

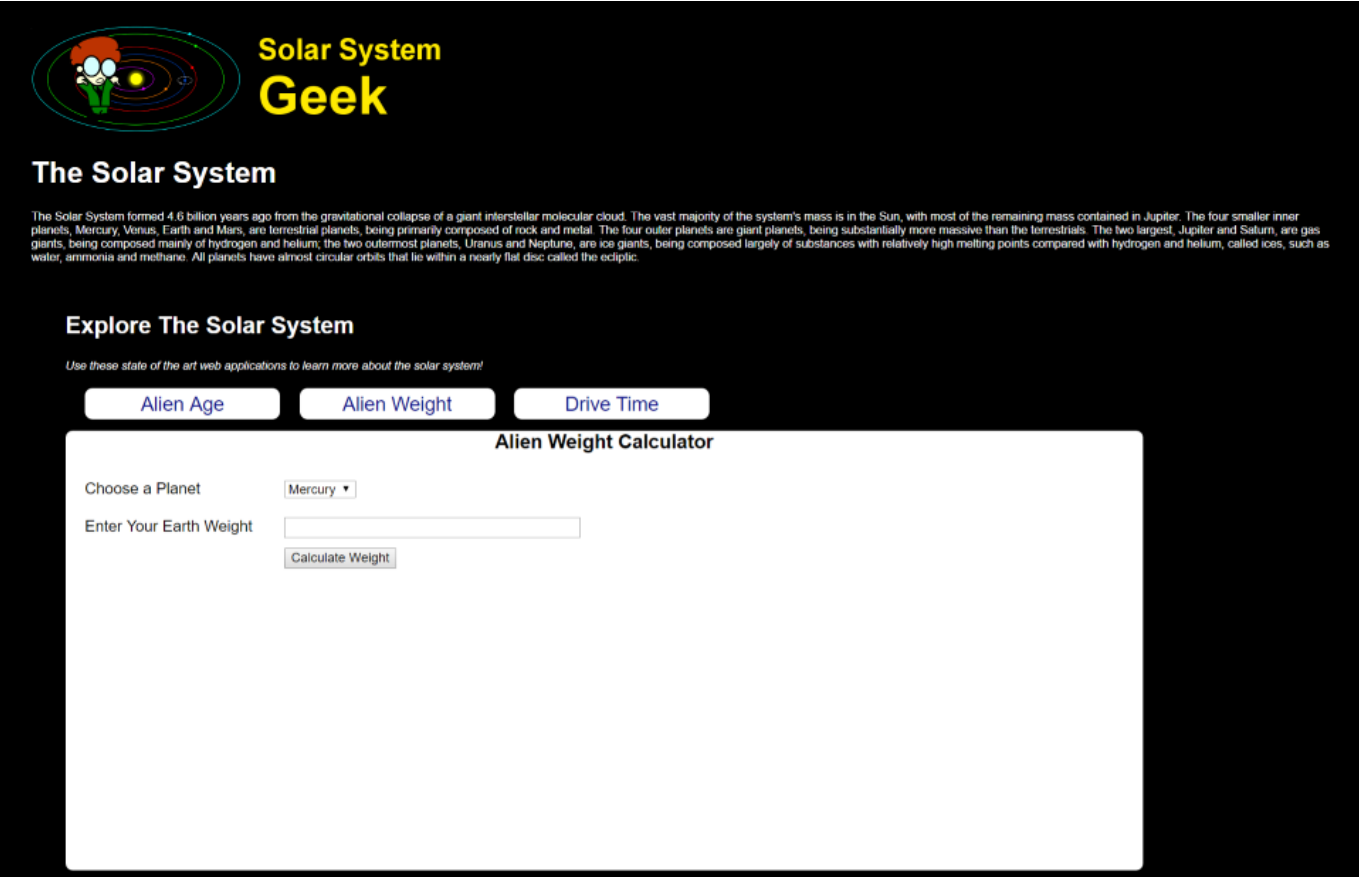
Day 1 Solar System Geek Calculators

On the Solar System Geek home page there are links for three different calculation tools to "Explore the Solar System". Implement these calculators as specified below and modify the home page links to point to your implementations.


Alien Weight Calculator

Given a weight on earth, this calculator should compute the equivalent weight on another planet in the solar system. Use the [gravity of the alien planet](#) compared to earth gravity to calculate the alien weight.

Input



Output



Solar System Geek

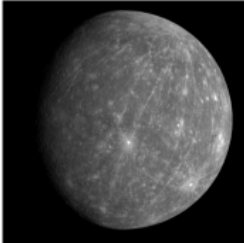
The Solar System

The Solar System formed 4.6 billion years ago from the gravitational collapse of a giant interstellar molecular cloud. The vast majority of the system's mass is in the Sun, with most of the remaining mass contained in Jupiter. The four smaller inner planets, Mercury, Venus, Earth and Mars, are terrestrial planets, being primarily composed of rock and metal. The four outer planets are giant planets, being substantially more massive than the terrestrials. The two largest, Jupiter and Saturn, are gas giants, being composed mainly of hydrogen and helium; the two outermost planets, Uranus and Neptune, are ice giants, being composed largely of substances with relatively high melting points compared with hydrogen and helium, called ices, such as water, ammonia and methane. All planets have almost circular orbits that lie within a nearly flat disc called the ecliptic.

Explore The Solar System

Use these state of the art web applications to learn more about the solar system!

