

Idle Planet – Development

Stage 1 – GUI:

1. Features:

- Title section:

- Container in the top centre of the page
- Large tag in the centre of the container, which reads “ Idle Planet - Earth”.
- Small save icon in the top left of the container

- Level display:

- Container underneath the title, shorter and thinner than the title div
- Text in the centre of the container that reads “Level 1 – 0/1000”.

- Central section:

- Container in the centre of the page, starting just under the level display.
- Round planet image in the top centre of the container

- Text underneath the planet reading “Population”
- More text underneath that reading “Money”
- Smaller text underneath that reading “Money/s”

- **Worker section:**

- Container at the bottom of the central section
- Text at the top of the container reading “ Workers”
- Button underneath with the text “Buy Worker: Price”
- Small text underneath the button reading “Total workers: x”
- Text underneath that reading “Total worker gen: x population/s”

- **Left section:**

- **Achievements container:**

- Container in the top left of the page
- Text at the top of the container reading “ Achievements”
- 3 containers underneath the text (short and wide), each with text inside reading “Achievement 1 – 0/100”

- Container underneath the achievements container, with 3 shorter “sub-containers” inside

- **Minigame container:**

- 1st sub-container
- Text at the top reading “ Minigames”
- 3 buttons, side by side, with text inside reading “Game 1 Play”, “Game 2 Play” and “Game 3 Play”

- **Prestige container:**
 - 2nd sub-container
 - Text at the top reading “ Prestige”
 - Small text underneath reading “Population Multiplier: x1.0”
 - Button underneath with text inside reading “Prestige – x population”
- **Population Gambling container:**
 - 3rd sub-container
 - Text at the top oreading “ Population Gambling”
 - Small input form underneath reading “Enter amount”
 - Text to the right of the input form reading “Win return: ”
 - Solid line underneath that spans across the width of the container
 - Larger text underneath reading “YOU WON/YOU LOST”
 - Button underneath with text inside reading “Gamble”
- **Right section:**
 - **Effects container**
 - Container in the top right of the page
 - Text at the top of the container reading “ Effects”

- 3 buttons, one underneath the other, with text inside reading “Effect”
- 3 buttons, adjacent to each of the effect buttons, with text inside reading “Price”
- Container outside of the effects container, in the top left, but still connected to it. Text inside the container reading “Gems: ”
- Container underneath the effects container, with 2 shorter “sub-containers” inside
- **Shop container:**
 - 1st sub-container:
 - Small, square container in the top left of the shop container, with text inside reading “x1”
 - Text at the top of the container reading “ Shop”
 - 3 buttons, 1 under the other.
 - Text inside each button reading “Upgrade: Price”
 - Small text in the bottom left of each button reading “0”
 - Small text in the bottom right of each button reading “x1”
 - Scroll bar on the right on the shop section
- **Planets container:**
 - 2nd sub-container:
 - Text at the top of the container reading “ Planets:”
 - 4 buttons, 1 under the other
 - Text in the 4 buttons : “Mercury”, “Venus”, “Mars”, “Custom planet” respectively

- Button adjacent to the first button with text inside reading “Lvl 50”
- Buttons adjacent to the other 3 buttons with a lock image inside

2. Development

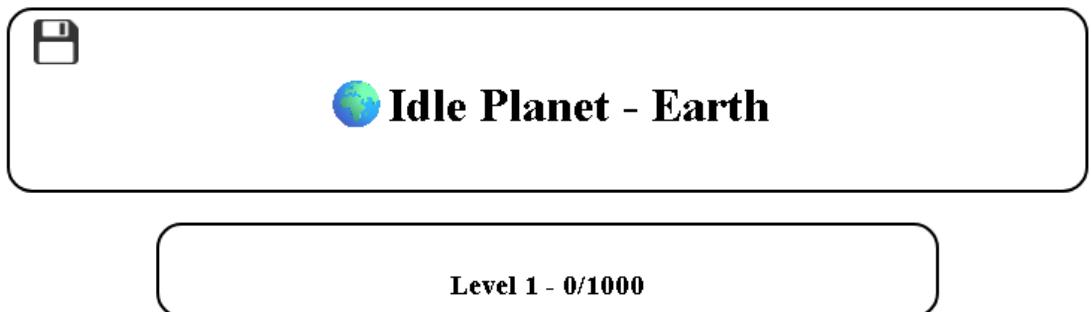
- Title + Level Section:

```
<div class="top-center">
  <div class="title">
    <button class="save-button">
      </img>
    </button>
    <h1>Idle Planet - <span>Earth</span></h1>
  </div>
  <div class="level">
    <div class="progress-bar"></div>
    <h3>Level 1 - 0/1000</h3>
  </div>
</div>
```

```
37  .top-center {
38      display: flex;
39      flex-direction: column;
40      align-items: center;
41  }
42
43  .title {
44      grid-row: 1 / span 2;
45      grid-column: 2;
46      height: 100px;
47      width: 700px;
48      display: flex;
49      justify-content: center;
50      align-items: center;
51      position: relative;
52  }
53
54  .save-button {
55      position: absolute;
56      left: 10px;
57      bottom: 80px;
58      background: none;
59      border: none;
60  }
61
62  .save-icon {
63      height: 30px;
64      width: 30px;
65  }
66
67
68
69  .level {
70      grid-row: 2;
71      grid-column: 2;
72      height: 40px;
73      width: 500px;
74      text-align: center;
75
76  }
77
```

