Outline

This preparatory task is about allowing us to have some hands-on experience in seeing you develop code, how you think through problems and how you can work as a team with someone from BJSS.

As we’re in the unusual place of having to do this remotely we’ll be asking you to spend some time ahead of the session to get some code together which we can use as a basis for pair programming. We appreciate this is an extra ask, but it avoids the alternative where we provide the starter code and it proves problematic to get running on your machine or is not in a language with which you are familiar i.e. it is the lesser of two evils.

It is not particularly important how much of the task you are able to code ahead of time, however you should have something which runs and acts as a starting point i.e. having very little functionality in a working codebase is better than something near-fully functional which doesn’t compile/run.

Task

Buying a house in the UK incurs a tax which varies according to the price of the house and circumstances of the purchaser e.g. a higher rate is paid if you are buying a second home. In Scotland this is called Land and Buildings Transaction Tax (LBTT), but you may know it as Stamp Duty (The equivalent tax in England).

We need you to write a piece of code which given the price of a house will calculate the LBBT due to be paid. A key part of any technical project is gaining understanding in unfamiliar business domains, for this reason we do not include how to calculate LBTT as part of this specification. LBTT can be complex to calculate as it varies according to the circumstances of the buyer so for simplicity you may assume:

* The buyer of the house currently owns a property and lives in it as their main residence
* The buyer does not conduct any kind of business activity from their house i.e. it is purely for personal use
* The buyer does not own any other properties
* At the end of the purchase the buyer will still only own one house i.e. they intent to sell their current home at the same date they buy the new one

**Note**: Across the UK changes to how this tax is calculated have been made recently, or in the case of Scotland are being changed this week. We are happy for you to use the old or the new calculation but advise you use as the older one as it is simpler to understand and information more readily available. You will not be penalised in any way for whichever version you implement.

Expectations on the code

We are looking for you to prepare a start-for-ten codebase which we can do some pair programming to add functionality. At a minimum the code should:

* Compile without errors
* Have Unit tests which are runnable (either via an IDE or command line)
* Have Units tests which pass   
  *In order to assist in keeping the functionality as simple as possible the Unit tests do not need to cover all possible scenarios, simply that they pass for the scenario they cover in your code e.g. if you only have code which works for a certain price range of house then only this needs to be covered in the tests*

For the pair programming to be achievable in a small-time frame we ask you **do not** move far beyond this minimum e.g. adding a UI or other ancillary capabilities. The pair programming will focus on adding more logic to the LBBT calculation, so anything extra will be a wasted effort on your part, or worse could get in the way of achieving the task.