[Alien Age](#)[Alien Weight](#)[Drive Time](#)

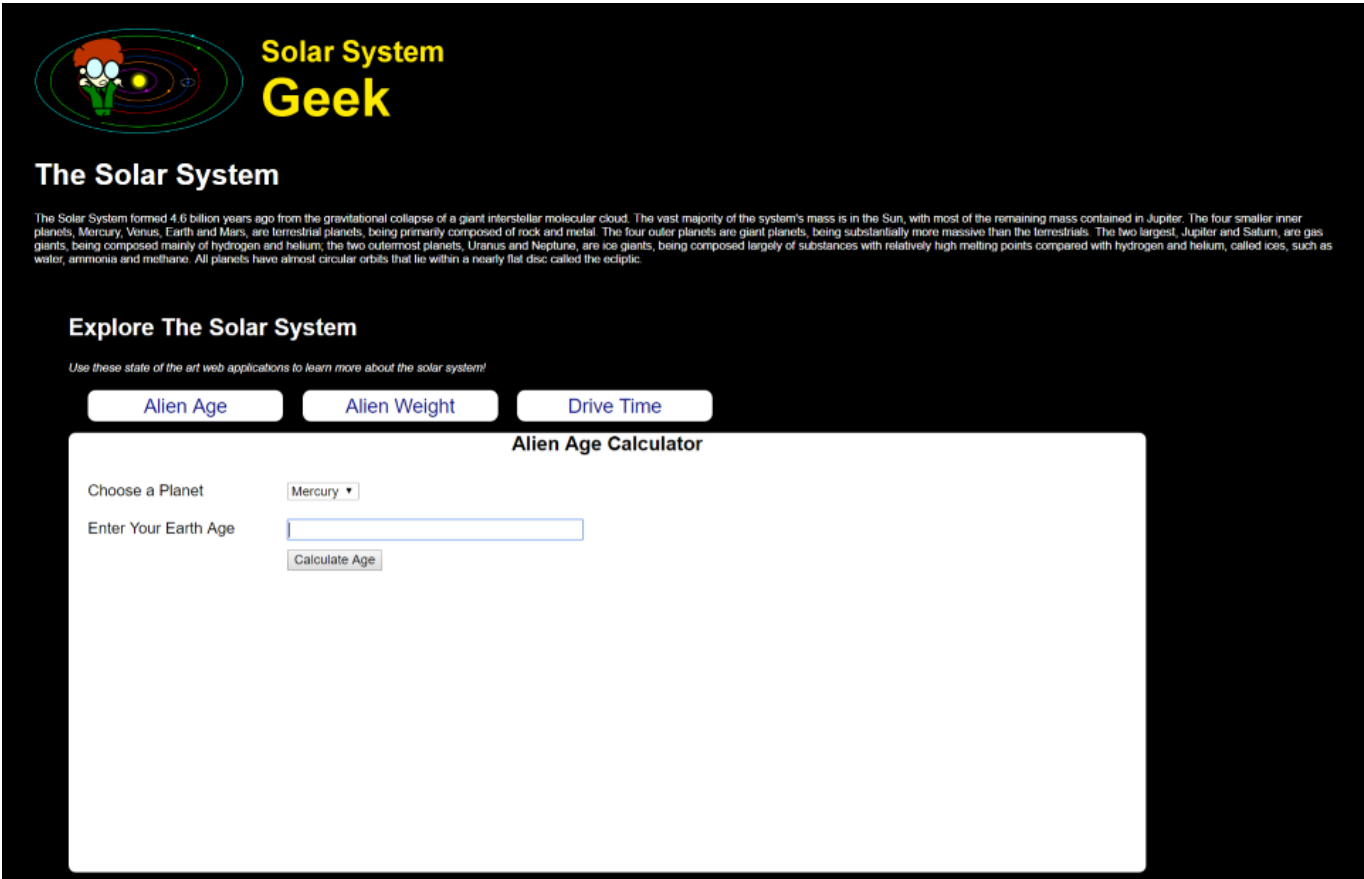


If you are 172 lbs on planet Earth, you would weigh 63.64 lbs on Mercury.

