Government of **Western Australia**
School Curriculum and Standards Authority

SAMPLE ASSESSMENT TASKS

APPLIED INFORMATION TECHNOLOGY
ATAR YEAR 12

Sample assessment task

Applied Information Technology – ATAR Year 12

Task 3 – Unit 3

Assessment type: Project

Conditions
Time for the task: three weeks

Task weighting
5% of the school mark for this pair of units

A Year 8 computing teacher at your school has requested that you create a digital product or digital solution for their class, highlighting the impact of convergence trends in contemporary digital technologies.

Your digital product or digital solution will need to:

- take the form of a multimedia-based video or animation, using any available software
- be no longer than **three** minutes' duration
- provide all the essential background information related to contemporary digital technologies and the concept of digital convergence
- incorporate an appropriate use of video and audio features
- capture the user's attention and cater to the target audience of Year 8 computing students.

Development needs to occur in three phases.

Phase one

- Outline the aim of your digital product or digital solution and its primary message (Digital convergence). (2 marks)
- Describe the characteristics of your target audience. (2 marks)
- Outline the conventions appropriate to the design for the digital product or digital solution that you would use, including:
  - the use of the principles of design and elements of design, originality/creativity and consistency of design (3 marks)
  - the technical conventions appropriate for the published medium for the digital product or digital solution. (3 marks)
- Describe any special effects that you may need to include for your target audience. (2 marks)
- Describe the technology(ies) that you plan to use in the development of the digital product or digital solution. Collect any images and audio that you intend to use, ensuring that you document all sites visited and images collected. (4 marks)
- Develop a time plan for the development of the digital product or digital solution (i.e. proposed times for completion of the phases of the task). (1 mark)

- Track the development of your digital product or digital solution in comparison to your predicted time plan. Include notes on the software, hardware and processes used during the development. (3 marks)

Subtotal = 20 marks

Phase two

- Develop a design plan for your digital product or digital solution using an appropriate project management approach that will satisfy the requirements identified in Phase one. Ensure that you:
  - use an appropriate design plan and project planning tools to represent your idea and demonstrate your ideas for your digital product or digital solution (6 marks)
  - include notes, drafts and annotations to document the progression of ideas. (4 marks)

Subtotal = 10 marks

Phase three

- Use appropriate software application tools, media (including video, audio and images), skills and techniques to develop your digital product or digital solution. Ensure that the:
  - plan/design is reflected in the digital product or digital solution (4 marks)
  - aim of the digital product or digital solution and its primary message are clearly evident (4 marks)
  - digital product or digital solution reflects the target audience. (4 marks)
- In the development of your digital product or digital solution, ensure that there is an appropriate use of:
  - the conventions relevant to the design for the digital product or digital solution, including:
    - effective use of principles of design and the elements of design (4 marks)
    - demonstrated application of originality/creativity in the design (1 mark)
  - the consistency of design throughout (3 marks)
  - the technical conventions for the published medium for the digital product or digital solution, including:
    - special effects relevant to the target audience (4 marks)
    - video, audio and images throughout the digital product or digital solution (6 marks)
  - demonstrated skills in the use of application/s. (5 marks)

Subtotal = 35 marks

Total = 65 marks

Marking key for sample assessment task 3 — Unit 3

Description	Marks
Phase one	
Aim • provides an appropriate aim, highlighting the primary message – the 'impact of digital convergence trends in contemporary digital technologies'	1–2
Characteristics of the target audience • provides a description of the characteristics of the target audience • provides a limited description of the characteristics of the target audience	2 1
Subtotal	**/4**
Conventions Provides an outline of the conventions appropriate to the design for the • use of the principles of design and elements of design, originality/creativity and consistency of design • application of the technical conventions for the published medium for the digital product or digital solution	1–3 1–3
Special effects • provides an appropriate description of the special effects to be used in the digital product or digital solution	1–2
Technology(ies) • provides an appropriate description of the technology(ies) (hardware, software, images and audio) to be used • provides an limited description of the technology(ies) (hardware, software, images and audio) to be used	3–4 1–2
Subtotal	**/12**
Time plan • provides an appropriate time plan to record the development of digital product or digital solution	1
Record of development • keeps detailed and complete notes each day (including screenshots, if appropriate) • keeps complete notes each day • keeps complete notes some days or limited/incomplete notes each day	3 2 1
Subtotal	**/4**
Phase one total	**/20**
Phase two	
Development of design plan • provides detailed evidence of an appropriate design plan • provides evidence of an appropriate design plan • provides limited evidence of an appropriate design plan	5–6 3–4 1–2
Annotations of design plan • provides a design plan with detailed and appropriate annotations • provides a design plan with some detailed and appropriate annotations • provides a design plan with limited but appropriate annotations • provides a design plan with inappropriate annotations or without annotations	4 3 2 1
Subtotal	**/10**
Phase two total	**/10**
Phase three	
Design plan applied • correctly applies the design plan	1–4
Digital convergence trends in contemporary digital technologies described Provides a digital product or digital solution that: • provides a description of the impact of digital convergence trends in contemporary digital technologies • provides a limited description of the impact of digital convergence trends in contemporary digital technologies	3–4 1–2