- I have created a div for the top center of the page, which contains 2 divs, one for the title and one for the level section. The reason I have put these 2

sections in the same div, is because I am using a grid and these 2 divs are on different rows, meaning there would be a big gap between them which I don't want. By putting them in the same div, I can set the grid-row of the title div to 1 / span 2, which makes it span over 2 rows, so the 2 divs are essentially in the same row together which will bring the level section up closer to the title section. For the title text, I have used a h1 with a span inside that reads the name of the planet. This is so that I can change the text of just the span when the planet needs to switch. For the save icon, I have used an image from Free Icons Png ([Save Icon PNG Transparent Background, Free Download #5404 - FreelconsPNG](#)). I have put this image inside a button, with the background and border removed so only the icon is visible, but it is still a clickable button. I have set the position of the title div to relative, and the save button to absolute, so I can independantly move the button to the top left of the top centre section without affecting the position of the title. This is what this looks like on the page:



- Central + Worker Section:

```
<div class="center">
  <button class="planet-button">
    </img>
  </button>
  <h2>Population: </h2>
  <h2 style="margin-bottom: -10px">Money: </h2>
  <h4>Money/s: </h4>
  <div class="workers">
    <h2>Workers</h2>
    <div class="worker-elements">
      <button class="worker-button">Buy Worker: <span>Price</span></button>
      <h4>Total Workers: x</h4>
      <h3>Total worker gen: x population/s</h3>
    </div>
  </div>
</div>
```

```
.center {
    grid-row: 2;
    grid-column: 2;
    border: 2px solid black;
    border-radius: 17px;
    padding: 10px;
    margin: 10px;
    text-align: center;
    height: 630px;
    justify-content: flex-start;
    display: flex;
    flex-direction: column;
    align-items: center;
}

.planet-button {
    background: none;
    border: none;
    padding: 0;
    display: flex;
    justify-content: center;
    align-items: center;
}

.planet-icon {
    width: 250px;
    height: auto;
    max-width: 100%;
}

.workers {
    height: 150px;
    width: 600px;
    display: flex;
    text-align: center;
    justify-content: center;
    flex-direction: column;
    margin: 0px;
}

.worker-elements {
    gap: 0px;
}

.worker-button {
    width: 150px;
    height: 30px;
}
```

- I have created a div for the central section of the page. I have set the flex-direction of the div to column, so that the elements stack vertically on top of each other, and I have set the justify-content to flex-start so that the elements start at the top of the container (with the planet at the very top). Inside the div I have a button for the clickable planet, with an image inside from Pin Clipart ([Earth Transprent Png Free - Earth Drawing Png Clipart \(#1635836\) - PinClipart](#)) for the Earth. I removed the background and border from the button, so only the planet image is visible. I have also created a div inside of the center div, for the worker section. Inside this, I have the title for the section, and also a div for all the elements inside the worker section, including the worker button , the total workers display and the total worker generation display. The reason I have this nested div, is so that I can arrange the elements to stack on top of each other, and control the sizing and gap between them without affecting the title of the div. This is what this looks like on the page:



Population:

Money:

Money/s:

