-8">
6   <meta content="width=device-width, initial-scale=1.0" name="viewport">
7
8   <title>Uncovering Gaming Industry's Hidden Gems</title>
9   <meta content="" name="description">
10  <meta content="" name="keywords">
11
12
13  <!-- Favicons -->
14  <link href="assets/img/favicon.png" rel="icon">
15  <link href="assets/img/apple-touch-icon.png" rel="apple-touch-icon">
16
17  <!-- Google Fonts -->
18  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Roboto:300,300i,400,400i,500,500i,600,600i,700,700i|Poppins:300,300i,400,400i,500,500i,600,600i,700,700i" rel="stylesheet">
19
20  <!-- Vendor CSS Files -->
21  <link href="assets/vendor/aos/aos.css" rel="stylesheet">
22  <link href="assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
23  <link href="assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
24  <link href="assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
25  <link href="assets/vendor/glightbox/css/glightbox.min.css" rel="stylesheet">
26  <link href="assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">
27
28  <!-- Template Main CSS File -->
29  <link href="assets/css/style.css" rel="stylesheet">
30
31  <!-- =====
32  * Template Name: Gaming Industry
33  * Updated: Mar 10, 2023 with Bootstrap v5.2.3
34  =====>
```

Ln 96, Col 271 Spaces: 2 UTF-8 CRLF HTML Go Live 13:58 12-04-2023

```
File Edit Selection View Go Run Terminal Help index.html - Visual Studio Code
index.html X
E: > Gaming industry > assets > index.html > html > body > main#main > div.section-title > p
32 * Template Name: Gaming Industry
33 * Updated: Mar 10 2023 with Bootstrap v5.2.3
34 * Template URL: https://bootstrapmade.com/techie-free-skin-bootstrap-3/
35 * Author: Alan_Jack!
36 * License: https://bootstrapmade.com/license/
37 ===== -->
38 </head>
39
40 <body>
41
42
43
44
45 <!-- ===== Header ===== -->
46 <header id="header" class="fixed-top">
47   <div class="container d-flex align-items-center justify-content-between">
48     <h1 class="logo"><a href="index.html">Gaming Industry</a></h1>
49     <!-- Uncomment below if you prefer to use an image logo -->
50     <!-- <a href="index.html" class="logo"></a>-->
51
52     <nav id="navbar" class="navbar">
53       <ul>
54         <li><a class="nav-link scrollto active" href="#hero">Home</a></li>
55         <li><a class="nav-link scrollto" href="#services">Indrouction</a></li>
56         <li><a class="nav-link scrollto" href="#portfolio">Dashboard & Story</a></li>
57
58         </li>
59         <li><a class="nav-link scrollto" href="#contact">Conclusion</a></li>
60         <li><a class="getstarted scrollto" href="#about">Game Over</a></li>
61       </ul>
62       <i class="bi bi-list mobile-nav-toggle"></i>
63     </nav><!-- .navbar -->
```

```
File Edit Selection View Go Run Terminal Help index.html - Visual Studio Code
index.html X
E:\Gaming industry > assets > index.html > html > body > main#main > div.section-title > p
63 </nav><!-- .navbar -->
64
65 </div>
66 </header><!-- End Header -->
67
68 <!-- ===== Hero Section ===== -->
69 <section id="hero" class="d-flex align-items-center">
70
71 <div class="container-fluid" data-aos="fade-up">
72 <div class="row justify-content-center">
73 <div class="col-xl-5 col-lg-6 pt-3 pt-lg-0 order-2 order-lg-1 d-flex flex-column justify-content-center">
74 <h1>Welcome to Uncovering Gaming Industry's Hidden Gems</h1>
75 <h2>A comprehensive Analysis of Video Game Sales</h2>
76
77 </div>
78 <div class="col xl 4 col lg 6 order 1 order lg 2 hero img" data-aos="zoom in" data-aos delay="150">
79 
80 </div>
81 </div>
82 </div>
83
84 
85 </section><!-- End Hero -->
86
87
88 <main id="main">
89
90 <!-- ===== About Section ===== -->
91
92
93
94 <div class="section-title">
95 <h3>THE GAMING INDUSTRY / ABOUT</h3>
```

