Cambridge Technical Diploma in IT

Y12 to Y13

SIL 2022–2023 (Summer Independent learning)

Due date: Ready to submit in the first lesson back in September

Unit 19 Computer Systems Software

LO 1: Understand different software installations and their purpose

	Pass	Merit	Distinction
1. Understand different software installations and their purpose	P1: Explain the purposes of different systems software	M1: Compare the features and functions of different system software	
	P2: Outline the different application software available for end users		
	P3: Describe the reasons for carrying out software installations and upgrades		D1: Assess different types of software installations

Read the instructions carefully and complete all work to a high standard using references from your research where appropriate. You cannot copy and paste from the internet or from textbooks.

You will submit two files from this SIL work before your first lesson back in September:

Presentation (Task 1, Task 2, Task 3) - (P1, M1, P2)

Report (Task 4, Task 5) - (P3, D1)

Task 1: A Presentation – P1

You need to produce a PowerPoint Presentation which explains the different types of system software in the list below. This could include screenshots of each type with examples and explain what it is for / does.

- **operating systems**:
  - open (e.g. Linux)
  - closed (e.g. Windows)
- **utility programs**
- **library programs**
- **translator software**

Task 2: A comparison table – M1

Produce a table that compares the features and functions between the following operating systems:

- Windows 10
- A Linux Distribution of your choice
- The latest version of MacOS X

A **Windows** version of your choice – see list https://www.lifewire.com/windows-version-numbers-2625171

A **Linux** Distribution of your choice – see list https://distrowatch.com/dwres.php?resource=major

A **Mac OS** X version of your choice – see list https://www.macworld.co.uk/feature/os-x-macos-versions3662757/

Task 3: A PowerPoint Presentation – P2

You need to create a PowerPoint Presentation that outlines the differen application softwares that are available for end users. As part of each of the categories below, detail example software that would make up that section, with images and links as appropriate.

Categories of Application:

- **general purpose** (e.g. off the shelf software such as Microsoft Office)
- **special purpose** (e.g. payroll software)
- **bespoke** (e.g. written specifically to meet a particular client's needs)

Task 4: A Report - P3

You should prepare a report that describes the reasons for carrying out software installations and upgrades. The outline should include a description of each of the reasons below (using examples), which includes the main characteristics/points.

Reasons for installation or upgrade, i.e.:

- **improvement to system** (e.g. stability, performance, security, productivity)
- **resolve issues** (e.g. viruses, conflicts etc.)
- **address risks** (e.g. loss of data, loss of service, system downtime, costs)
- **security risks** (e.g. prevention, rectification)
- **access to additional features/functions**
- **support installation of new hardware**
- **address end user requirements**

Task 5: A report – D1

You must prepare a report that assesses the different types of software installation. The discussions should include a variety of ideas and arguments as to why certain types of software installation are more appropriate than others. You should discuss at all of the types of software installation and include examples of where and how they are used.

Types of installation, i.e.:

- **creating image/ghosting** (e.g. make a copy of the hard drive configuration and software)
- **unattended installation**
- **upgrade**
- **clean install**
- **repair installation**
- **multi-boot**
- **remote network installation**
- **image deployment**
- **Windows networking**
- **Mobile device networking connectivity and email**

For the second section of the report you must assesses **five** of the different types of software installation featured above.

The discussions should include a variety of ideas and arguments as to why certain types of software installation are more appropriate than others.

You should include examples of where and how they are used.

Extra Guidance:

P1: Learners are required to explain the purpose of the different systems software as identified in the teaching content. The evidence could be presented as a report, part of a technical guide or a presentation (either videoed or with detailed speaker notes).

M1: Learners are required to compare the features and functions of a range (three or more) of different systems software. This can be an extension of P1, but the comparisons must include any similarities and differences between the different software. The evidence could be presented as a report, part of a technical guide or a presentation (either videoed or with detailed speaker notes).

P2: Learners are required to outline the different application software available to end users. The outlines must cover general purpose, special purpose and bespoke, and include an account of the purpose of each application software category as well as the purpose for the example of each category type selected. The evidence can be in the form of a report, a presentation (either videoed or with detailed speaker notes) or as a teacher resource.

P3: Learners are required to describe the reasons for carrying out software installations and upgrades. The outline should include a description of each of the reasons (using examples), which includes the main characteristics/points. The evidence could be in the form of a presentation (either videoed or with detailed speaker notes), report, or information sheet.

D1: Learners are required to assess different types of software installation. The discussions should include a variety of ideas and arguments as to why certain types of software installation are more appropriate than others. Learners should discuss at least five of the types of software installation and include examples of where and how they are used. The evidence could be in the form of a technical guide, report or presentation (either videoed or with detailed speaker notes).

This is the indicated content from the exam board and gives you an idea of what we are looking for across these tasks:

1.1 Systems software, i.e.:

- operating systems:
    - o open (e.g. Linux)
    - o closed (e.g. Windows)
- utility programs
- library programs
- translator software

1.2 Application software, i.e.:

- general purpose (e.g. off the shelf software such as Microsoft Office)
- special purpose (e.g. payroll software)
- bespoke (e.g. written specifically to meet a particular client's needs)

1.3 Reasons for installation or upgrade, i.e.:

- improvement to system (e.g. stability, performance, security, productivity)
- resolve issues (e.g. viruses, conflicts etc.)
- address risks (e.g. loss of data, loss of service, system downtime, costs)
- security risks (e.g. prevention, rectification)
- access to additional features/functions
- support installation of new hardware
- address end user requirements

1.4 Carry out maintenance activities

1.5 Types of installation, i.e.:

- creating image/ghosting (e.g. make a copy of the hard drive configuration and software)
- unattended installation
- upgrade
- clean install
- repair installation
- multi-boot
- remote network installation
- image deployment
- Windows networking
- Mobile device networking connectivity and email