Description	Marks
Target audience considered Provides a digital product or digital solution that: • reflects the target audience • partially reflects the target audience	 3–4 1–2
Subtotal	**/12**
Conventions used Provides a digital product or digital solution that demonstrates an: • effective use of the principles of design and the use of the necessary elements of design to create them • limited use of the principles of design and the use of the necessary elements of design to create them	 3–4 1–2
Consistency of design • demonstrated application of originality/creativity in the design • design consistent throughout	 1 1–3
Subtotal	**/8**
Special effects used Provides a digital product or digital solution that demonstrates: • appropriate and effective use of special effects • appropriate use of special effects • limited use of special effects • inappropriate use of special effects	 4 3 2 1
Subtotal	**/4**
Inclusion of media Provides a digital product or digital solution that demonstrates: *Video* • use of modified video file in digital product or solution that is appropriate to the design plan • use of unmodified video piece appropriate to the design plan *Audio* • use of modified audio file in digital product or solution that is appropriate to the design plan • use of unmodified audio piece appropriate to the design plan *Images* • use of images appropriate to the design plan and, if required, modified • images are appropriate to design plan	 2 1 2 1 2 1
Subtotal	**/6**
Skills in the use of the selected application/s • high level of skill demonstrated • medium level of skill demonstrated • limited level of skill demonstrated Range of applications used • several appropriate applications used • a limited range of applications used	 3 2 1 2 1
Subtotal	**/5**
Phase three total	**/35**
Phase one total	**/20**
Phase two total	**/10**
Phase three total	**/35**
Total	**/65**

Sample assessment task

Applied Information Technology – ATAR Year 12

Task 4 – Unit 3

Assessment type: Extended answer

Conditions
Time for the task: 40 minutes under standard test conditions

Task weighting
5% of the school mark for this pair of units

A high school is planning to reduce the number of face-to-face classes from four to two classes per week for each course. In the remaining time, the students will work in a virtual online learning environment which will include online classes and the provision of online services.

The school also intends to provide a portal where staff and students can communicate in a range of virtual, online collaborative environments, including video, online chat, blogs and discussion boards. Teachers will also maintain a virtual classroom, providing materials for each course and access to an online school library.

School staff will need to undertake compulsory training on their legal obligations for copyright, intellectual property and privacy legislation. This training includes the issues of copyright for educational purposes and the intellectual property rights for materials created by school staff.

1. Describe **two** new convergent digital mobile innovations that could enhance the provision of the proposed virtual online learning environment. (4 marks)

2. Explain **two** advantages that the virtual online learning environment will provide to the school. (6 marks)

3. Explain **two** disadvantages that the virtual online learning environment will provide to the school. (6 marks)

4. It is suggested that improved levels of collaboration and increased access to resources in the proposed virtual, online learning environment will benefit students. Explain the implications for the students studying in the proposed online learning environment. (8 marks)

Total = 24 marks

Marking key for sample assessment task 4 – Unit 3

1. Describe **two** new convergent digital mobile innovations that could enhance the provision of the proposed virtual online learning environment.