```
File Edit Selection View Go Run Terminal Help index.html - Visual Studio Code
index.html X
E:\Gaming industry > assets > index.html > html > body > main#main > div.section-title > p
95 <h2>INTRODUCTION!</h2>
96 <p>Video games are popular all over the world. They are enjoyed by all ages. Video game industry is huge and the spending on video games per year is huge too
97
98
99
100
101 
102 <section id="about" class="about">
103 <div class="container">
104
105 <div class="row">
106 <div class="col-lg-6 order-1 order-lg-2" data-aos="zoom-in" data-aos-delay="150">
107
108 </div>
109 <div class="col-lg-6 pt-4 pt-lg-0 order-2 order-lg-1 content" data-aos="fade-right">
110 <h
111
112
113
114
115
116
117
118
119
120 <div>
121 </div>
122
123
124 </div>
125 </div>
126
Ln 96, Col 271 Spaces: 2 UTF-8 CRLF HTML Go Live
Type here to search 37°C 14:00 12-04-2023
```

```
index.html x
E:\Gaming industry> assets > index.html > html > body > main#main > divsection-title > p
127
128     </div>
129
130     <d
131       </div>
132     </div>
133
134   </div>
135
136   </div>
137 </div>
138
139 </div>
140
141 </div>
142
143
144 </section><!-- End Services Section -->
145
146 <!-- ===== Features Section ===== -->
147 <section id="features" class="features">
148   <div class="container" data-aos="fade-up">
149
150     <div class="section-title">
151       <h2>overview of the project</h2>
152     <p> In this project, the main goal was to analyze the sales of video games in different regions. The regions are North America, Europe, Japan, other co
153   </div>
154
155   <div class="row">
156     <div class="col-lg-6 order-2 order-lg-1 d-flex flex-column align-items-lg-center">
157       <div class="icon-box mt-5 mt-lg-0" data-aos="fade-up" data-aos-delay="100">
158         <i class="bx bx-receipt"></i>
```

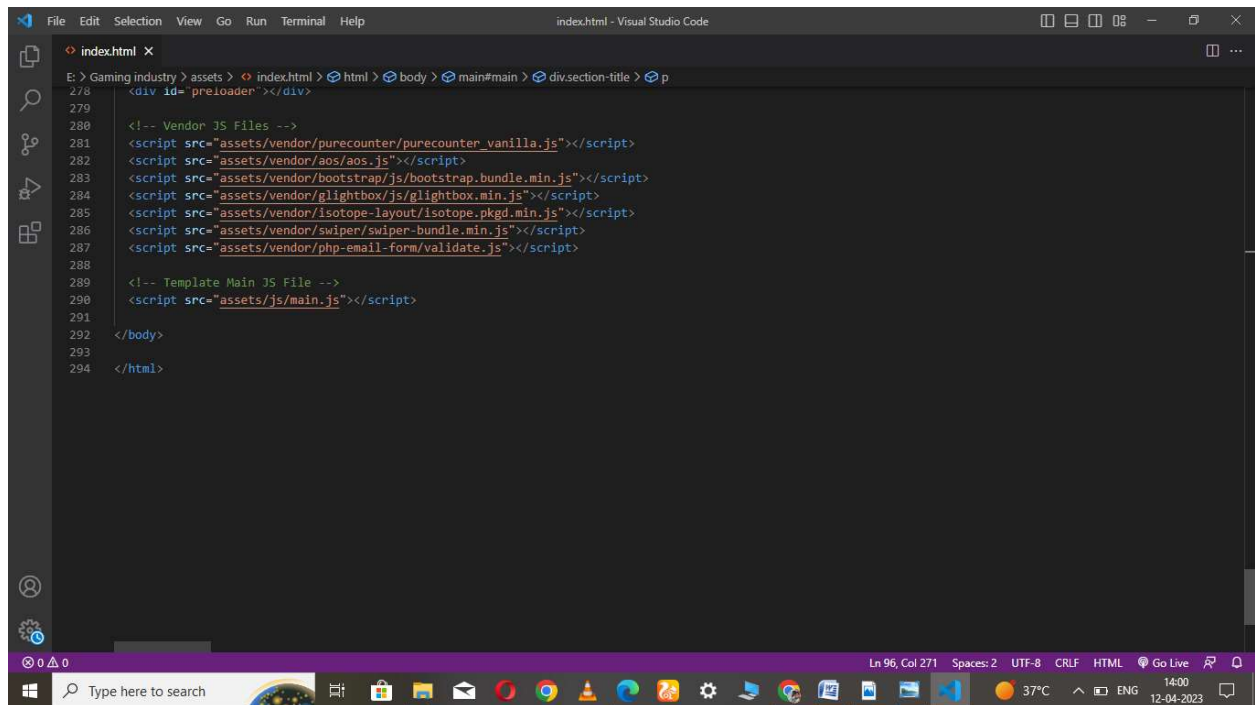
```
File Edit Selection View Go Run Terminal Help index.html - Visual Studio Code
index.html X
E:\Gaming industry> assets > index.html > html > body > main#main > div.section-title > p
158 <i class="bx bx-receipt"></i>
159 <h4>Game data visualization</h4>
160 <p>The game data visualization is an essential part of game analytics. Through the visualization of the data, we can intuitively analyze the behavior
161 </div>
162 <div class="icon-box mt-5" data-aos="fade-up" data-aos-delay="200">
163 <i class="bx bx-cube-alt"></i>
164 <h4>Game development analytics challenge</h4>
165 <p>At present, most game analytics research for game development focuses on ensuring that the gameplay is sufficient to meet the player requirements
166 </div>
167 <div class="icon-box mt-5" data-aos="fade-up" data-aos-delay="300">
168 <i class="bx bx-images"></i>
169 <h4>Game prediction analytics</h4>
170 <p>Game prediction analytics uses historical data to predict future events. Typically, historical data is used to build a mathematical model that ca
171 </div>
172 <d
173 </div>
174 </div>
175 <div class="image col-lg-6 order-1 order-lg-2 " data-aos="zoom-in" data-aos-delay="100">
176 
177 </div>
178 </div>
179
180 </div>
181 </section><!-- End Features Section -->
182
183 <!-- ===== Dashboard & Story section-->
184 >
185 <section id="Dashboard & Story" class="Dashboard & Story">
186 <div class="container" data-aos="fade-up">
187
188 <div class="section-title">
189
190
```



```
File Edit Selection View Go Run Terminal Help index.html - Visual Studio Code
index.html X
E:\Gaming industry> assets > index.html > html > body > main#main > div.section-title > p
189
190
191
192 <center><p>Analysis Dashboard</p></center>
193 <div class='tableauPlaceholder' id='viz1680242322538' style='position: relative'><noscript><a href='#'><img alt='Dashboard 1 ' src='https://&#47;&#47;p
194 <center><p>Analysis Story</p></center>
195 <div class='tableauPlaceholder' id='viz1680242395013' style='position: relative'><noscript><a href='#'><img alt='Story 5 ' src='https://&#47;&#47;publ
196
197
198 </div class="row"
199
200
201 <div>
202 </div>
203 </div>
204 </section><!-- End Dashboard & Story -->
205
206
207
208
209
210
211
212
213
214
215
216 <!-- ***** Conclusion Section ***** -->
217 <section id="contact" class="contact section-bg">
218 <div class="container" data-aos="fade-up">
219
220 <div class="section-title">
221 <h3>Conclusion</h3>
222
```

```
File Edit Selection View Go Run Terminal Help index.html - Visual Studio Code
index.html X
E:\Gaming industry > assets > index.html > html > body > main#main > div.section-title > p
220 <div class="section-title">
221 <h2>Conclusion</h2>
222 <p>Analysing the above data we can say that action games on DC or playstation for that matter are the most popular and are the ones responsible for maxim
223 </div>
224 <center></center>
225 </div>
226
227 </div>
228
229 </div>
230
231 <div class="row">
232
233
234
235 </div>
236 </section><!-- End Contact Section -->
237
238 </main><!-- End #main -->
239
240 </p>
241 </div>
242
243 <
244 </div>
245
246 </div>
247 </div>
248 </div>
249
250 <div class="container">
251
252 <div class="copyright-wrap d-md-flex justify-content-between">
```

```
index.html - Visual Studio Code
File Edit Selection View Go Run Terminal Help
index.html X
E:\Gaming industry> assets > index.html > html > body > main#main > div#section-title > p
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Ln 96, Col 271 Spaces: 2 UTF-8 CRLF HTML Go Live
Type here to search 37°C 14:00 12-04-2023
```



The image shows a screenshot of the Visual Studio Code editor interface. The main editor window displays the content of an `index.html` file. The file structure is shown in the breadcrumb at the top: `E:\Gaming industry\assets\index.html\html\body\main#main\div.section-title\p`. The code in the editor is as follows:

```
278 <div id="preload"></div>
279
280 <!-- Vendor JS Files -->
281 <script src="assets/vendor/purecounter/purecounter_vanilla.js"></script>
282 <script src="assets/vendor/aos/aos.js"></script>
283 <script src="assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
284 <script src="assets/vendor/lightbox/js/lightbox.min.js"></script>
285 <script src="assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
286 <script src="assets/vendor/swiper/swiper-bundle.min.js"></script>
287 <script src="assets/vendor/php-email-form/validate.js"></script>
288
289 <!-- Template Main JS File -->
290 <script src="assets/js/main.js"></script>
291
292 </body>
293
294 </html>
```

The status bar at the bottom indicates the current line and column: `Ln 96, Col 271`. It also shows the file encoding as `UTF-8`, the line ending as `CRLF`, and the language as `HTML`. The system tray at the bottom right shows the temperature as `37°C`, the time as `14:00`, and the date as `12-04-2023`.