

**Unit title: Systems Development: Testing Software**

**Unit code: H181 34**

Research Worksheet for **L01**

**Student Name:** Chris Dowrczyk

**Date:** 30/08/17

This worksheet is designed for you to **investigate** how the role of testing impacts in Systems Development. It is important that you remember that testing can be carried out on a number of applications not just programming but also on a number of different platforms such as portable and fixed devices.

This worksheet for **L01** requires you **to use the Internet** to find related information to each of the questions and then copy the **URL link** to back up your answer.

e.g. [**http://en.wikipedia.org/wiki/Software\_testing**](http://en.wikipedia.org/wiki/Software_testing)

It would be useful to **bookmark the site online for future reference.**

As **part of your research** to gather evidence, you are required to demonstrate an **understanding** of the **Software Development Life Cycle**.

As **part of your research** to gather evidence, you are required to **describe recognised test strategies** and **techniques** used in the testing of software and **describe the types of testing currently in use within the software development sector**.

**Task 1** Give examples of main stages of the **Software Development Life Cycle**?

**A1.** 1. Analysis 2.Design 3.Implementation 4.Testing 5.Documentation 6.Maintanance

**Q2.** Explain why we need **Software Testing**?

**A2.** To make sure that the software works correctly and doesn’t have any bugs or crashes when trying to operate it.

**Q3.** What is the role of a **Software Tester**?

**A3.** A role of a software tester is to check that all features of the program are working correctly without any bugs.

**Q4.** Briefly describe the **history** of Software Testing?

**A4.** In the early 50s testing consisted of simply finding bugs in the code and fixing them. In the 70s more steps were taken to prevent bugs like testers breaking code on purpose to try and find any weaknesses or holes in the code. This was again shifted in the late 70s once there was a distinction between finding bugs in the code and actually testing the software in real life situations where a user had their hands on the program. URL: https://www.slideshare.net/UniversalExams/basic-history-of-software-testing

**Q5.** Describe **one** major **software disaster** that occurred in the last 10 years?

**A5.** In mid-January 2016 the nest “smart” thermostat by Google received an update which caused the device to drain itself of battery making it unable to provide heating or hot water in one of the coldest weeks of the year. Google has rolled out the update 4.0.1 which it claimed fixed 99.5% of the problems. URL: http://www.computerworlduk.com/galleries/infrastructure/top-10-software-failures-3599618/

**Q6.** What is meant by the term **Test Strategy**?

**A6.** It is the approach you will take to test software.

**Q7.** What is meant by the term **Top-Down** testing?

**A7.** It’s testing from the biggest modules at the top then all the way to the smaller modules, creating a STUB modules in place of any modules that are not complete. URL: http://www.softwaretestingstuff.com/2007/10/top-down-testing-vs-bottom-up-testing.html

**Q8.** List **3** types of program errors that could occur?

**A8.** Logic error, syntax error, runtime error

**Q9.** What is meant by the term **Test Case**?

**A9.** A test case is when you select inputs, the conditions they will be tested under and the expected results from those inputs. URL: https://en.wikipedia.org/wiki/Test\_case

**Q10.** List **3** items that should be on a **Test Plan** document?

**A10.** Test item, expected result, actual result

**Q11.** Explain the difference between **Verification** and **Validation** in reference to software code?

**A11.** Validation is the process of checking whether the specification captures the customer’s needs. Verification is the process of checking that the software meets the specification URL: http://toolsqa.com/software-testing/difference-between-verification-and-validation/

**Q12.** List the **5** main stages of the **Testing Process**?

**A12.** Unit Testing, Module Testing, Subsystem Testing, System Testing, Acceptance Testing URL: https://www.sqa.org.uk/e-learning/SDPL03CD/page\_18.htm

**Q13.** What is meant by the term **Debugging**?

**A13.** Identifying and removing errors from a program

**Q14.** Why does **Quality Assurance** play a major role in the Software Development Life Cycle?

**A14.** It can eliminate any major problems before the program is released to the public.

**Q15.** What is the **purpose of using Test Documentation** when testing a product?  
**A15.** By documenting the results it can easily be communicated to other members of the team which allows highlighting any areas that might need further looking at. URL: http://istqbexamcertification.com/what-is-the-purpose-and-importance-of-test-plans/

**Q16.** What is meant by the term **Black Box Testing**?

**A16.** It’s when an input is fed into the program and the result is the only thing that matters and is looked at. This way you’re only testing the functionality of the program that it doesn’t crash or throw any errors. No internal code is available or needed in this case. URL: https://technologyconversations.com/2013/12/11/black-box-vs-white-box-testing/

**Q17.** What is meant by the term **White Box Testing**?

**A17.** This method requires knowledge of programming and the code used in the program tested. This way if an error is thrown it can be looked further into and possibly recreated to try and find a solution for it. URL: https://technologyconversations.com/2013/12/11/black-box-vs-white-box-testing/

When completed **Save AS L01 Research (Part A) Your Initials**

**Submit** **NO LATER** than **Fri 27th March 2015**

**Follow the posting Instructions below,**

**Subject:** **L01 Research (Part A) Your Initials – Mon AM**

**Message:**

Hi

I have attached the file **L01 Research (Part A)**

Your Name

HNDSD

H181 34 – Testing Software

**Next** you will continue with the research into testing, but this time you will have directed notes, e-books and URL links to help you.