## **Background and Primitive Datatypes: Activity 1**

### **JIT vs Compiled**

Some of these terms may be new to you but that’s ok! In this activity sheet you’ll be provided with several examples of just-in-time (JIT) interpretation and compiled activities, as well as objects and instances.

On the next page will be several examples of activities. You’ll need to decide whether or not these are examples of JIT or compiled languages.

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| **Example** | **JIT or Compiled?** |
| The plot line of the movie “Arrival” involves humans and aliens attempting to talk to each other. They don’t just do word-for-word translations, they fundamentally have different ways of thinking about the world.   When the main character attempts to understand the aliens, she translates line-by-line what they’re saying to make it understandable to those around her. | JIT |
| Later on in the movie “Arrival” the character attempts to communicate back to the aliens. She works out what she wants to say ahead of time, creates the translation and then presents it to the aliens. | Compiled |
| The Babel Fish. If you’re unfamiliar with the Babel Fish, it’s an entity in “Hitchhiker’s Guide to the Galaxy”. Specifically, it allows an individual to “instantly understand anything said to you in any form of language”. It directly translates language in real-time, by taking the sound waves in your ear and translating them to your own language. | JIT |
| Book Publishers. When an author writes a book and sends it off to a publisher to be printed around the world, it’ll only be in one or two languages. To make the book available to other markets around the world, the publisher will translate the written material and then distribute copies of that. The original book is translated once into a language, and that translated copy may only be consumed by individuals who can read that language. | Compiled |
| An example closer to home would be translators in the UN. Delegations from all over the world converse with each other in one of six official languages, with the speech interpreted in real-time into the other official languages by language professionals. | JIT |

### **Object-Orientated-Programming**

Below, you’ll be provided with space to define 3 objects and an instance of each. Properties are items which an object must have, whereas methods are things that you can do with the object.

**Example**

An example might be a Kettle. The object will be “Kettle”. If we think about a Kettle should common properties might be:

* Does it have a lid?
* What’s the colour of the kettle?
* What material is made from?

Whereas the methods could be:

* Boil water
* Open lid
* Close lid

The above is our object, or our blueprint. Now kettles come in all shapes are sizes but fundamentally every single one will have the above properties and methods.

For example, my Kettle at home has a lid, it’s white and it’s made from plastic. I can boil water in it, open the lid and close the lid. Another person might have a black kettle with a lid made from stainless steel, whilst another might have a blue glass kettle with a lid. Fundamentally, these all have the same properties and methods but each instance is unique is how it goes about implementing these.

Use the space below and the following sheet to define three objects and some example instances: