Girls' Programming Network

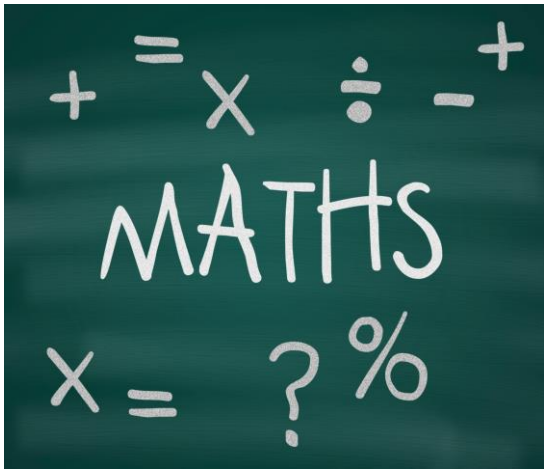
2017

Sassy Security Chatbots!

More security!

So our secret information is pretty secure right now. But wait, what if a nosey younger sibling finds out our secret password!!

Let's add in a test to catch people out, we'll make an intelligence test that will be hard for little kids to crack!



Part 6: Intelligence Test Time

We really want to make sure that only authorised users can access our secret server! Add in another test to make absolutely sure that the user is clever enough to have access.

Goal: Add a maths question to make sure they are smart enough!!

Task 6.1: Ask the question

Step 1) We're going to put new code <u>in between</u> your password while loop and your password checking if statement. **Find that spot!**

Step 2) Ask the user a maths question that test if they can do addition
Something like `"What is 5 plus 7?"`
Hint: *Use helper to ask a question, and don't forget the question mark!*

Step 3) Create a variable called `real_answer`, store the answer to your question in it

Step 4) Helper gives the users answer back as a string! But our `real_answer` is a integer!
We need to convert the user's answer to an integer (a number) so we can compare it to the `real_answer`.
Hint: *Remember how `int("6")` gives us the number 6 back , store the answer in a new variable!*

This could look like:

```
What is 5 plus 7? 13
```

Task 6.2: Check the answer!

We need to check the answer, then store whether they passed or not!
Step 1) Check if the users answer is equal to `real_answer` (***Hint:*** *`if` statement)*
If they passed:
- Create variable called `test_result`, store the word "`passed`" in it
- print a nice message to the user like:

Step 2) If they didn't pass (***Hint:*** *Add an `else` statement to your `if` statement)*
- Create variable called `test_result`, store the word "`failed`" in it
- print a nice message to the user like

It should something look like:

If the get it right:

```
What is 5 plus 7? 12
Well you got it this time!
```

If they get it wrong:

```
What is 5 plus 7? 10
Looks like someone needs to practice arithmetic :P
```

Task 6.3: Secure the secret information

Use the test result to help decide what secret info they get to see!

Step 1) Go to the if-elif-else statement at the end of your file that displays the different secret information

Step 2) Real secret info: We only want to display the real secret information if:
They entered the real secret password *`and`* their `test_result` is "`passed`"
(***Hint:*** *your `if` statement)*

Step 3) Decoy info: We only want to display the decoy information if:
They entered the decoy password
(***Hint:*** *your `elif` statement)*

Step 4) The *`else`* stays the same!

Bonus) Further decoy options: Do you want to show the decoy information if they have the write password, but if they fail the test? What other times could we show the decoy information. Change your code to show the decoy information when you want to!

Part 7: Maths Generator!!

We want to make sure that the user can't just remember the answer to the maths question, they have to work out the answer. This means that we need the question to change every time that the user tries to access the secret server.

Goal: Make it so it asks a new maths questions every time using random numbers!

Task 7.1: Choosing random numbers!!

Step 1) At the top of your file write `import random`
this gives us access to things that helps us chose things randomly

Step 2) We want to choose 2 numbers randomly.
If we want to choose a number from 1, 2 or 3 we can write:

```
num1 = random.choice([1, 2, 3])
```

The randomly chosen number is stored in `num1`

Add the code for `num1`, but make it choose from the numbers 1 to 10.
Want to see your random numbers? Try printing them out!

Step 3) Repeat it to get a second number `num2`

Task 7.2: A Better Question and Answer

Step 1) Let's update the answer to match our random numbers! Use the variable `real_answer` that you created in Task 5.1, but instead calculate the answer using `num1` and `num2`.
Hint: We just need to add them together and store them in `real_answer`!

Step 2) Update the question to use `num1` **and** `num2` instead of the two numbers you hard-coded in before.
Hint: *Remember we can't add integers (numbers) to strings.* `str(6)` gives *us back* `"6"` as a string. We can use this to add the rest of the question to our numbers!

★Bonus 7.3: Bigger Numbers!★

Ten numbers just aren't enough!! We want more numbers for bigger harder questions, but don't want to spend a lot of time writing out lots of numbers that's boring!

We can use a Python function called range.
Writing `range(1, 6)` is the equivalent of `[1, 2, 3, 4, 5]`
It only printed up to 5, but you said 6!! Yep that's right, it doesn't include the last number!

We can change our line of code:

```
num1 = random.choice([1, 2, 3])
```

Use range instead of `[1, 2, 3]` to ask maths questions with numbers 1 to 100