**1.4 I can appreciate the need for testing and project-based development**

**The Need for Testing**

Software needs to be tested because the consequences from not testing can range from a small inconvenience to fatalities and significant costs.

Testing regularly further allows you to catch problems early before they are exacerbated or made worse, which can mean meeting requirements easier and faster software development.

Testing can be manual (for example clicking various buttons and links on a website to check their functionality) or automatic, with applications like *Selenium* or *Cucumber* that can check links work across devices or with high web traffic etc.

Blackbox testing is a method of testing software from a customer approach, such as if links work on a website. With blackbox testing there is nothing known about the background data or processes, such as the html and CSS in the case of a website. Because of the relatively non-technical nature of the testing this can be done by the general public

Whitebox/ clear testing is testing done with access to the background processes or code. Contrary to blackbox testing, whitebox testing is something which is done by people that know their way around the relevant application, such as developers.

**Project-based development**

Project-based development is where there are teams of people testing software and those developing it, working simultaneously in a modular approach which results in a much quicker production of content. This is made much easier with the advent of cloud-level computing, and is being done increasingly more with modern approaches such as the SCRUM methodology of the Agile software development process.