Description	Marks
Innovation 1	
Provides a description of a new convergent digital mobile innovation	2
Provides a limited description of a new convergent digital mobile innovation	1
Subtotal	**/2**
Innovation 2	
Provides a description of a new convergent digital mobile innovation	2
Provides a limited description of a new convergent digital mobile innovation	1
Subtotal	**/2**
Total	**/4**
Answer could include, but is not limited to:	
Hardware-based convergent digital mobile innovations, including: • mobile phones • tablets • integrated and mobile video and digital cameras • enhanced video and audio capabilities Software-based convergent digital mobile innovations, including: • combined or integrated personal productivity tools • broadband and wireless internet • software solutions • messaging services • integrated mobile service, including voice, internet, audio, and video • virtual and gaming worlds	
Answers could include, but are not limited to, the following concepts:	
• accessibility • mobility • reduced cost • reduced size • importance of the internet • anywhere-anytime use	

2. Explain **two** advantages that the virtual online learning environment will provide to the school.

Description	Marks
Advantage 1	
Provides an explanation of the advantage that the virtual online learning environment will provide to the school	3
Provides a description of the advantage that the virtual online learning environment will provide to the school	2
Provides a limited description of the advantage that the virtual online learning environment will provide to the school	1
Subtotal	**/3**
Advantage 2	
Provides an explanation of the advantage that the virtual online learning environment will provide to the school	3
Provides a description of the advantage that the virtual online learning environment will provide to the school	2
Provides a limited description of the advantage that the virtual online learning environment will provide to the school	1
Subtotal	**/3**
Total	**/6**
Answers could include, but are not limited to, the following concepts:	
• class materials are dynamic and provide realistic examples • cost effective for school – requires less physical space • increases the number of classes • classes focus on the student as a learner and teacher as a guide • promotes independent learning • maximises the use of appropriate technology at the point of need • increased access to students, teachers and resources through online virtual space • promotes real world learning • maximises the use of Web 2.0 technologies • accommodates different speeds of learning • access to cloud-based services • enables remote learning	

3. Explain **two** disadvantages that the virtual online learning environment will provide to the school.

Description	Marks
Advantage 1	
Provides an explanation of the disadvantage that the virtual online learning environment will provide to the school	3
Provides a description of the disadvantage that the virtual online learning environment will provide to the school	2
Provides a limited description of the disadvantage that the virtual online learning environment will provide to the school	1
Subtotal	**/3**
Advantage 2	
Provides an explanation of the disadvantage that the virtual online learning environment will provide to the school	3
Provides a description of the disadvantage that the virtual online learning environment will provide to the school	2
Provides a limited description of the disadvantage that the virtual online learning environment will provide to the school	1
Subtotal	**/3**
Total	**/6**
Answers could include, but are not limited to, the following concepts:	
• online materials are expensive to develop and maintain • infrastructure is expensive to source and maintain • increased demand for effective school planning • need to minimise the potential confusion to students • reduces the sense of community for a school • teachers may not have the skills in working in the online environment • online learning may not meet the needs of all students at the school • all students may not have the access to funds and resources to have remote access	

4. It is suggested that improved levels of collaboration and increased access to resources in the proposed virtual, online learning environment will benefit students. Explain the implications for the students studying in the proposed online learning environment.

Description	Marks
Provides a detailed explanation of the implications, supported by relevant examples of collaboration and access to resources	7–8
Provides an explanation of the implications, supported by relevant examples of collaboration or access to resources	5–6
Provides a limited statement of implications, with minimal examples or irrelevant examples	3–4
Provides a list of implications	1–2
Total	**/8**

Answers could include, but are not limited to, the following concepts:

- resources will be expensive to purchase
- students may not have the access to funds and resources to have remote access (digital divide)
- online resources will require internet access
- promotion of a 24/7 access to resources which is not positive for student learning
- increased demand on non-traditional learning spaces
- reduces the sense of community and opportunities for socialisation for a student
- students will be disadvantaged as teachers may not have the skills of teaching in an online environment
- students will be disadvantaged as teachers may not have the skills of using the online technologies
- online learning may not meet the needs of all students
- school may not have the network infrastructure to provide reliable 24/7 access

Sample assessment task

Applied Information Technology – ATAR Year 12

Task 11 – Unit 4

Assessment type: Short answer

Conditions
Time for the task: 40 minutes under standard test conditions

Task weighting
2% of the school mark for this pair of units

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1. Describe **two** security techniques used for the management of data. (6 marks)