 **Workers**

Buy Worker: Price

Total Workers: x

Total worker gen: x population/s

- **Left Section:**

- **Achievements**

```
<div class="achievements">
  <h2> 🎯Achievements</h2>
  <div class="achievement">
    <h3>Achievement 1 - 0/100</h3>
  </div>
  <div class="achievement">
    <h3>Achievement 2 - 0/100</h3>
  </div>
  <div class="achievement">
    <h3>Achievement 3 - 0/100</h3>
  </div>
</div>
```

```
.achievements {
  grid-row: 1;
  grid-column: 1;
}

.achievement {
  border: 2px solid black;
  border-radius: 10px;
  margin: 10px;
  text-align: center;
  height: 45px;
}
```

- I have created a div for the achievements section, with 3 divs inside for each achievements. I've aligned all the elements in the center and given each achievement a border and the correct text. The achievements section is still in the left section, but it is not

inside the “left” div I have created because it is in the top right page, and not embedded inside another container like the next 3 sections. This is what this looks like on the page



- **Minigames:**

```
<div class="left">
  <div class="minigames">
    <h2>Minigames</h2>
    <div class="minigame-buttons">
      <button class="minigame-button">Minigame 1 Play</button>
      <button class="minigame-button">Minigame 2 Play</button>
      <button class="minigame-button">Minigame 3 Play</button>
    </div>
  </div>
```

```
.left {  
    grid-row: 2;  
    grid-column: 1;  
    border: 2px solid black;  
    border-radius: 17px;  
    padding: 10px;  
    margin: 10px;  
    text-align: center;  
}
```

```
.minigames {  
    border: 2px solid black;  
    border-radius: 17px;  
    padding: 10px;  
    margin: 10px;  
    text-align: center;  
}  
  
.minigame-buttons {  
    display: flex;  
    justify-content: center;  
    gap: 10px;  
}  
  
.minigame-button {  
    width: 80px;  
    height: 80px;  
    border: 2px solid black;  
}
```

- I have created a div for the left section of the game which holds the minigames, prestige, and population gambling sections. Inside this left div, I have created a div for the minigames section, with the title of the section, followed by another div for all the minigame buttons. The reason I have put all the minigame buttons in their own div, is so that I can arrange them side by side, separate from the title. This is what this looks like on the page:



- **Prestige:**

```
<div class="prestige">
  <h2> Prestige </h2>
  <h4>Population multiplier: x1.0</h4>
  <button>Prestige - x population</button>
</div>
```

```
.prestige {
  border: 2px solid black;
  border-radius: 17px;
  padding: 10px;
  margin: 10px;
  text-align: center;
}
```

- I have created a div for the prestige section (Also inside the left div), with the text for the title and the population multiplier display. I then have a button for the prestige which

contains text showing the required population.
This is what this looks like on the page:



- **Population Gambling**

```
<div class="population-gambling">
  <h2>🎲 Population Gambling</h2>
  <div class="gamble-input">
    <input class="gamble-amount" type="text" placeholder="Enter amount"></input>
    <button>Gamble</button>
  </div>
  <h4 style="margin: 5px; text-align: left;">Win return: </h4>
  <div class="separator"></div>
  <h3>YOU WON / YOU LOST</h3>
</div>
</div>
```

```
.population-gambling {
    height: 170px;
    border: 2px solid black;
    border-radius: 17px;
    padding: 10px;
    margin: 10px;
    text-align: center;
}

.gamble-input {
    display: flex;
    height: 20px;
    align-items: center;
    gap: 10px;
}

.separator {
    margin: 10px;
    height: 0.0001px;
    border: solid 2px
}
```

- I have created a div for the population gambling section (Also inside the left div), with text for the title at the top. I then have a div for the gamble input, which holds the input form for the gamble and the gamgle button. The reason I have these in a separate div is because I can arrange just these two elements side by side. I then have text underneath this div for the Win Return display. This is outside the gamble input div because it is on the line below. After this, I have a separator div, which I have just used to make a line to divide the section according to my GUI design. The separator is just a very

short div with a solid border, which makes it look like a line. Finally, I have the win/loss text at the bottom of the section. This will not be visible when I set up the population gambling, and it will only appear when the player wins or loses (YOU WON will appear if they win and YOU LOST will appear if they lose). This design is slightly different to that of my GUI design, because I thought it made more sense to have the gamble button right next to, on the same line as, the input form, rather than all the way at the bottom of the section. I then thought it would be better to have the win return text display underneath the input form, on its own line, so there is more space do display the number which may be large and take up a lot of horizontal space.