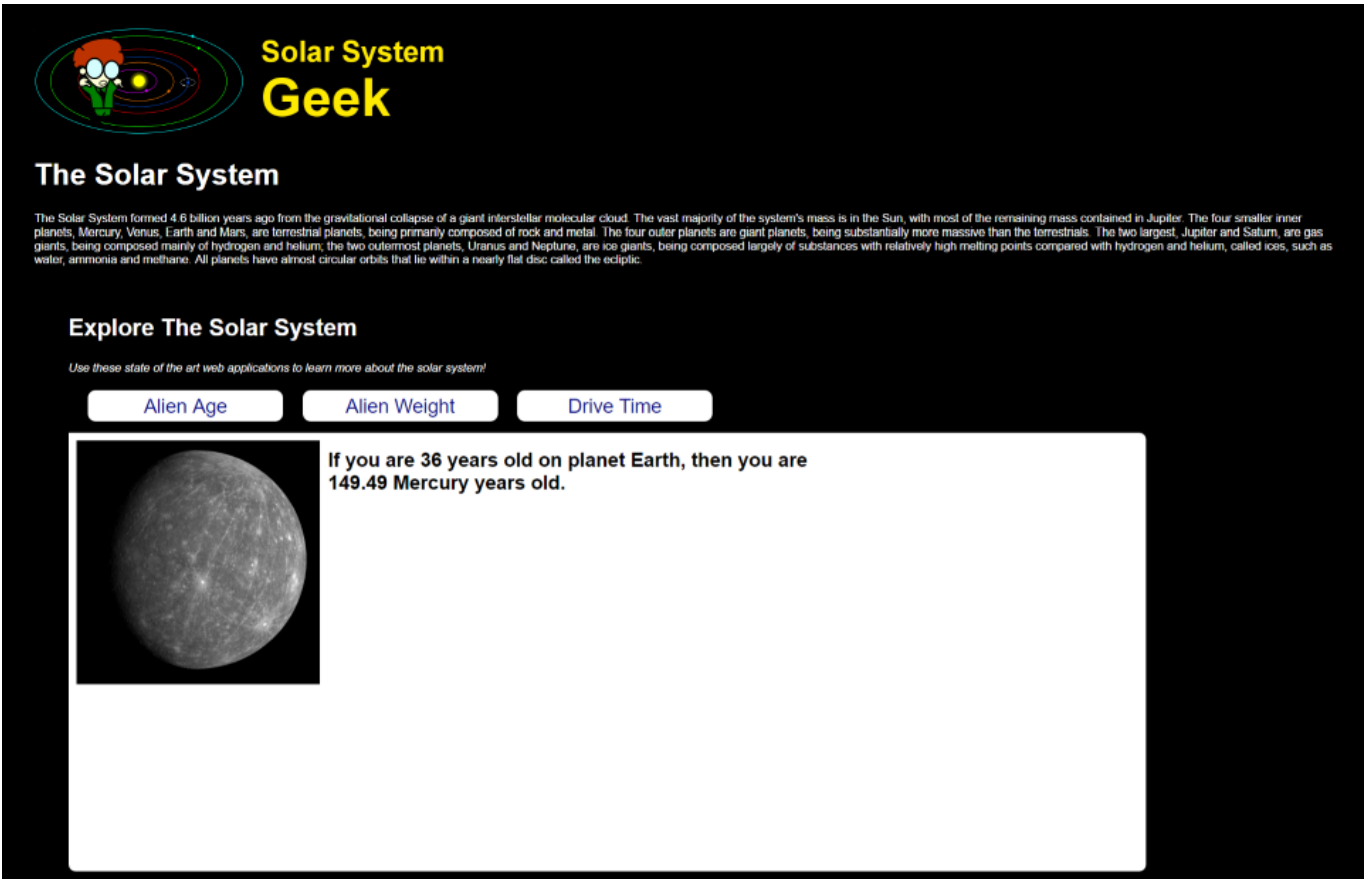
Alien Age Calculator

Given an age in Earth years, this calculator should compute the equivalent age in [years for another planet in the solar system](#).

Input



Output

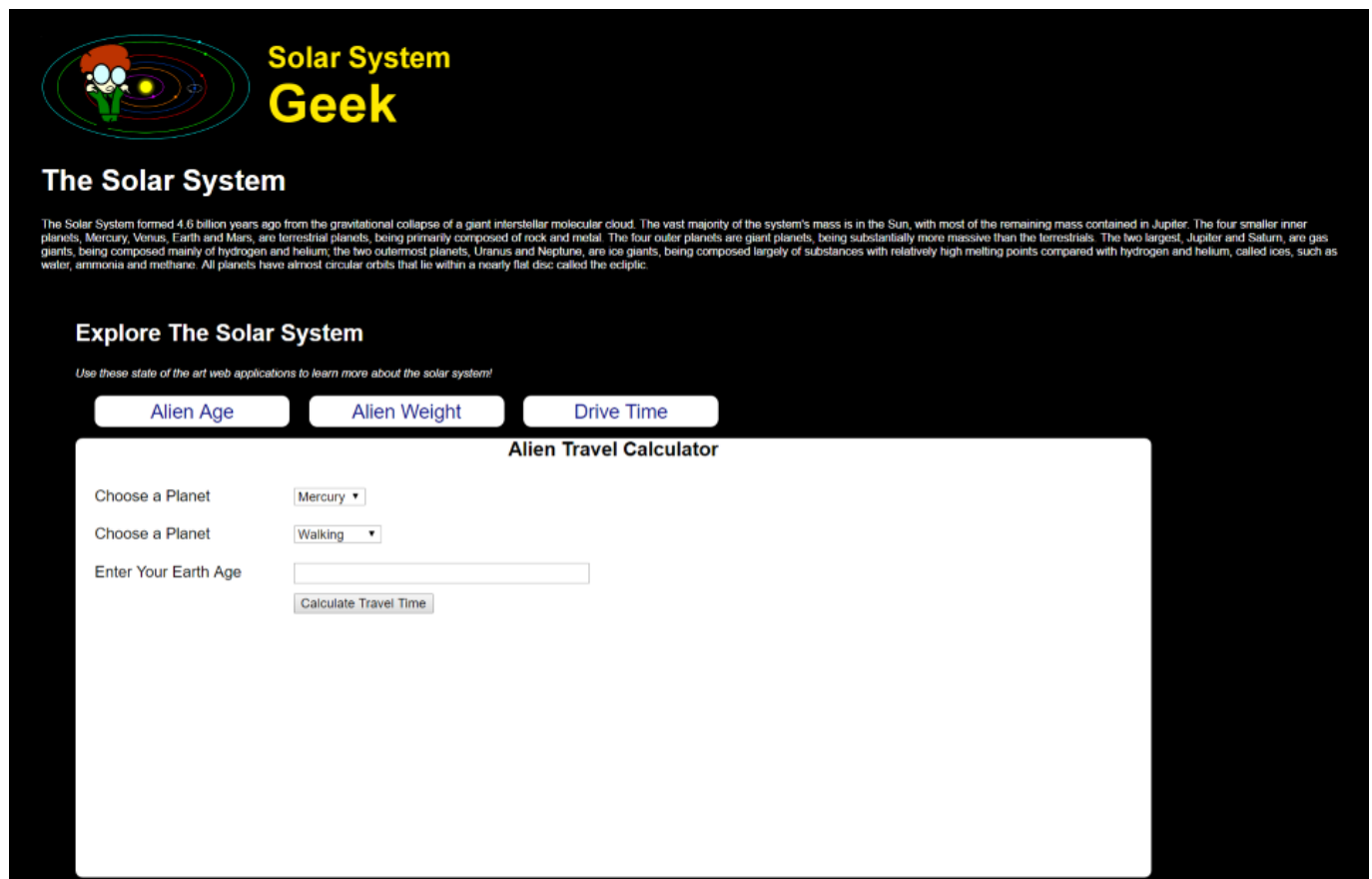


Alien Travel Calculator

Given a destination planet, mode of transportation, and age of the traveler at the start of the journey, this calculator should compute the total travel time and age of the traveler upon arrival. The calculation should be based on the [average distance between planets in the solar system](#) and the following modes of transportation and their speeds:

- **Walking** (3mph)
- **Car** (100mph)
- **Bullet Train** (200mph)
- **Boeing 747** (570mph)
- **Concorde** (1350mph)

Input



The screenshot shows the 'Solar System Geek' website. At the top left is a logo of a cartoon alien with a red head and green body, standing next to a diagram of the solar system. To the right of the logo is the text 'Solar System Geek' in yellow. Below this is the title 'The Solar System' in white. A paragraph of text describes the formation of the solar system. Below the text is the section 'Explore The Solar System' with a subtitle 'Use these state of the art web applications to learn more about the solar system!'. There are three buttons: 'Alien Age', 'Alien Weight', and 'Drive Time'. The 'Drive Time' button is selected. Below these buttons is the 'Alien Travel Calculator' form. The form has three dropdown menus: 'Choose a Planet' (set to Mercury), 'Choose a Planet' (set to Walking), and 'Enter Your Earth Age' (empty). There is a 'Calculate Travel Time' button.

