

Days Alive- an age and death calculator in JavaScript

Let's make an age calculator program, this version will be in javascript but there is another in C#, if you do both, you should see how the languages differ. Our program is going to be relatively simple- you input your birthday and it calculates how old you are in days and when you turn 10000 days old.

Let's take a quick look at the existing HTML document from the included files, open it in an editor of your choice, even good old notepad will do.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org,
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
<title>Days Alive</title>
<script language="javascript" type="text/javascript">

</script>

</head>
<body>
    <div id="headerTitle">Age Calculator</div>
    <div class="contentText">
        <h1>Number of Days Alive</h1>
        <br>
        <hr/>
        <label>Birthday<input type="date" name="bday" id="bday",
        <div id="days"></div>
        <div id="til10k"></div>

|
<button onclick="age()">Calc Age</button>
</br>

<script type="text/javascript">

</script>
</body>
</html>
```

The first few lines simply set up the file, giving the type of document, letting the browser know how everything is defined and providing a title for the page.

In the body part of the file there are a number of divs- dividers or divisions for those of you with a rude mind. These contain the various bits we're using to calculate our age info. First there's a heading or two, then the bit we really want to look at is the input field.

The input field just lets you get player input, simple enough, but this one has been defined as type date, this means most browsers will happily give you a date picker for ease of us and it saves the result of that as correct format for an easy conversion to date.

Following on from that are two divs that are empty; this is where we'll write out output, and then there is a button that will call the function we are going to create.

JavaScript

So, now we're familiar with the HTML, let's write some JavaScript.

In between either of the <Script> tags, create a new javascript function;

```
function age()
{
}
```

This is the function, the code part, that is going to be called when we press the button.

Inside it, set up 3 variables, bday, today and age.

```
function age()
{
    var bday;
    var today;
    var age;
```

These variables are fairly self explanatory, what we'll do is use some built in functions from JavaScript.

```
var bday= new Date(document.getElementById("bday").value);
var today = (new Date().getTime());
var age= today-(bday.getTime());
```

Here, bday now gets set to a new date using the DOM to get the value of the element "bday" – which is the input date from the user. We just have to tell it, explicitly that it is a date.

getTime() is a javascript function that returns the number of milliseconds between midnight of January 1, 1970 and the specified date. A millisecond is a thousands of a second, it's going to be a big big number. The second line just says that we set today to be the time between 1/1/1970 and today. We can then combine that with getting the same thing but between birthday and that date and subtract them. Meaning we get the person's age, in milliseconds.

Now, if we wanted to, we could just post this up, but milliseconds isn't something we can really deal with as humans, so instead, we write some code to convert it to days.

```
var milliInADay = 1000*60*60*24;
var days= age/milliInADay;
var milli10k = 10000 * milliInADay;
var milliTil10k = milli10k-age;
var daysTil10k = milliTil10k/milliInADay;
```

We create some new variables for this and do a bit of math.

- 1) milliseconds in a second, seconds in a minute, minutes in an hour, hours in a day, gives us milliseconds in a day
- 2) number of days alive is the age in milliseconds divided by the number of milliseconds in a day
- 3) Then we work out milliseconds in 10000 days
- 4) Then we work out milliseconds until 10000 days by taking age away from this
- 5) Then, we use these two bits of information to calculate how many days until you are 10k

So, now we can get how old they are in days and how long until they'll be 10,000 years old in milliseconds, so let's convert that back to date.

```
var date10k = new Date(milli10k+bday.getTime());
```

Now, let's split it down so we can format it how we want (note, getMonth returns January as the 0 months, that's why we add 1).

```
var month = date10k.getMonth() + 1
var day = date10k.getDate()
var year = date10k.getFullYear()
```

Finally, we can output it by finding the appropriate HTML element and printing out a message (the bit in quotes "") + a rounded version of days.

```
document.getElementById("days").innerHTML="Congratulations, you're " +Math.round(days)+" days old";
document.getElementById("til10k").innerHTML="you'll be 10k days old on "+day+"/"+month+"/"+year;
```

Try it, open it up in a browser and enter the date of birth, because of the way Javascript functions we use work if you're over 45, this might not work.

Well that's an age calculator, basic and using JavaScript, we'll build and show another one using C# to compare them.

Death Calculator

Good news everybody, I've created a death clock! Ok so less Futurama but let's add a slightly manic twists to it, after all, one thing I've learnt over the last few years, programmers are a manic lot. So, let's work out how old you are and, if you die when average, how long you've got left to live. The average age of death in the UK is 81.5 years, if you're from elsewhere a quick google search will bring it up.

So, to add a death calculator we'll need to add two things, some code to work it out obviously, but also a div to place it.

```
<div id="days"></div>
<div id="til10k"></div>
<div id="tilDeath"></div>
```

I've added a new div just below the "till10k" one, this is where we'll append in our result, we could also add a new button to link in to the JavaScript and have two buttons. I'm lazy, I'll add it all in some existing JavaScript.

There's a number of ways to work out the difference between now and "death date" but we'll go with the easy method. How many days in 81.5 years, now subtract how many days you've been alive, that's your days to live.

```
var daysin81 = (81.5*365.25);
var daysTilDie = daysin81-days;
```

Nice and easy bit of JavaScript, work out how many days in 81.5 years, then subtract days from that (remember days is the days you've been alive). This gives you days til

```
document.getElementById("days").innerHTML="Congratulations, you're " +Math.round(days)+" days old";
document.getElementById("til10k").innerHTML="you'll be 10k days old on "+day+"/"+month+"/"+year;
document.getElementById("tilDeath").innerHTML="If you die at the average age, you've "+Math.round(daysTilDie)+" left alive!";
```

die. We then output this by writing it to the innerHTML element of "tilDeath" that we added earlier, I've rounded it up but you can choose how you want to display it.

Clearly this isn't accurate but it's a bit of fun and shows you how to do some cool things in JavaScript. Plus, who doesn't love a death clock. You can extend this, why not take a look at some of the other web tutorials, maybe add some CSS, style it out.