- **Left Section:**

- **Effects:**

```
<div class="effects">
    <div class="gems"><h3>Gems: </h3></div>
    <h2>Effects</h2>
    <div class="effects-list">
        <div class="effect-row">
            <div class="effect"><h3>Effect 1</h3></div>
            <div class="effect-price"><span>Price</span></div>
        </div>
        <div class="effect-row">
            <div class="effect"><h3>Effect 2</h3></div>
            <div class="effect-price"><span>Price</span></div>
        </div>
        <div class="effect-row">
            <div class="effect"><h3>Effect 3</h3></div>
            <div class="effect-price"><span>Price</span></div>
        </div>
    </div>
</div>
```

```
.effects {
    padding: 5px;
    display: flex;
    flex-direction: column;
    align-items: flex-start;
    position: relative;
}

.effects-list {
    display: flex;
    height: 50px;
    width: 100px;
    align-items: flex-start;
    flex-direction: column;
    gap: 10px;
    margin-top: 10px;
    margin-left: 5px;
}

.effect-row {
    height: 40px;
    width: 350px;
    display: flex;
    align-items: center;
    justify-content: center;
    gap: 10px;
}

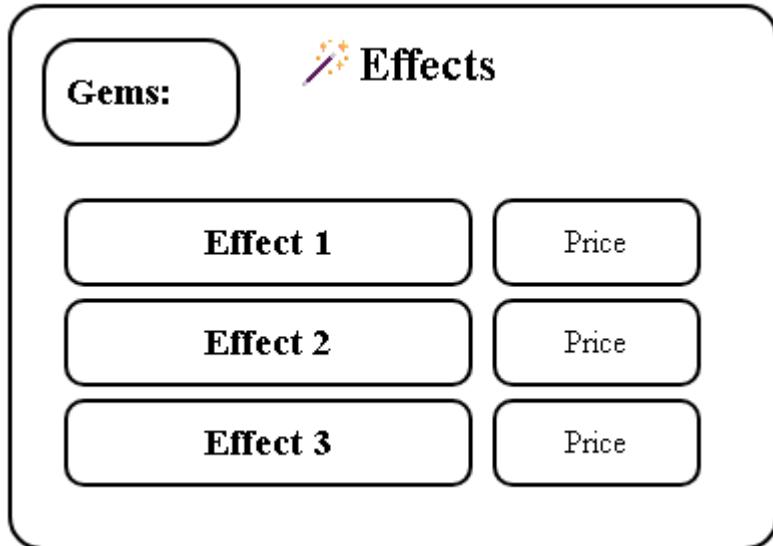
.effects h2 {
    margin-top: 5px;
    margin-left: 135px;
    margin-bottom: 45px;
}

.effect-price {
    display: flex;
    height: 40px;
    width: 100px;
    border: 2px solid black;
    border-radius: 10px;
    align-items: center;
    justify-content: center;
}
```

```
.effect {  
    border: 2px solid black;  
    border-radius: 10px;  
    width: 200px;  
    height: 40px;  
    display: flex;  
    align-items: center;  
    justify-content: center;  
}  
  
.gems {  
    border: 2px solid black;  
    border-radius: 17px;  
    padding: 10px;  
    margin: 10px;  
    text-align: center;  
    width: 75px;  
    height: 30px;  
    display: flex;  
    justify-content: left;  
    align-items: center;  
    position: absolute;  
}
```

- I have made a div for the effects section. The effects section is still in the right section of the page, but it's not in the "right" div I have created because it is in the top right of the page and not embedded inside another container like the next 2 sections. Inside the effects div, I havce a div for the gems, as this needs to be a container in the top left of the effects section. I then have title text for the section. After this, I have an effects list div, which holds an effects row div for each effect. The effects row div contains a div for the effect, and then a div for

the effect price display. The reason I have separate divs for each row of effects, is so that I can group the effect and price together and then arrange them side by side, then stack each one on top of each other. I do this by setting the flex direction to column in the effects list div, so that the effects and their price will be arranged side by side. Therefore, each effect row div will have the effect and then the price next to it, and then the next div will be underneath the previous one. For the gems div, I have set the position to absolute so that it can stay in the top left of the section without affecting the rest of the content. Otherwise, it would push the rest of the elements in the section down. This is what this looks like on the page:



- **Shop:**

```
<div class="right">
  <div class="shop">
    <h2>Shop</h2>
    <div class="shop-list">
      <div class="shop-row">
        <button class="shop-item">Upgrade 1:<span>x1</span></button>
        <span>Price</span>
      </div>
      <span>x0</span>
      <div style="height: 10px"></div>
      <div class="shop-row">
        <button class="shop-item">Upgrade 2:<span>x1</span></button>
        <span>Price</span>
      </div>
      <span>x0</span>
      <div style="height: 10px"></div>
      <div class="shop-row">
        <button class="shop-item">Upgrade 3:<span>x1</span></button>
        <span>Price</span>
      </div>
      <span>x0</span>
    </div>
  </div>
```

```
.right {
    grid-row: 2;
    grid-column: 3;
    border: 2px solid #black;
    border-radius: 17px;
    padding: 10px;
    margin: 10px;
    text-align: center;
}

.shop {
    border: 2px solid #black;
    border-radius: 17px;
    padding: 10px;
    margin: 10px;
    text-align: center;
    justify-content: center;
    display: flex;
    flex-direction: column;
    gap: 5px;
    height: 260px;
}

.shop-list {
    gap: 5px;
    max-height: 240px;
    overflow-y: auto;
    text-align: left;
}

.shop-row {
    display: flex;
    flex-direction: row;
    gap: 20px;
    margin-bottom: 8px;
}

.shop-item {
    height: 30px;
    width: 200px;
    display: flex;
    justify-content: space-between;
}
```

- I have created a div for the right side of the page, which holds the shop and planets section. Inside this div, I have created a div for the shop, which starts with another div for the multi-purchase button. I have used the same css code for this button as for the gems display in the effects section (except with a margin-bottom of 215px to push it to the top of the section). This css ensures it can be positioned in the top left of the section without affecting the rest of the elements. After this, I have the title text, followed by another div for the shop list. Similar to the effects section, I then have a shop row div for each upgrade, purchase number and its price, allowing me to put the upgrade and its price side by side. Inside the button for each upgrade, I have a span for the purchase number reads x1, which corresponds to the number in the multi-purchase container. I have set the justify content of each shop item to space-between, which pushes that span to the very right hand side of the button. After each shop row div, I have a span that reads x0, which will increase each time the player purchases the upgrade above. I have also set the overflow-y of the shop list to auto, which creates a scroll bar for the upgrades, so that when I add more the player will be able to scroll through them all, without them taking up loads

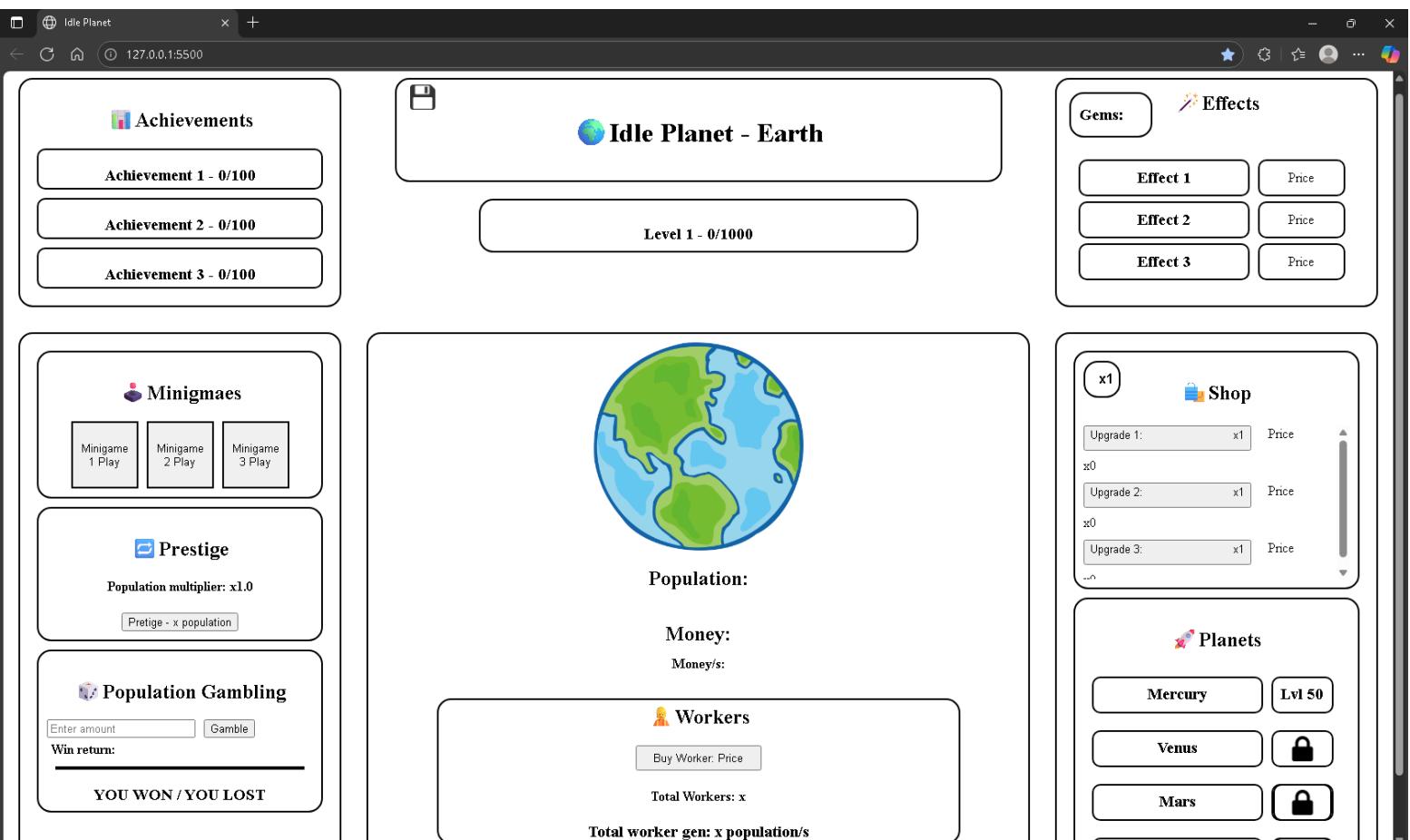
of space on the page. This is what this looks like on the page:



○ Planets:

```
<div class="planets">
  <h2> Planets</h2>
  <div class="planet-list">
    <div class="planet-row">
      <div class="planet">
        <h3>Mercury</h3>
      </div>
      <div class="planet-unlock"><h3>Lvl 50</h3></div>
    </div>
    <div class="planet-row">
      <div class="planet">
        <h3>Venus</h3>
      </div>
      <div class="planet-unlock"></div>
    </div>
    <div class="planet-row">
      <div class="planet">
        <h3>Mars</h3>
      </div>
      <div class="planet-unlock"><div class="planet-unlock"></div></div>
    </div>
    <div class="planet-row">
      <div class="planet">
        <h3>Custom Planet</h3>
      </div>
      <div class="planet-unlock"><div class="planet-unlock"></div></div>
    </div>
  </div>
</div>
```

- Entire page:



This is what the page looks like as a whole:

- Cleaning up the CSS:

I have noticed that many my HTML elements have the same 5 lines of CSS code:

```
border: 2px solid black;
border-radius: 17px;
padding: 10px;
margin: 10px;
text-align: center;
```

This is because for all of these elements, I set a border with the same border radius, add padding and a margin of 10px, and center the text. Because of this, I can set these properties for all the elements at once. The classes of the elements that all have these properties set are:

- left
- right
- achievements
- center
- effects
- gems
- level
- minigames
- planets
- population-gambling
- prestige
- shop
- title
- planet
- workers

Therefore, I will delete the css that individually sets the properties for each of these classes, and do it all at once:

```
.left,  
.right,  
.achievements,  
.center,  
.effects,  
.gems,  
.level,  
.minigames,  
.planets,  
.population-gambling,  
.prestige,  
.shop,  
.title,  
.planet,  
.workers {  
    border: 2px solid black;  
    border-radius: 17px;  
    padding: 10px;  
    margin: 10px;  
    text-align: center;  
}
```