Solar System Geek

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Alien Age **Alien Weight** **Drive Time**

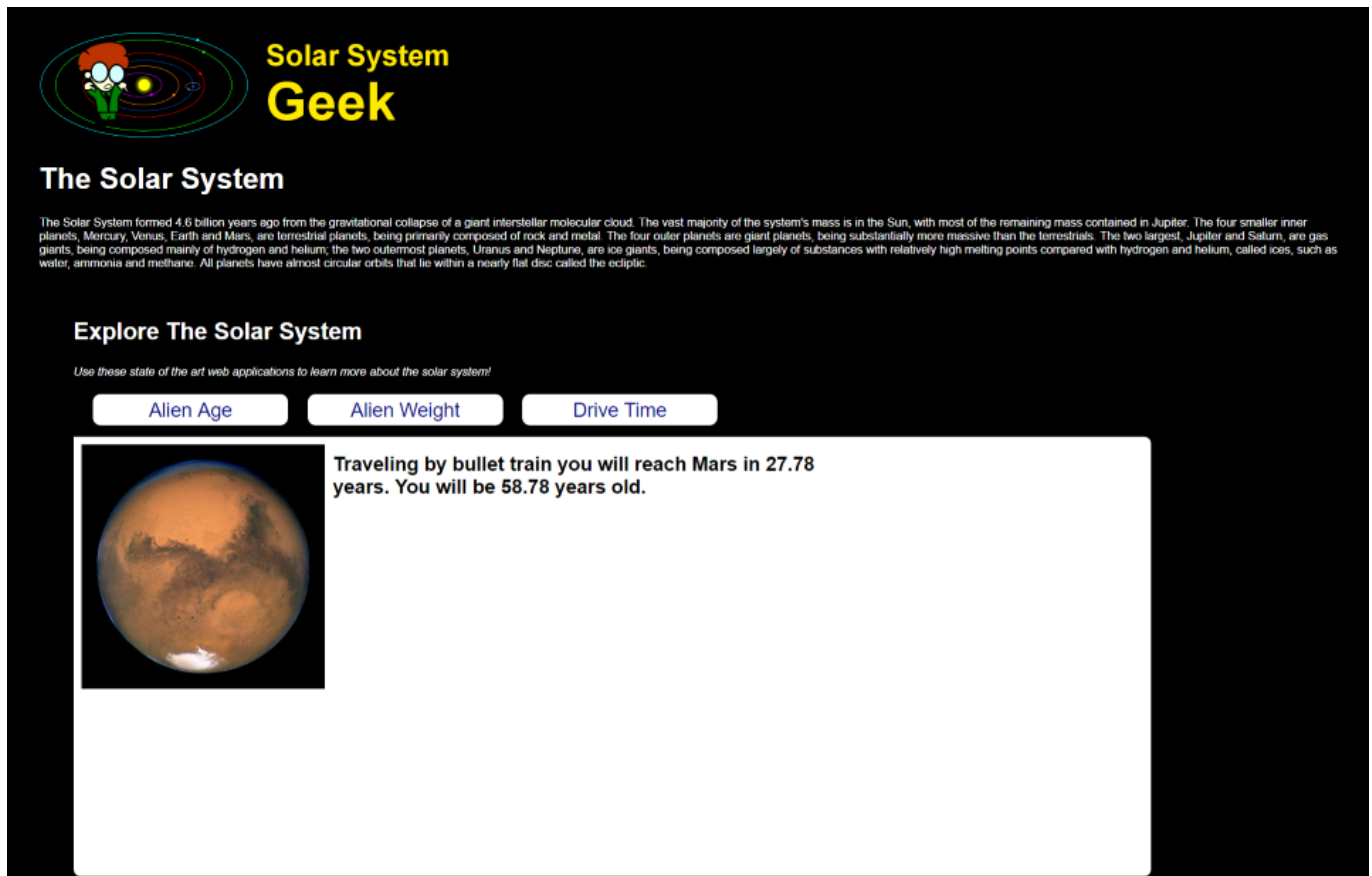
Alien Travel Calculator

Choose a Planet:

Choose a Planet:

Enter Your Earth Age:

Output



Day 2 Solar System Geek Online Forum

You are developing an online bulletin board web component to SSGeek. Its a general forum posting, so anyone is welcome to join and post without needing to first login.

The application needs to support 2 core functionalities.

1. Provide a page that allows a site user to submit a new post to the bulletin board
2. View all posts on the bulletin board

Your implementation must apply dependency injection and leverage a Test Double to ensure the controller logic is correct.

