ChildScript.com

Lesson 5 - Building a Search Engine

Expected Time: 45 - 60 minutes.

Aspect of National Curriculum Programme of Study covered:

KS2 objective a - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

KS2 objective b- Use sequence, selection and repetition in programs; work with variables and various input and output

KS2 objective e - Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

KS2 objective f - Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Objectives
Student will be able to;
- design a programme where a particular outcome will happen based upon an action inputted by the user
- select, use and combine a variety of software and programs to create a required outcome
- design and write a programme which simulates a virtual environment.

Ongoing objectives
- Use technology respectfully and safely
- Understand that communication online can be seen by others
- Evaluate and select digital online content responsibly and discerningly

Activity

Step 1. Google is the world's leading search engine. First built in 1998 it now processes a billion search results a day. Lets go ahead and build our own custom Google Search Engine. Start by opening up a new whiteboard session Click here to open in a new tab

ChildScript.com

Step 2. Click on the left hand box on the whiteboard page and type in the following commands.

```
title My Google
formfield text #searchform
button Search
  target #searchform
  getvalue myvariable
 setstring mylink "https://google.com/#q="+myvariable
 visit new $mylink
end button
```

Step 3. You don't have to call it My Google, you can name your search engine what you want just remember to keep the title function as the first word of the line. Notice how there are two spaces before each command between the button and end button function. This is because this is a separate code block that only runs when the button is pressed. Be careful when entering the setstring command as the google URL is a little bit tricky and you have to get the speech marks and symbols in the right place.

Note: You can break down the URL into parts. The https:// is protocol and the S on the end means it is a secured connection. The google.com is the domain name. The / is the directory or folder, note normally this would be followed by something like index.htm or mypage.html which is the page or file, that isn't here because we are targeting the main page for Google. The rest of URL is a page query which is a request for information to that page. So if you work from left to right you have a domain name which leads to a webserver or remote computer. Then the directory (folder) and page address which leads to a web page which is just a file on that server. Then a query which is processed by that page.

Click reload and you should be presented with your own search engine like below:

Step 4. Go ahead and try it out. You simply place your search term in the form field and click the Search button.

Step 5. What a lot of people don't know is that Goolge has built in advanced search operators which you can use to make your searches more powerful. Lets add a link to our search engine so we can see these when we want.

```
target reset
newline
link Advanced https://support.google.com/websearch/answer/2466433
```

Step 6. So first we do a target reset so we are targeting the main page again. Then we add a newline or line break. We then add a link to Googles search help page. You can see there are a lot of different things you can do within a search query. The most helpful ones are - (minus symbol) which will remove any results containing what you put in after the minus. A * (star) which is used as a wildcard and can be any word. site:http://instagram.com query here, is a nother good one which lets you bring up search results for only one site. Try some advanced search terms in your new search engine. You can even publish it to the web if you like and use it again whenever you want.

ChildScript.com

ChildScript.com - Lesson Notes

Lesson 5 - Building a Search Engine

This lesson allows the children to create a button which is controlled by the user, when pressed a particular goal is achieved. The lesson also gives the children the opportunity to learn about URL's

By the end of the lesson the children should have created a button which, when pressed, links to google search engine and displays results.
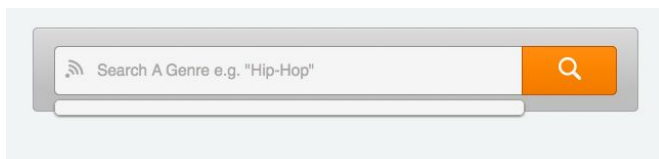
<u>Safety online</u>
Before beginning this lesson it is essential that the children understand about safety online. Especially when publishing material or using images from the web.

<u>Formfield</u>
A formfield is the box where you enter a word, sentence or URL which you wish the search engine to search for.
For example

When entering a formfield into a code you must give it a name so it can be referred to later on in the code. The name is given after a #
For example
formfield text #searchform

ChildScript.com

Button

Buttons are used to allow the user to control the action they require. Only when a button is pressed will the computer run the code block between the button function and the end button function. The button also needs a title. The title of the button is decided upon by the coder. It will be displayed on the screen for the user to see.

For example, the button below can be identified with the word Go.

```
button Go
  // Code to run here
end button
```
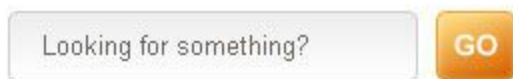

Variables

Variables can be confusing at first. Think of them just as places to store data. A simple example is:

```
set $myvariable Hello World
type $myvariable
```

In the above code we are placing the text "Hello World" within a variable. The text is stored by the computer and we can get it back at any time. In the second command we type out $myvariable which will write "Hello World" on the screen.

We have two variables within the code block myvariable and mylink.
The getvalue function first collects the search term from the formfield.
The setstring function then adds on the google address.

Challenge

Try using Googles advanced search operators and discussing the importance of having safe search on. Assess the quality of the results provided and look at how you can predict the quality of different search results. i.e. Domains like wikipedia.org tend to have better information.