This cleans up the css code a bit, removing duplication
of code

```
.planets {
    border: 2px solid black;
    border-radius: 17px;
    padding: 10px;
    margin: 10px;
    text-align: center;
}

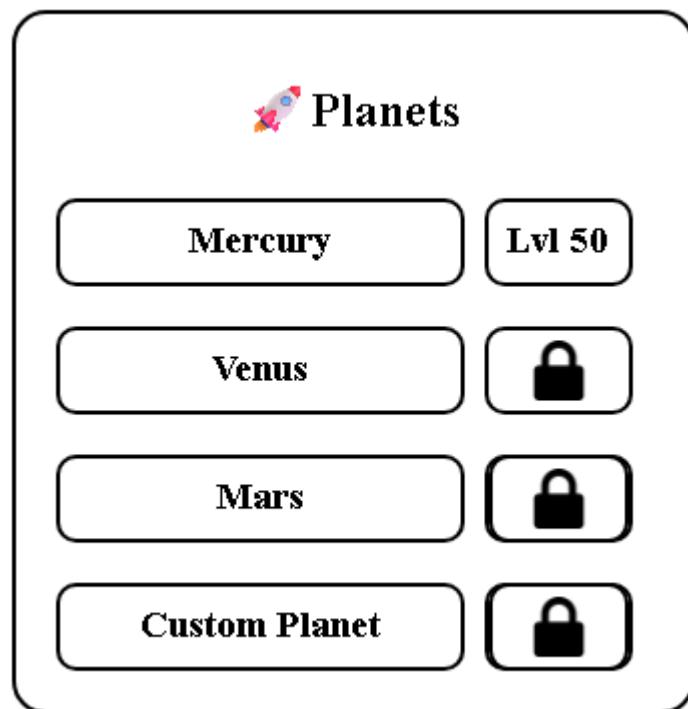
.planet {
    width: 200px;
    height: 40px;
    padding: 0px;
    display: flex;
    text-align: center;
    justify-content: center;
    align-items: center;
    border-radius: 10px;
}

.planet-unlock {
    border: 2px solid black;
    border-radius: 10px;
    width: 70px;
    height:40px;
    align-items: center;
    justify-content: center;
    display: flex;
}

.planet-row {
    display: flex;
    align-items: center;
}

.lock-icon {
    background: none;
    border: none;
    padding: 0;
    display: flex;
    justify-content: center;
    align-items: center;
    max-width: 30px;
}
```

- I have created a div for the planets section (also in the right div), which has the title of the section at the top. Like with the previous 2 sections, I have a div for the planets list, and then a planet row div for each row. Inside this, I have a div for the planet, which displays the planet name, and then a div for the planet unlock button. The first planet unlock button reads “Lvl 50”, and then each one after has a lock image inside, which I got from Free Icons Png ([Black Lock Icon PNG Transparent Background, Free Download #29059 - FreeliconsPNG](#)). This is what this looks like on the page:



3. Testing:

This is my test plan for stage 1:

Test no.	Description	Test type	Test data	Expected Result	Actual result
1	Is the title section set up correctly		Open the game and look at the top middle of the page	There should be a container which displays the game title and the name of the current planet. The save icon should also be in the top left of this container	There is a container that reads “Idle Planet – Earth”, and there is a save icon in the top left. Passed  See test evidence 1
2	Is the level section set up correctly		Open the game and loook at the top middle of the page, below	There should be a container that displays the current level and xp (out of the xp needed for the next level)	There is a container underneath the title container that reads “Level 1 – 0/1000”. Passed 

			the title section		See test evidence 2
3	Is the central section set up correctly.		Open the game and look at the centre of the page	There should be a container, where the planet is displayed at the top, with the population, money and money/s text display underneath	There is a container with the planet image at the top, and then a text display for the population, money and money/s. Passed <input checked="" type="checkbox"/> See test evidence 3
4	Is the worker section set up correctly		Open the game and look at the bottom of the central section	Underneath the population and money display, there should be a container for the workers, with a buy worker button and 2 text displays underneath (One for total workers and	At the bottom of the central section, there is a container for the workers, which has a buy worker button, a text display that reads “Total workers: x” and another display that reads “Total worker gen: x”

				one for total worker gen)	population/s” . Passed <input checked="" type="checkbox"/> See test evidence 4
5	Is the left section set up correctly		Open the game and look at the left of the page	There should be a container in the top right which displays the achievement s. Underneath, there should be another container which has three containers within it (the minigame, prestige and population gambling containers)	There is a container in the top left for the achievement s. Underneath, there is a container which has 3 containers inside, one for minigames, one for prestige, and one for population gambling. Passed <input checked="" type="checkbox"/> See test evidence 5
6	Is the right section set up correctly.		Open the game and look at the right of	There should be a container in the top right which displays the effects (along	There is a container in the top right for the effects, with the player’s gems