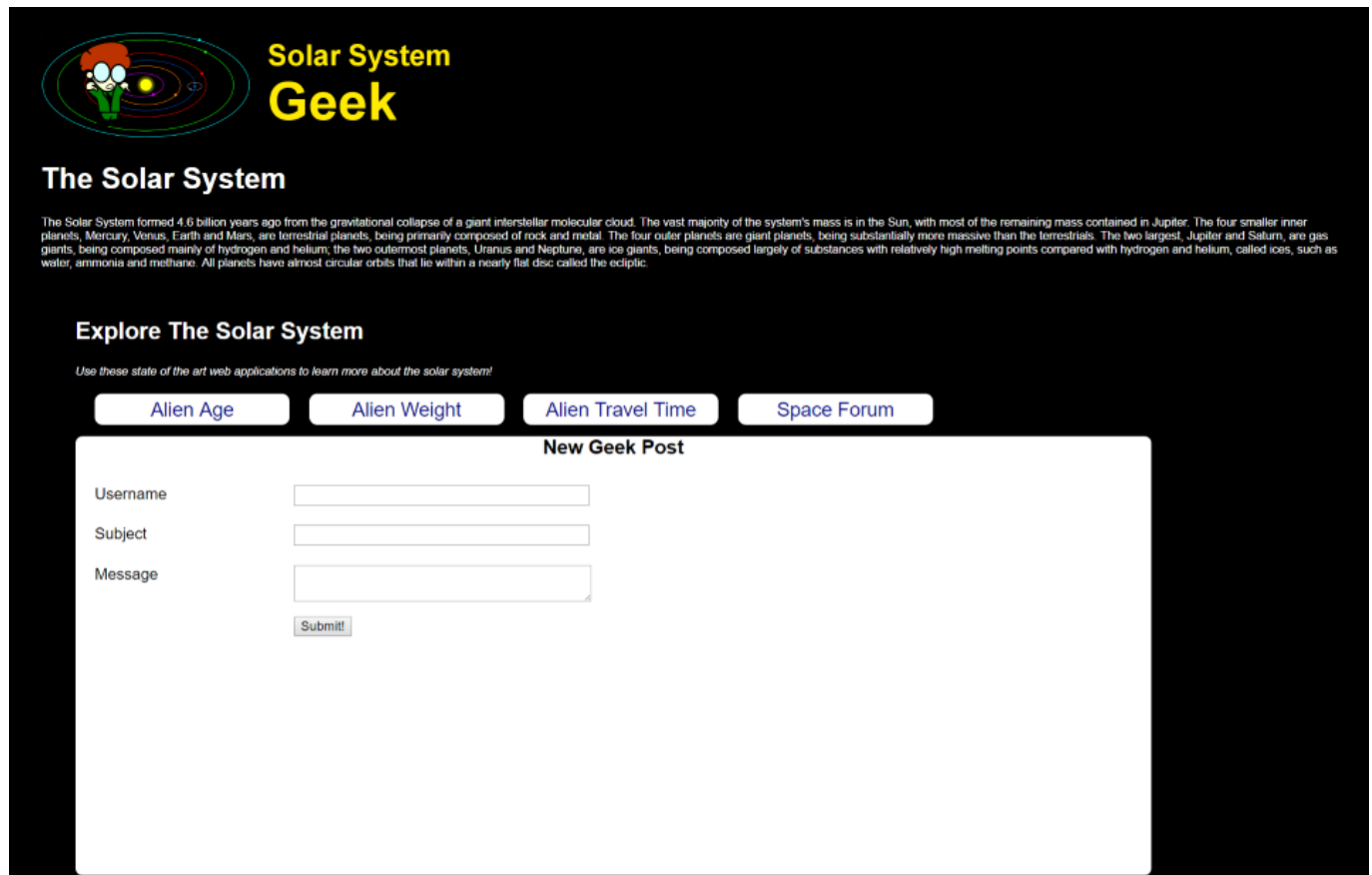
A database script, an interface, and a data access object has been provided. You will need to implement the details.

Submitting a New Post

Users can navigate to a page on the web application that provides them with a form to submit a new post for a bulletin board.

The page will provide the user with the form to submit:

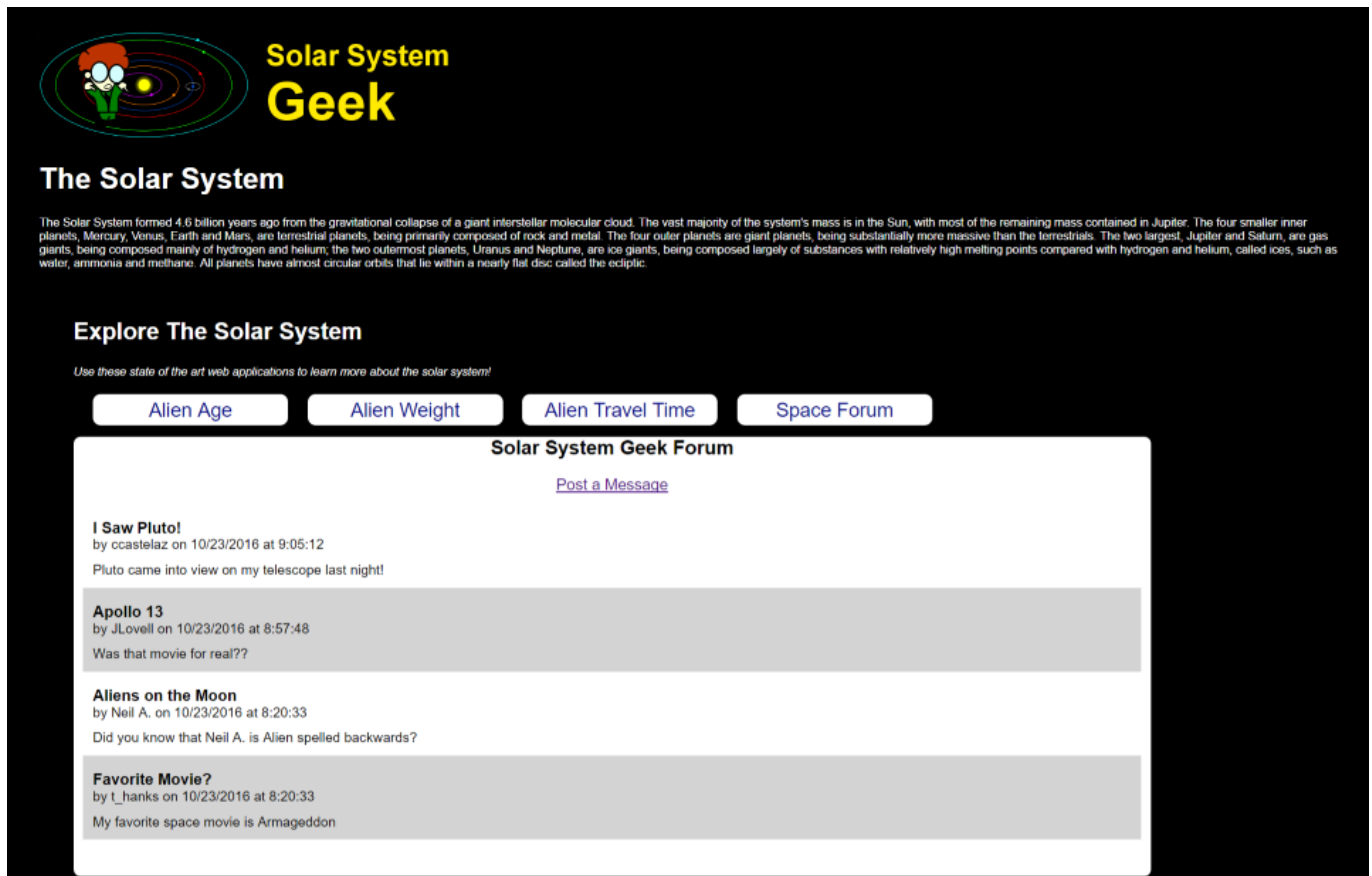
- Username (required)
- Subject (required)
- Message (required)



Viewing a Post

The View Posts page allows users the ability to see any posts that were previously submitted to the web application.

