

MVC Controllers - Pair Exercise

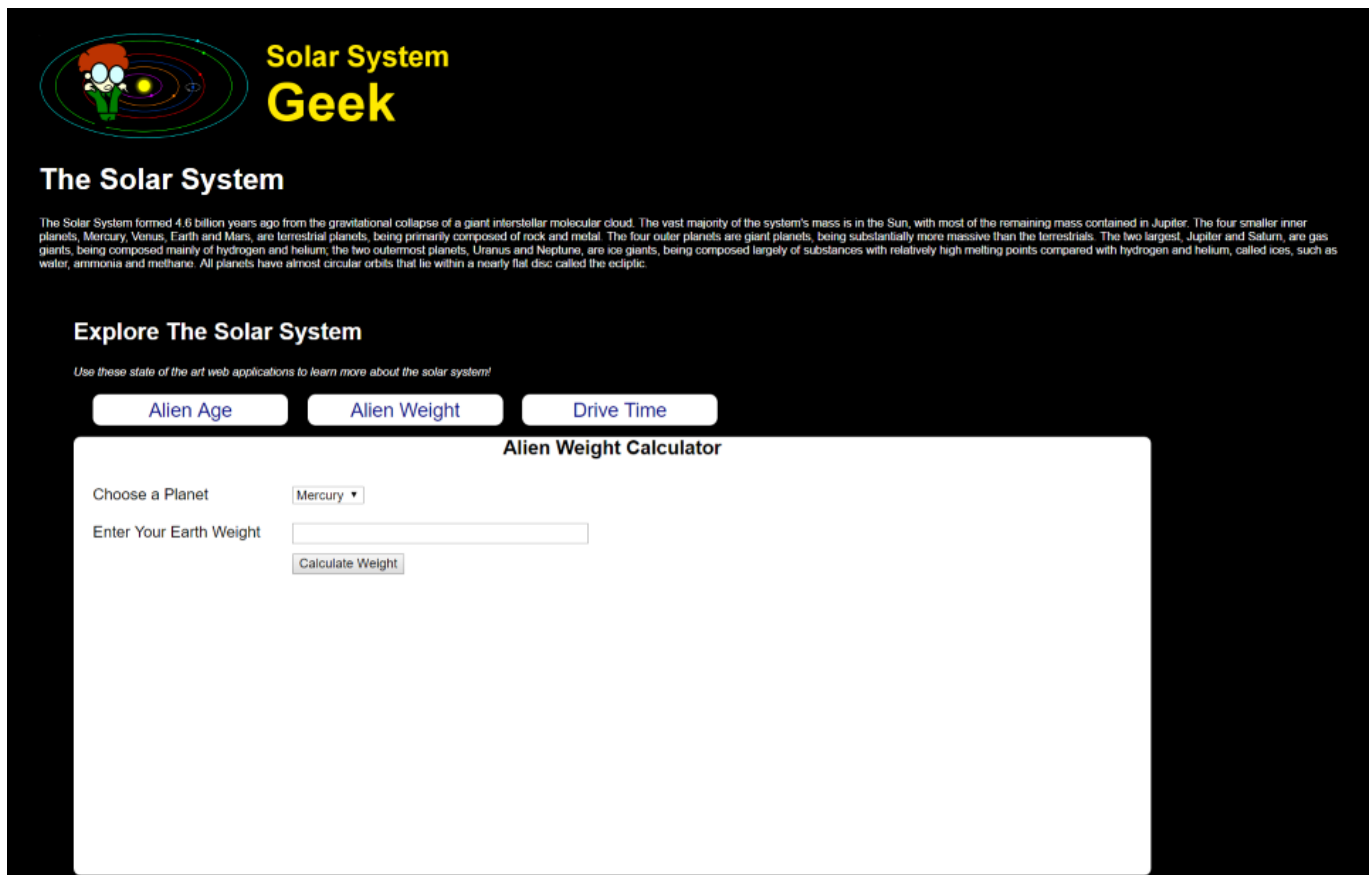
Day 1 - Monday - Solar System Geek Calculators

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

1. 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



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. The text "Solar System Geek" is in yellow. Below this is the heading "The Solar System" followed by a paragraph of text about the solar system's formation. Underneath is the section "Explore The Solar System" with the subtext "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 "Alien Weight" button is highlighted. Below these buttons is a white box titled "Alien Weight Calculator". Inside this box, there is a "Choose a Planet" dropdown menu with "Mercury" selected, an "Enter Your Earth Weight" text input field, and a "Calculate Weight" button.

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.

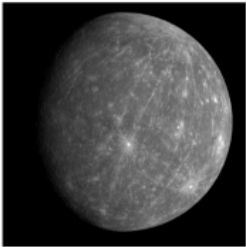
Explore The Solar System

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

Alien Age

Alien Weight

Drive Time

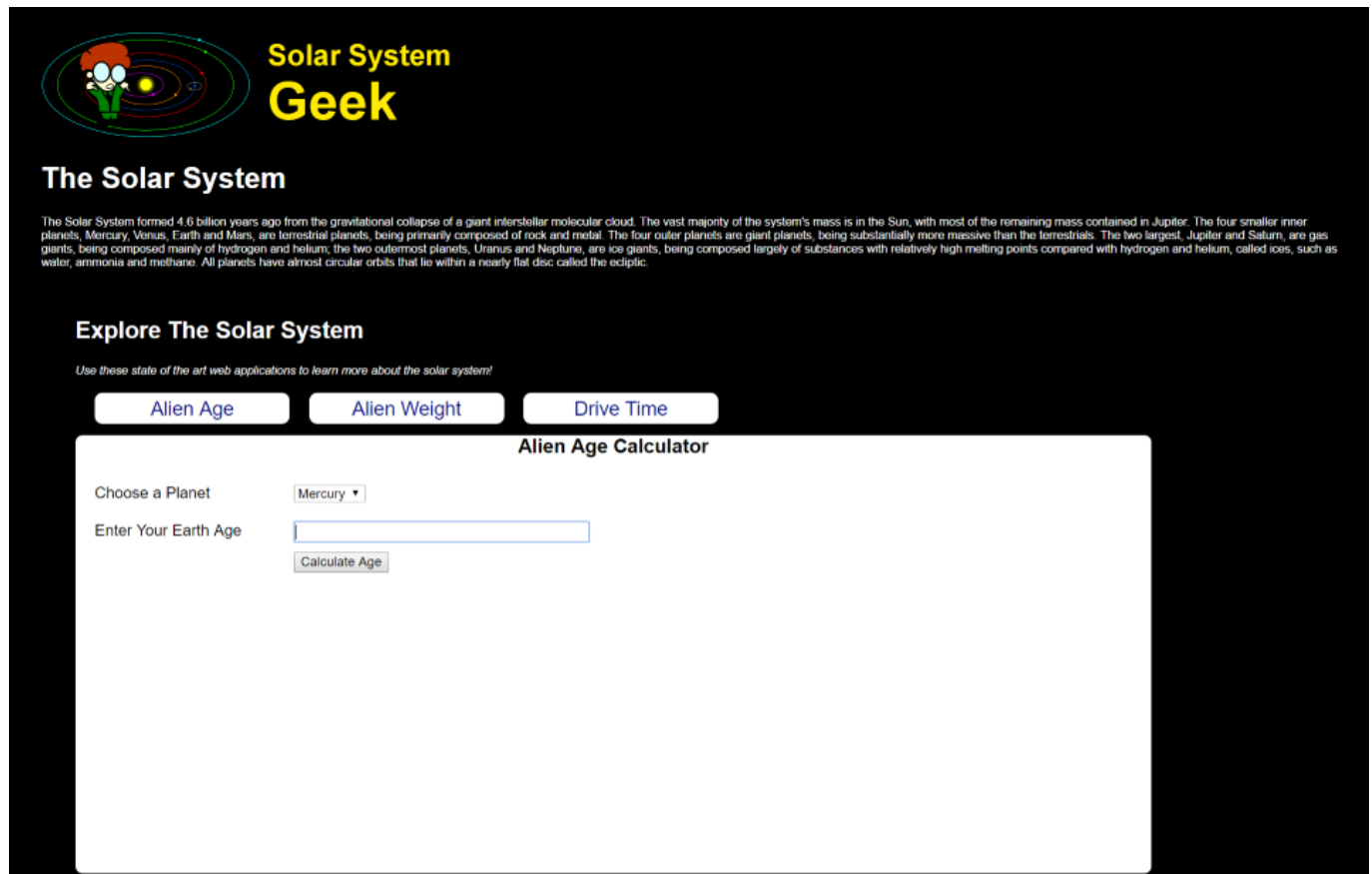


If you are 172 lbs on planet Earth, you would weigh 63.64 lbs on Mercury.

2. 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



The screenshot shows a web application titled "Solar System Geek" with a logo of a cartoon alien. Below the logo is a section titled "The Solar System" with a paragraph of text about the formation of the solar system. Underneath is a section titled "Explore The Solar System" with a sub-header "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 "Alien Age" button is selected, and the "Alien Age Calculator" form is displayed. The form has a "Choose a Planet" dropdown menu with "Mercury" selected, an "Enter Your Earth Age" input field, and a "Calculate Age" button.

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](#)

Alien Age Calculator

Choose a Planet: Mercury ▼

Enter Your Earth Age:

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.