   Technique 1: _____

   Description: _____

   _____

   _____

   _____

   Technique 2: _____

   Description: _____

   _____

   _____

   _____

2. Describe **three** techniques used for the backup and archiving of data. (9 marks)

   Technique 1: _____

   Description: _____

   _____

   _____

   _____

Technique 2: _____

Description: _____

_____

_____

_____

Technique 3: _____

Description: _____

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_____

3. Describe **two** methods used for the storage of online data. (6 marks)

Method 1: _____

Description: _____

_____

_____

_____

Method 2: _____

Description: _____

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4. State the purpose of data mining. (2 marks)

_____

_____

_____

5. List four methods used to ensure the security of personal data and describe the function of **one** of these methods. (6 marks)

Method 1: _____

Method 2: _____

Method 3: _____

Method 4: _____

Description of a method used to secure personal data: _____

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6. Explain the difference between Web 2.0 and Web 3.0. (6 marks)

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7. State the purpose of a content management system (CMS). (3 marks)

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8. State the purpose of World Wide Web consortium (W3C). (3 marks)

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Total = 41 marks

Marking key for sample assessment task 11 – Unit 4

1. Describe **two** security techniques used for the management of data.

Description	Marks
Technique 1	
Provides a description of an appropriate security technique	3
Provides a limited description of an appropriate security technique	2
Identifies an appropriate security technique	1
Subtotal	**/3**
Technique 2	
Provides a description of an appropriate security technique	3
Provides a limited description of an appropriate security technique	2
Identifies an appropriate security technique	1
Subtotal	**/3**
Total	**/6**
Answer could include, but is not limited to:	
Disaster recovery plan: A disaster recovery plan is a set of procedures to be followed and used to protect a computer or computer installation, before, during and after a disaster. The disaster could be either man-made or of natural causes. The disaster recovery plan can include a number of IT-based solutions that endeavour to minimise operational downtime and data loss. **Audit trail:** An audit trail is an electronic record documenting the access to data, security rights of data and the transaction of data, to enable the logical reconstruction and review of a sequence events in the event of a security breach of data.	

2. Describe **three** techniques used for the backup and archiving of data.

Description	Marks
Technique 1	
Provides a description of an appropriate backup and archiving technique	3
Provides a limited description of an appropriate backup and archiving technique	2
Identifies an appropriate backup and archiving technique	1
Subtotal	**/3**
Technique 2	
Provides a description of an appropriate backup and archiving technique	3
Provides a limited description of an appropriate backup and archiving technique	2
Identifies an appropriate backup and archiving technique	1
Subtotal	**/3**
Technique 3	
Provides a description of an appropriate backup and archiving technique	3
Provides a limited description of an appropriate backup and archiving technique	2
Identifies an appropriate backup and archiving technique	1
Subtotal	**/3**
Total	**/9**
Answer could include, but is not limited to:	
Full backup: Sometimes called system imaging, provides a complete copy or mirror of all data on a data storage device. This method provides the best measure of data protection; it is usually used at intervals, as it is time consuming and requires large volumes of data storage with high-speed access. This method is sometimes used to create a standard operating environment. Only one backup is required to restore the data.	

Differential backup: Is a technique similar to an incremental backup; it starts with a full backup, with subsequent backups containing data that has changed since the last backup. Each differential backup saves the data that has changed since the last full backup. It has the advantage that only a maximum of two data sets are needed to restore the data. However, the longer the time since the last full backup, the time taken to restore increases. A data restore of an entire system would require starting from the most recent full backup, then using the last differential backup. **Incremental backup:** This technique backups only the data changed since the last backup. **Daily backup:** This technique backs up only the data that was modified, changed or created during the day of the backup.

3. Describe **two** methods used for the storage of online data.

Description	Marks
Method 1	
Provides a description of an appropriate storage method	3
Provides a limited description of an appropriate storage method	2
Identifies an appropriate storage method	1
Subtotal	**/3**
Method 2	
Provides a description of an appropriate storage method	3
Provides a limited description of an appropriate storage method	2
Identifies an appropriate storage method	1
Subtotal	**/3**
Total	**/6**
Answer could include, but is not limited to:	
Data warehouse: This method of data storage provides strategic storage facilities to an organisation for the reporting and analysis of data. Data warehouses are usually centrally located. They store current and historic data on a very large range of topics related to the organisation, to ensure the reliability of analytical reports that are generated. The types of reports can include annual and financial. **Data marts:** This method of data storage is a simple form of a data warehouse. This type of warehouse specialises on a single data topic or single function. Data marts are usually located within a small entity or department within a business. **Data in the cloud:** This method of data storage is where data is stored remote to the data source, in a number of storage locations, or logical pools. The data may be stored on multiple data servers in different locations. Cloud storage facilities are often owned by a company, who hosts and manages the access to the data; for example, consumer cloud applications such as Google Drive or Dropbox.	

4. State the purpose of data mining.

Description	Marks
Correctly states the purpose of data mining	1–2
Total	**/2**
Answer could include, but is not limited to:	
Data mining is the process of searching large volumes of data for sets of data, and converting the discovered sets or patterns into a meaningful structure for further use. It is often used to discover patterns and useful information in the data. The methods used in data mining are based on artificial intelligence, statistics and database design.	

5. List **four** methods used to ensure the security of personal data and describe the function of **one** of these methods.

Description	Marks
Lists appropriate methods	1–4 (1 mark each)
Subtotal	**/4**
Provides a description of the function of one of these methods	2
Provides a limited description of the function of one of these methods	1
Subtotal	**/2**
Total	**/6**
Answer could include, but is not limited to:	
Passwords: A method that provides an electronic word or phrase that enables access to a computer, files, programs and secure facilities in a computer or piece of software. It usually consists of letters, symbols or numbers. Organisations usually establish rules for the use of passwords. **Firewalls:** A method that prevents unauthorised access to a secure network. The network is usually a secure private network. A firewall can be created by the use of specialised software, hardware or a combination of both hardware and software. **Biometrics:** A method used to secure access to data or computer resources through the use of human features or characteristics for authentication or recognition of an individual and can include fingerprints, facial features or voice recognition. **Anti-virus software:** A category of software used to prevent, detect, isolate or remove dangerous software, code, malware. Virus software can include Trojans, worms, ransomware, key loggers, adware and spyware. **Digital signatures:** A method that is used to validate the authenticity or ownership or source of an electronic document, or message. The validation is based upon a mathematical model. **Digital certificates:** A method, also known as a public key certificate or a digital key certificate, is used to prove the ownership of a document by the sender and receiver owning an electronic public key. **Encryption:** A method used to digitally encode or convert a message into a form that only authorised receivers who possess the encryption key can decode and read the message and document.	

6. Explain the difference between Web 2.0 and Web 3.0.

Description	Marks
Provides a detailed explanation of the difference between Web 2.0 and Web 3.0	5–6
Provides a brief explanation of the difference between Web 2.0 and Web 3.0	3–4
Provides a description of Web 2.0 and Web 3.0	1–2
Total	**/6**
Answer could include, but is not limited to:	
Web 2.0 describes the websites and online applications that allow users of the internet to create, collaborate and share information, material and content online. Key features of the Web 2.0 are that websites enable user-generated content, improved usability and interoperability. The collaborative nature of Web 2.0 is its major feature; websites enable community-based input, interaction, content-sharing and collaboration. Types of social media sites and applications include forums, microblogging, social networking, social bookmarking, social curation, and wikis. Web 3.0 describes the development of the internet from Web 2.0. It is referred to as a Semantic web. In the Web 3.0, websites create their own data through common standards and protocols. The difference is that Web 2.0 is an environment that promotes collaboration and user interaction, whereas the Web 3.0 promotes the automatic generation and sharing of web content.	

7. State the purpose of a content management system (CMS).

Description	Marks
Provides a detailed statement	3
Provides a statement	2
Provides a limited statement	1
Total	**/3**
Answer could include, but is not limited to:	
A CMS is a software application allowing for the creation, editing, publishing and management of a website. A CMS also allows for the automation and development of common elements throughout the website, and the logging and tracking of access to a published website. A CMS can also provide Web 2.0 functionality to a published website.	

8. State the purpose of World Wide Web consortium (W3C).

Description	Marks
Provides a detailed statement	3
Provides a statement	2
Provides a limited statement	1
Total	**/3**
Answer could include, but is not limited to:	
The purpose of the W3C consortium is to develop and promote a set of guidelines, standards and protocols ensuring the consistent and reliable growth of the internet as a resource. The W3C promotes a number of design principles that are encouraged for the development of all web-based resources. They are: • Web for all (accessibility, internationalisation and mobile) • Web on everything (devices, mobile and browsers) • Web-rich interaction (design and architecture) • Data and services (XML, semantic web and services) • Trust (semantic, security and privacy)	