The page should display to the user all of the prior posts. You can use any type of layout that you prefer.



Any new posts that are submitted from the Submit Post page should show up on the View a Post page.

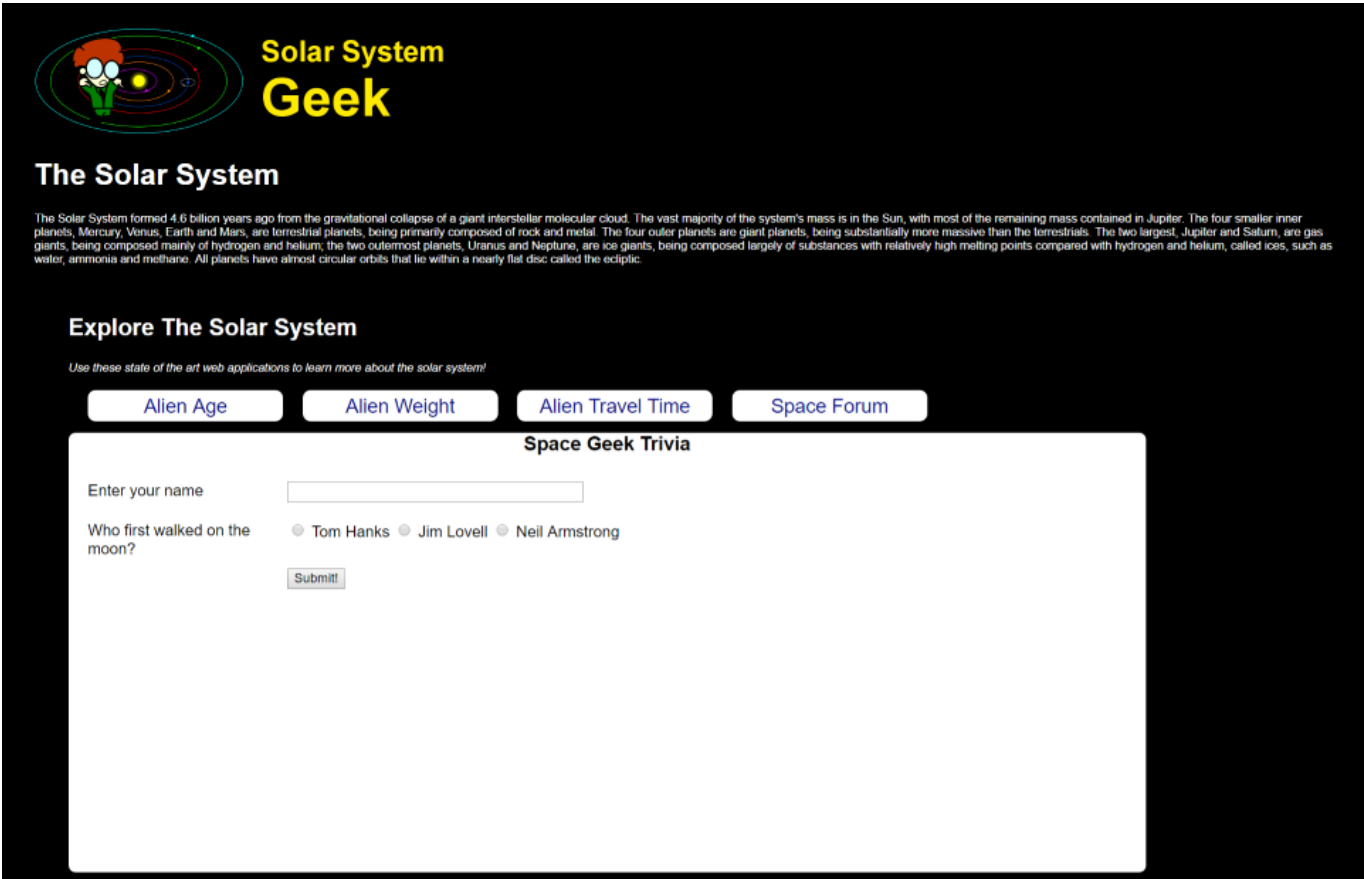
Day 2 Bonus

Create a form that allows website visitors to sign up to win a prize.