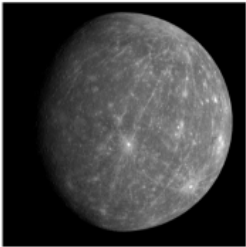
Explore The Solar System

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

Alien Age

Alien Weight

Drive Time



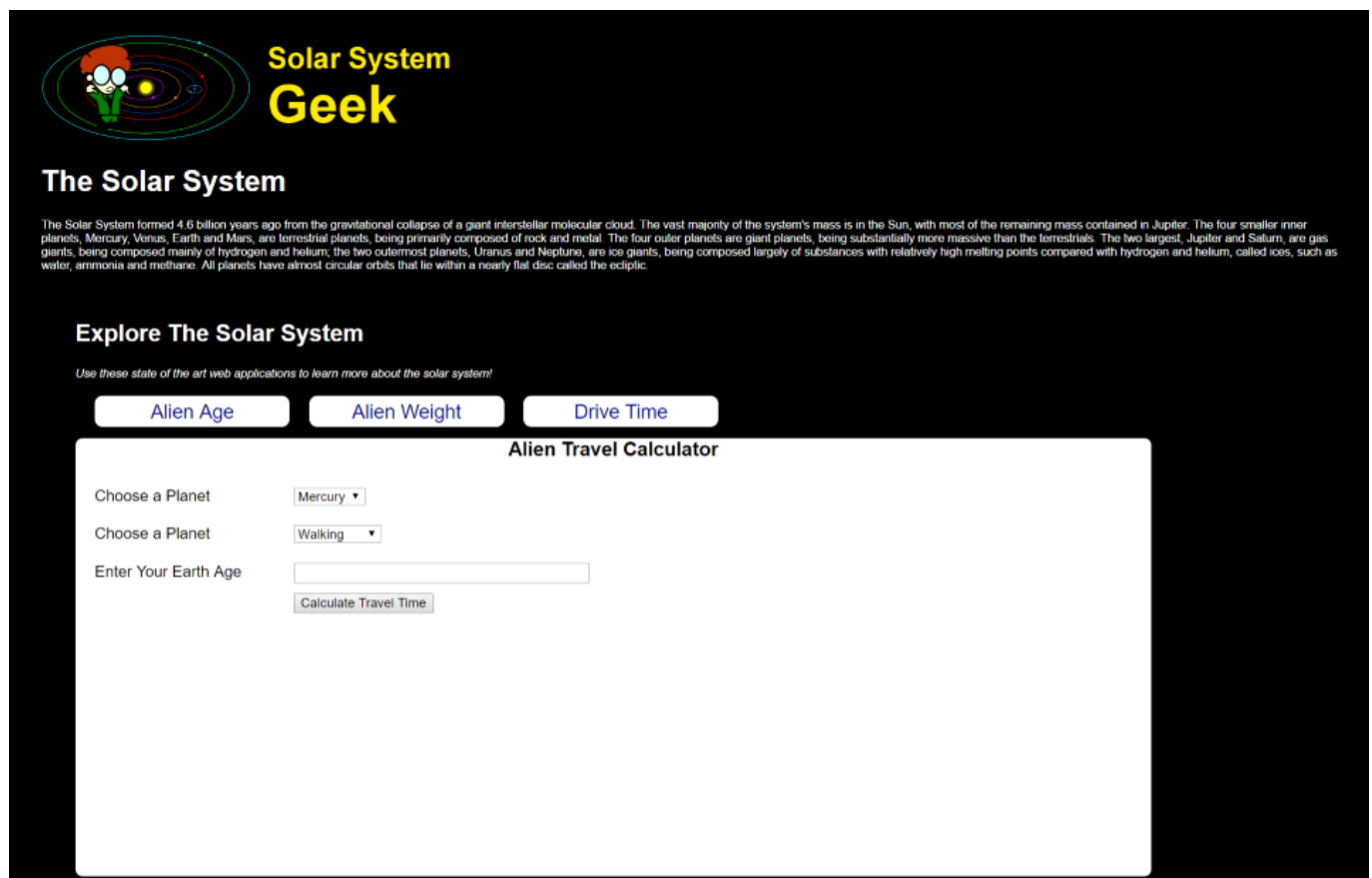
If you are 36 years old on planet Earth, then you are **149.49 Mercury years old.**

3. 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 red hair and a green body, standing next to a diagram of the solar system. The text 'Solar System Geek' is in yellow. Below this is the heading 'The Solar System' in white. A paragraph of text describes the formation of the solar system. Below this is the heading 'Explore The Solar System' in white. Underneath is a line of text: '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'. Below these is a white box titled 'Alien Travel Calculator'. Inside this box, there are two dropdown menus: 'Choose a Planet' (set to 'Mercury') and 'Choose a Planet' (set to 'Walking'). Below these is a text input field labeled 'Enter Your Earth Age'. At the bottom of the box is a button labeled 'Calculate Travel Time'.

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.

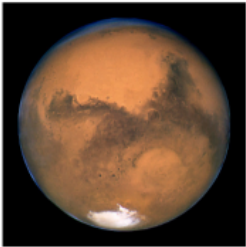
Explore The Solar System

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

Alien Age

Alien Weight

Drive Time



Traveling by bullet train you will reach Mars in 27.78 years. You will be 58.78 years old.