Unit 16 Developing a Smarter Planet

LO 1: Understand what is meant by a Smarter Planet

	Pass	Merit	Distinction
1. Understand what is meant by a Smarter Planet	P1*: Describe the evolution of the Smarter Planet in different global situations		D1: Evaluate why the Smarter Planet concept is important for a global society
	P2: Describe the impacts of the Smarter Planet on society	M1: Explain the impact of the Smarter Planet within a specified sector	

Task 1: A Report – P1 and P2

You need to produce a report which describes what a smarter planet is and gives examples of developments which have been made. This report should cover the purpose and the impacts of the developments on society as well as human factors which have been supported within the development. These can be positives and negatives impacts on below areas:

- **- Environmental**
- **- Ethical**
- **- Social**
- **- Individual**
- **- Life styles**

Task 2: A Newspaper Report – M1

You need to create a report which explains the impact of smarter planet on society within each of the below sectors:

- **- Healthcare**
- **- Environmental**
- **- Engineering**
- **- Manufacturing**
- **- IT, retail**
- **- Electronics**
- **- Transport**

Task 3: A Report – D1

You need to evaluate the concept of a smarter planet and its importance to global society. Within this report you must give examples of concepts which have been used.

Extra Guidance:

P1: The learner will describe the evolution of the Smarter Planet for different global situations as identified in the teaching content for the unit. Each situation must be from a different category in the teaching content. Evidence can be in the form of a written report, a presentation with detailed speaker notes, a video of the learner presenting the information to an audience, or an information guide on the evolution of the Smarter Planet in different situations.

D1: The concept of the Smarter Planet will be evaluated in relation to its importance for a global society. A variety of concepts should be evaluated. Evidence can be in the form of a written report, a presentation with detailed speaker notes, a video of the learner presenting the information to an audience, or an information guide. P2: The Smarter Planet has impacted on a number of areas of the global society. The learner should describe different impacts. Evidence for this criterion may link with criterion P3. Evidence can be in the form of a written report, a presentation with detailed speaker notes, a video of the learner presenting the information to an audience, or an information guide on areas of impact within a global society.

M1: The evidence for this assessment criterion will link with criterion P2 and will focus on the impact of the Smarter Planet within a specified sector. The selected sector does not need to be IT based, and learners should consider examples identified in the teaching content. The evidence can be presented as a newspaper article, report or presentation with detailed speaker notes.

This is the indicated content from the exam board and gives you an idea of what we are looking for across these tasks:

1.1 Evolution of a Smarter Planet, i.e.:

- improvements to original developments e.g.:
    - o radio to DAB
    - o telephones to mobile
    - o manual to automated machinery
    - o greener IT
- purpose to, e.g.:
    - o speed processes
    - o improve efficiency
    - o reduce waste and inefficiency
    - o harness natural resources
- human factors, e.g.:
    - o reduce manpower requirements
    - o improve quality of life

1.2 Importance for a global society, i.e.:

- principles, e.g.:
    - o information
    - o instrumented
    - o interconnected
- focus/objectives (e.g. why do we need it?)
- relevance

1.3 Impacts, i.e.:

- environmental, e.g.:
    - o pollution
    - o food miles
    - o increased energy consumption
- • ethical, e.g.:
    - o health and transplants
    - o the internet
    - o data privacy
- • social, e.g.:
    - o acceptance
    - o communication
    - o exposure to threat
    - o reduced face-to-face communication
- individuals, e.g.:
    - o health
    - o labour saving
    - o time saving
    - o flexibility
    - o accessibility

- life styles, e.g.:
    - o health
    - o comfort

    - o travel
    - o communication
    - o social

1.4 Business sectors, e.g.:

- healthcare
- environmental
- engineering
- manufacturing
- IT, retail
- electronics
- transport

1.5 Sectors with applications of a Smarter Planet, e.g.:

- banking
- construction
- towns and cities
- computing and data storage
- education
- energy
- healthcare
- infrastructures
- oil
- products
- regulatory bodies
- retail
- telecoms
- transport/traffic
- water
- e-commerce
- environmental

Optional Activities

Although the below are optional, we would suggest you look through all the below and make notes where appropriate. This will give you a head start and will work to your benefit from September 2021

Take a look and read through the contents of some of the coursework units for next year!

Unit 19 Computer systems - software
Unit 4 Computer networks
Unit 8 Project Management
Unit 9 Product Development
Unit 12 Mobile Technology
Unit 16 Developing a Smarter Planet

Ed Stout – IT Support Services Manager at Leeds Beckett University. Talks about his journey from college to current managerial position. Tips on how to gain experience, routes into the industry and what he looks for when recruiting.

IT Work Experience Talk

Here are a collection of interesting talks and interviews that will expand your understanding of the world of IT and Computing:

Joe Rogan Experience #1368 - Edward Snowden

YouTube CEO Susan Wojcicki | Full interview | Code 2019

How I used to rob banks! by FC (aka Freaky Clown)

GOTO 2018 • The Future of the Web • Sir Tim Berners-Lee

The mind behind Linux | Linus Torvalds

There are a series of good YouTube channels that regularly post interesting videos about the world of IT and Computing:

Linus Tech Tips

Computerphile

Techquickie

Crash course computing

Explaining computers

Another great exercise is to regularly read news articles and stories. These will keep you up to date with all of the latest happenings in technology:

BBC
Sky
The Guardian
Computer World
CNET

Other clips you can watch related to the units:

Unit 16
https://www.ibm.com/smarterplanet/us/en/
https://youtu.be/Pf2VnEz4jGQ