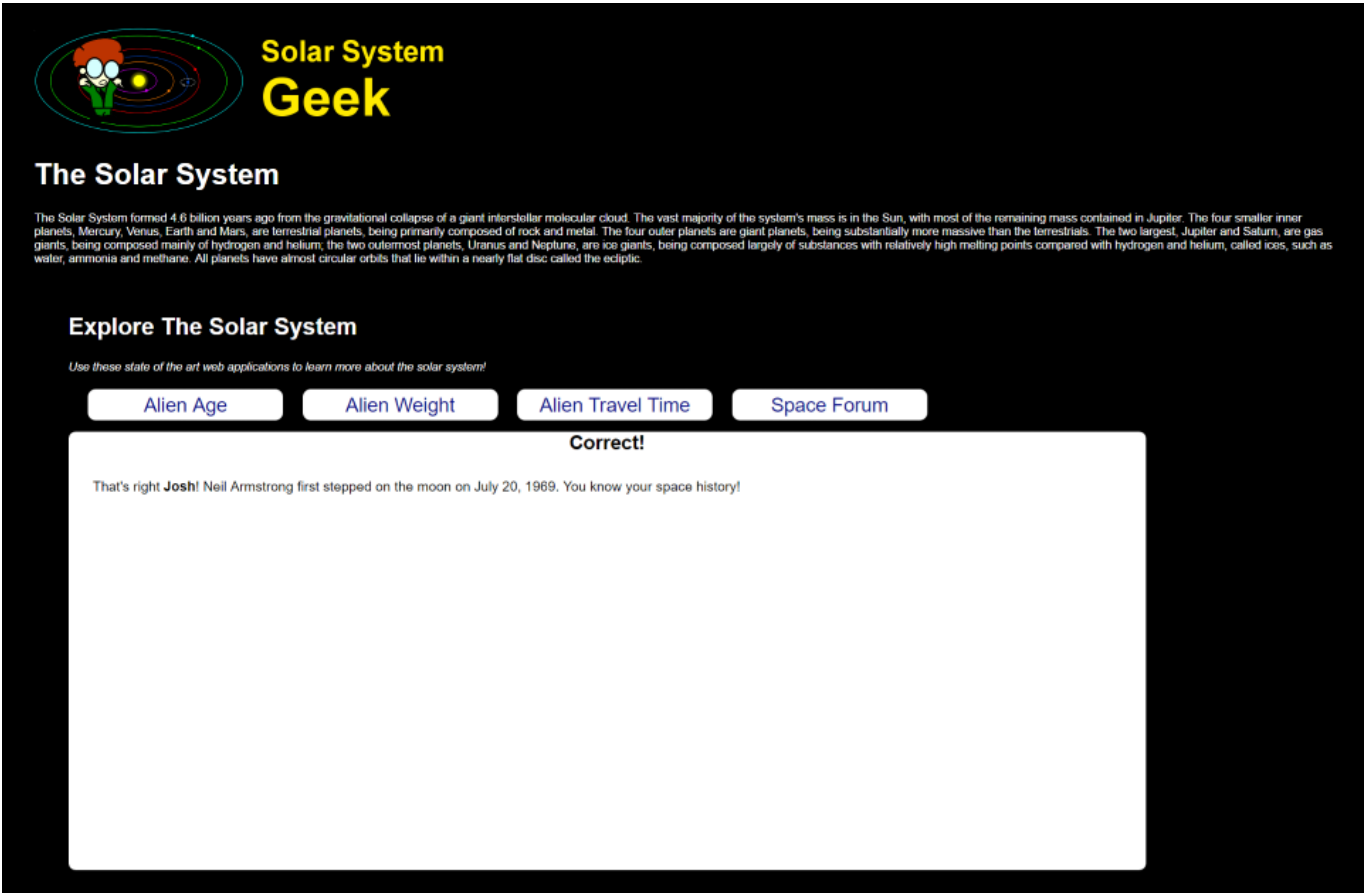
Each visitor needs to provide their name, and answer a space trivia question.

Leverage HTTP POST and the Post-Redirect-Get pattern to

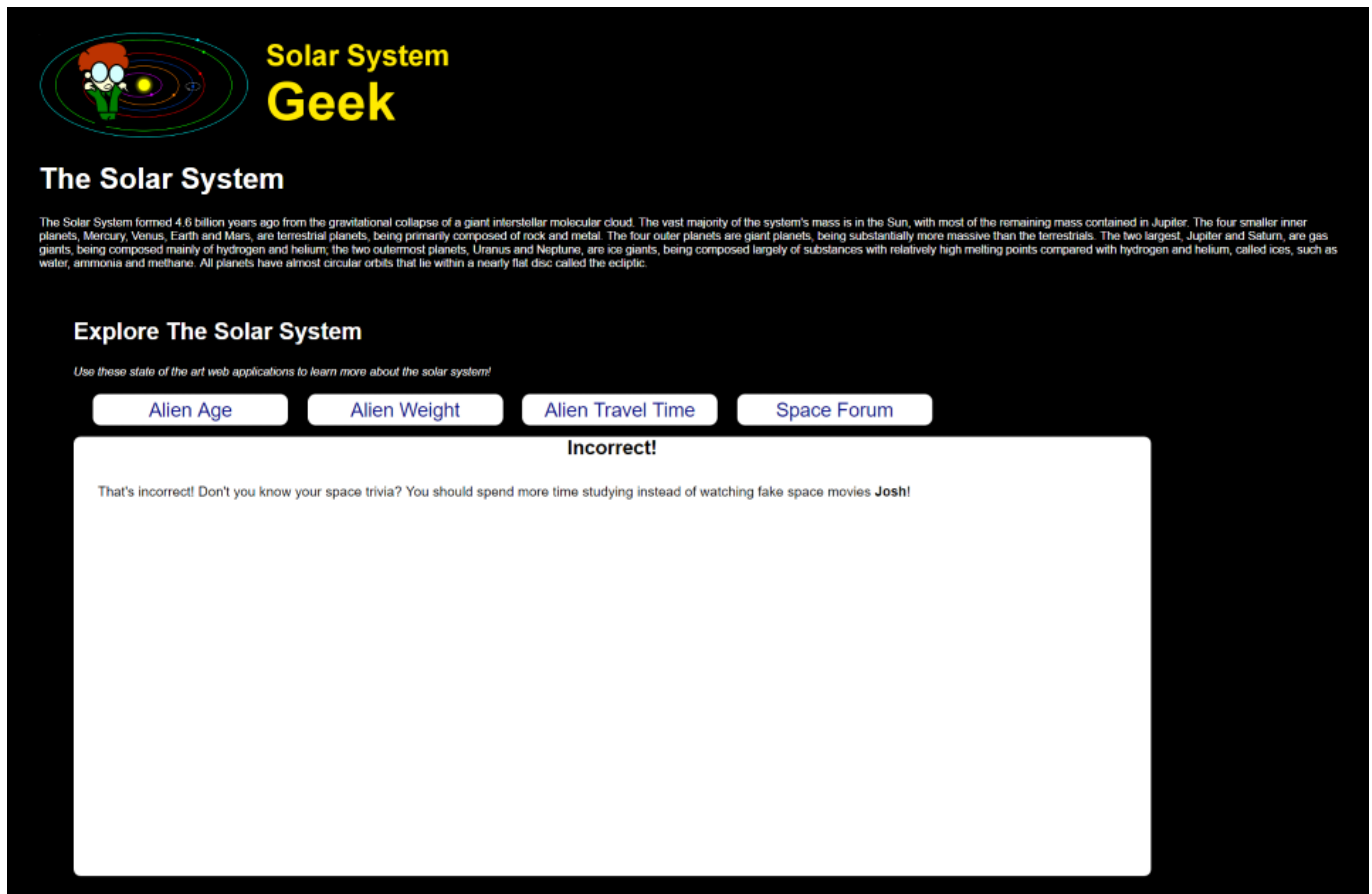
1. Show the user the form
2. Have the user post their answer
3. Redirect the user to the correct action based on the input



When the user answers it correctly, they see a Correct! page that confirms their answer.