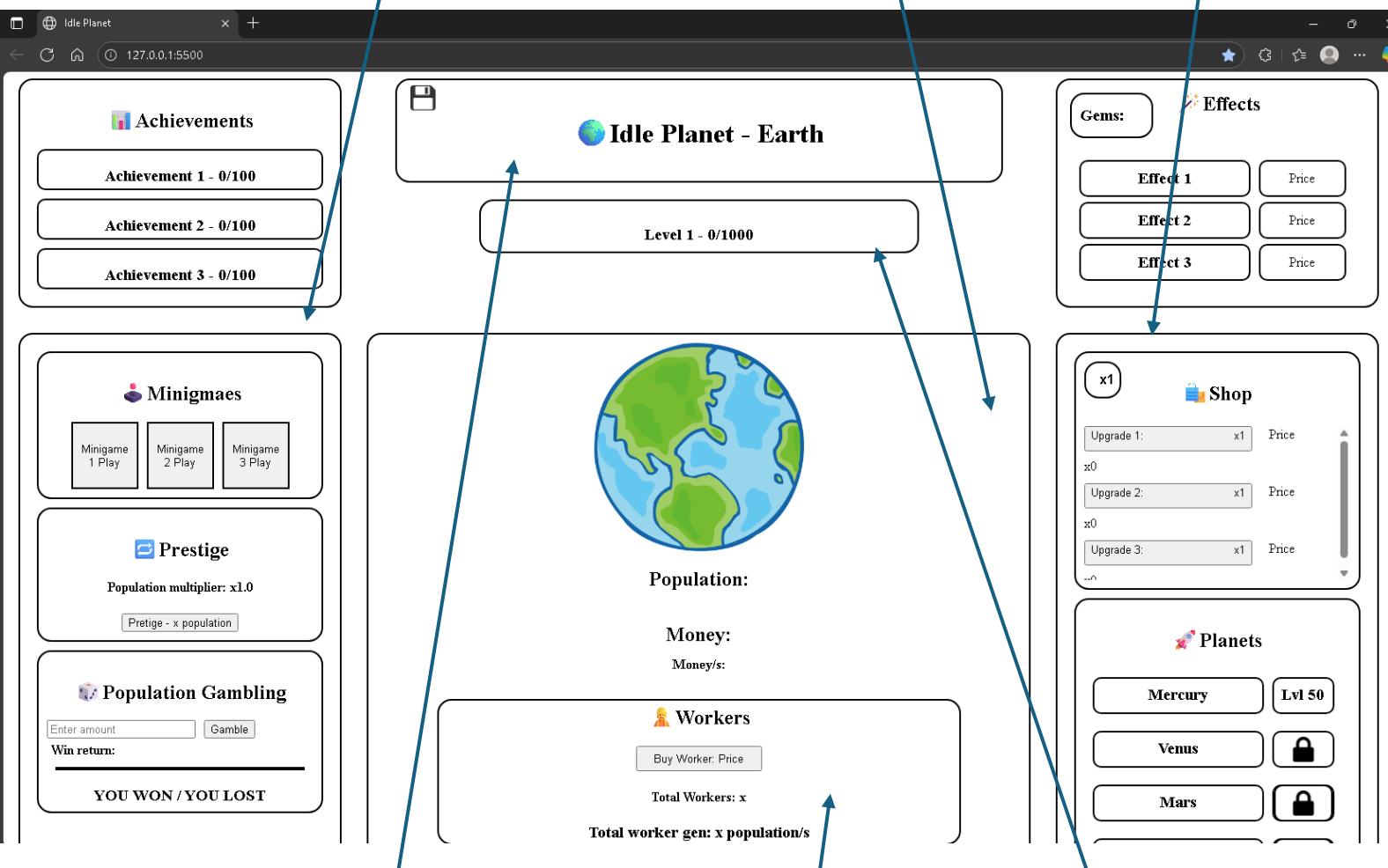
			the page	with the players gems in the top left of this container). Underneath, there should be a container with two containers within it (the shop container and the planets container)	<p>displayed in the top left. Underneath this, there is a container with a container for the shop and the planets inside.</p> <p>Passed <input checked="" type="checkbox"/></p> <p>See test evidence 6</p>
--	--	--	----------	--	--

- **Test evidence:**

Test evidence 5: There is a left section, with an achievements section in the top left, and then a container which has 3 containers within, one for minigames, one for prestige, and one for population gambling

Test evidence 3: In the centre of the page, there is a container with the planet image at the top, with a population, money and money/s display underneath

Test evidence 6: There is a right section, with an effects section in the top right, and then a container underneath with 2 containers within, one for the shop and one for planets



Test evidence 1: At the top middle of the page, there is a title section with the text "Idle Planet – Earth" and a save icon in the top left

Test evidence 4: At the bottom of the central section, there is a woker section with a buy worker button, anda total worker and total worker gen display underneath

Test evidence 2: Underneath the title there is a level section, which reads "Level 1 – 0/1000"

