Computing

Lesson 3: String Handling II

Programming Part 5: Strings and Lists

Ben Garside

Substrings - code snippets

Access the substring

```
word[1:3]
```

Find a substring using the in operator

```
if "12" in username:
```

Concatenate multiple strings

```
fish = "Flounder"
name = "Darwin"
fishname = fish + name
```

Check if a character is a number

```
character.isdecimal()
```

Task 1 part 1 - Username

A school technician requires a program that will generate usernames for the new Year 7 cohort. Each username should have:

- The starting year
- The surname
- The first initial

The username should look like this: 20SurnameInitial so if a learner starts in the year 2020 and their first name is Ronald and their last name is Smith then their username would be: 20SmithR

Create a system that will allow a user to enter their starting year, surname and first name. The system should then output the username in the format shown above.

Paste your completed code on the following slide

Task 1 part 1 - Your code

Task 1 part 2 - Year group checker

A school technician requires a program that will let teachers know which year group a learner is in based on their username. The program should:

- Prompt the user to enter a username
- Check the first two digits of the username
- Reveal which year group the learner is in

Here is a table to show the start digits against the year group. This will help you with your program:

20	Year 7
19	Year 8
18	Year 9
17	Year 10
16	Year 11

Paste your completed code on the following slide

Task 1 part 2 - Your code

Task 1 part 3 - Password checker

A school technician requires a program that will check if a password contains a number and is at least 8 characters. The program should:

- Prompt the user to enter a password
- Check the length of the password meets the requirements
- Check that there is at least 1 number in the password
- Continue to ask for a password until these requirements are met

Paste your completed code on the following slide

Task 1 part 3 - Your code

Code snippets

Takes a decimal value and returns the ASCII equivalent character

```
chr(66)
```

Takes a character and returns the ASCII equivalent decimal

```
ord(“C”)
```

Concatenate a string (add a new string to a string)

```
message = message + convert
```

Mini program that takes a decimal value, converts it to a character and adds it to a string

```
message = ""
number = int(input())
convert = chr(number)
message = message + convert
print(message)
```


Task 2 - Secret message

Two friends have decided to send secret messages to each other using ASCII codes (oaknat.uk/comp-prgu-27-a2-h) in place of the characters. A program needs to be created so that a user can type in each code in turn and then reveal the secret message.

The program should:

- Allow the user to type a decimal number and press enter
- Convert the decimal number to its equivalent character
- Add the character to a new string variable
- Continue to ask for a new decimal number until the user states that they have finished.
- Display the decoded secret message

Task 2 - Secret message - Tips

Tip: a while loop will be needed here so that it will continue to ask for a new decimal number until the user has finished. Revisit old programs that use while loops to help you with this.

Tip: use the code snippets on page 1 to help you.

Tip: break the problem down, try not to solve it all in one go.

Here is the first secret message for you to use for testing purposes:

```
77, 101, 101, 116, 32, 105, 110, 32, 114, 111, 111, 109, 32, 50
```

Paste your completed code on the following slide

Task 2 - Your code