When the user answers incorrectly, they see an Incorrect! page telling them that they are incorrect.



Day 3 Shopping Cart

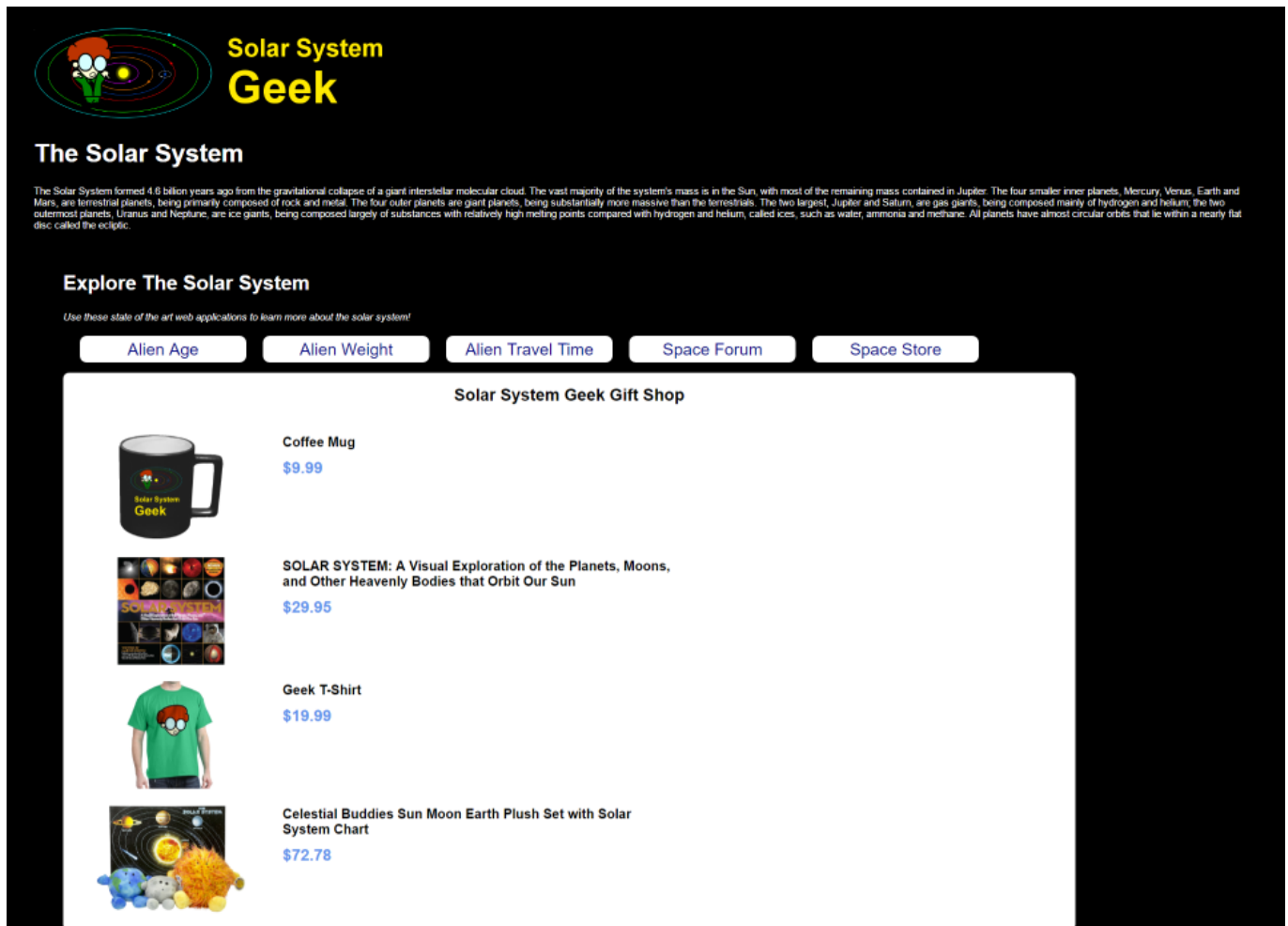
You'll be creating a shopping cart that allows your website visitor the ability to view products, select a product and add a user-specified quantity to the shopping cart.

Product List Page

The product listing page displays all of the inventory that the SSGeek shop contains.

Requirements

- When the user clicks on the image of a product they are navigated to the **Product Detail** page




Product Detail Page

The product detail page displays the data for a specific product and allows users to add products to their shopping cart.

Requirements

- When the user enters a quantity into the textbox and *presses Enter* or *presses Add to Cart* the product is added to their shopping cart
- After the user adds an item to their shopping cart, they are redirected to the View Cart page



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Solar System Geek Gift Shop



Celestial Buddies Sun Moon Earth Plush Set with Solar System Chart

\$72.78

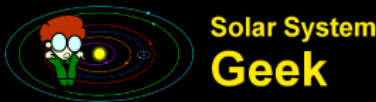
Celestial Buddies is an original line of plush characters each personifying a celestial body occupying our heavens. Each character comes with a tag showing the actual object it personifies and some fun facts to give the toy educational value. This collection contains the 3 celestial buddies we are most aware of - the sun (9 inches), moon (5 inches) and Earth (6 inches). Also included is a chart of the Solar System, to help your child identify where the buddies are located in our universe.

Quantity to buy [Add to Cart](#)

View Shopping Cart

The View Shopping Cart page displays all of the items that are in the visitor's shopping cart to purchase.

Requirements



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Solar System Geek Gift Shop

	Name	Price	Qty.	Total
	Celestial Buddies Sun Moon Earth Plush Set with Solar System Chart	\$72.78	2	\$145.56
	Coffee Mug	\$9.99	1	\$9.99
	Geek T-Shirt	\$19.99	1	\$19.99
Grand Total				\$175.54
				Check out