Structuring Data

With functions and procedures, you can structure your code to manage the complexity of your program's logic. By exploring how to organise your data, you will be able to make the *things* associated with your program clearer. This will make your coding tasks easier, as you start to work with these larger data entities.

Learning Goals

To complete this task, you need to demonstrate that you can do the following:

- Create **structs** to organise your data into meaningful entities.
- Create **enumerations** to capture discrete values where appropriate.
- Use your custom types to with local variables, fields, parameters, and function return types.

Focus

- **Programming concepts:** Focus on using **structs** and **enums** to manage the data within your application. See how you can use these to create the entities/things within your program's digital reality.
- **Programming process**: Focus on using data design to aid the process of software creation. See how this helps inform the functionality and makes it easier to share data between functions and procedures.
- **Coding**: Focus on memorising the language rules for declaring these new data types.
- **Professional Characteristics:** Focus on your timeliness, as we get toward the end of the pass tasks you want to make sure you get these in with sufficient time for your tutor to give you feedback, and for you to act upon this feedback.

Your Task

For this task you will need to submit the following:

- A PDF document containing:
  - Summaries and reflections.
  - At least two (2) screenshots :
    - Revised Fly Catch
    - Your Test Your Knowledge program.
  - Learning Journey and Resources
- Source code for:
  - The revised Fly Catch
  - Your chosen program from the Test Your Knowledge activities

1. Complete Learning Activities

Work through these steps to develop and demonstrate your understanding. Aim to demonstrate, to yourself and others, that you have achieved the learning goals.

1. Everything you need is in Chapter 3 Structuring Data from Part 2 of the Programmer's Field Guide.
2. Build at least two small programs to test how structs and enums work
   a. Create a small program with a struct – use it in a parameter, and as a function return type.
   b. Create a small program with an enum – use it in a parameter, as a function return type, convert to a string and from user input.
3. Build the revised Fly Catch program. **Capture** notes on your learning as you progress, indicating if and where you need to review the existing solutions.
4. Complete one of the Test Your Knowledge activities.

5. Prepare your summary, making sure to cover all learning goals and related concepts. Remember that this is a personal summary that demonstrates your understanding of the concepts.
6. Prepare your reflections by responding to the following:
    - How do you know you have achieved the learning goals?
    - What is the most important thing you learned from this and why?
7. Capture your learning journey and collate your evidence of study and practice.

2. Upload Your Submission & Engage with Feedback

Mark the task as **Ready for Feedback** and upload the required files. Make sure to keep copies of these in case you need to resubmit. Then engage with the feedback you receive and get the task Complete!

If you are asked to resubmit, make sure your subsequent submission includes a comment that describes how you have addressed the feedback you received. This needs to demonstrate how you have addressed all the aspects indicated by your tutor in their feedback on your learning. If you don't understand the feedback, ask for clarification. If it is too generic, ask specific questions, only you know what feedback you need, take charge of it.