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| **Section 1 – General Assessment Information** | |
| **Decision Making Rules** | Every task must be completed satisfactorily to be assessed as competent in the unit.  *\* For graded units, competence must be demonstrated before a mark can be given.* |
| **Reasonable Adjustment** | Students may request reasonable adjustment for assessment tasks.  Reasonable adjustment usually involves varying:   * the processes for conducting the assessment (eg: allowing additional time, varying the venue) * the evidence gathering techniques (eg: oral rather than written questioning, use of a scribe, modifications to equipment)   However, the evidence collected must allow the student to demonstrate all requirements of the unit. |
| **Special Consideration** | Students can apply for Special Consideration where personal circumstances have adversely affected their task result or ability to undertake an assessment. A Special Consideration form can be completed prior to, but no later than 3 days after, the date of the assessment and submitted to the relevant Manager. |
| **Re-submission** *(where tasks are not satisfactorily completed)* | Assessment tasks that are not satisfactory can be resubmitted up until the end of the unit as scheduled on the Unit Outline. The timing on this may depend on the equipment required for this assessment task.  **NOTE**: Assessment tasks submitted for the first time after the end of the unit as scheduled on the Unit Outline will not be assessed and student should be told to re-enrol in the unit. |
| **Plagiarism** | There are serious penalties for plagiarism. Students must ensure that all assessments are their own work (or group work).  Please refer to <https://www.swinburne.edu.au/current-students/manage-course/exams-results-assessment/plagiarism-academic-integrity/> |

| **Section 2 – Student and Assessor Instructions** | |
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| **Conditions** | *Must be completed in class within a given three hour time limit*  *Enterprise Architect must be used to create diagrams*  *Keep this document open as the assessor will provide feedback on the open document. Changes may be made to the submission based on feedback.*  *When the assessor has completed this assessment they will sign off with a code unique to you, do not leave until this code is entered in the assessor signature section.* |
| **Task Overview and/or Description** | **Dod&Gy Movie Distribution**  Dod&Gy have started a movie selling business. They need a proof of concept to perform some CRUD on their existing database. Unit Testing will also be required  The structure of the database and current movies catalogue is included in the accompanying .sql file.  *User input:* could be from console input or sent via http/s to a RestApi  **Pre-Task:**   1. Deploy movies.sql to a DBMS 2. Create a GitHub repository for the project 3. Create C# classes to represent Movies and Actors    1. Movie class has methods       1. NumActors – returns the number of actors cast in the movie as an int       2. GetAge – returns how old the movie is from the current year as an int    2. Actor class has method       1. setFullName – sets the fullname of the actor which is the givenname and surname with a space in between 4. (optional) deploy the program to a cloud service   **Test Task:**   1. Create a test plan in Excel for the Movie class, each unit test should have at least five cases. Implement the unit tests.    1. Check that the num actors method provides the correct output.    2. Check that the GetAge method returns the correct output   **Exceptions Task**   1. Connect the database to the one found at:    * url: no.database.here.com    * username: Wally    * password: Where    * dbname: Is   Catch the resulting exception and redirect the connection to your database.  **Read Task:**   1. Read all movies from the database into a list named Movies. 2. In your program access the database and display the titles for all the movies with title that begin with the word “The” (case insensitive) 3. Access the database and display all the titles for all movies that *Luke Wilson* has been cast in 4. Using the list Movies created in step one, display the total running time of all movies   **Update Task**   1. In your program, provide a way to change a movie’s runtime found by title. New title to be obtained via user input. Change must be reflected in the DB. 2. Provide a way to change an actor’s surname and fullname, found by givenname and surname. New surname to obtained via user input. Change must be reflected in the DB.   **Create Task**   1. From user input, create a movie object. Use this object to create a new entry in the Movie table of the database 2. From user input, create an actor object. Use this object to create a new entry in the Actor table of the database 3. Provide a way to cast an actor to a movie. |
| **How the Assessment will be Conducted** | *Assessement to be completed and demoed to teacher* |
| **Submission Details** | 1. Link to GitHub repo 2. Arrange a time to demo to your teacher 3. Marking Guide - below |

| **Section 3 – Assessment Criteria (Evidence to be Provided by the Student)** |
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| All of the required evidence within the task listed below must be satisfactorily demonstrated for the task to be assessed as satisfactory.  \* For graded units, the task must be satisfactorily completed before marks will be allocated. |

***Notes for the teacher***

*List in the Required Evidence column below all aspects of the task that are required to be demonstrated by the student for satisfactory completion of the task.*

*Name: Abdulla Shinah*

*Student ID: 103219744*

*Date:1 December 2020*

*Time: 16:00*

*732055*

| **Marking Guide** | | | | |
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| **Required Evidence** | | **Satisfactory** | **Not Submitted** | **Unsatisfactory** |
| **1** | Test Task |  |  |  |
| **2** | Exceptions Task |  |  |  |
| **3** | Read Task |  |  |  |
| **4** | Update Task |  |  |  |
| **5** | Create Task |  |  |  |
| **6** | Q&A |  |  |  |

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| **4. Q&A** | | | | |
| **Required Evidence** | | | **Satisfactory** | **Not Submitted** | **Unsatisfactory** | |
| **1** | | What security issues might need to be addressed in accessing a database from an API? |  |  |  | |
|  | | APIs often self-document information, such as their implementation and internal structure, which can be used as intelligence for a cyber-attack. Additional vulnerabilities, such as weak authentication, lack of encryption, business logic flaws and insecure endpoints make APIs vulnerable to the attacks outlined below. Man-In-The-Middle (MITM)API injections (XSS and SQLi)Distributed denial of service (DDoS)API security best practices Authentication – Determining the identity of an end user. In a REST API, basic authentication can be implemented using the TLS protocol, but OAuth 2 and OpenID Connect are more secure alternatives.  Authorization – Determining the resources an identified user can access. An API should be built and tested to prevent users from accessing API functions or operations outside their predefined role. For example, a read-only API client shouldn’t be allowed to access an endpoint providing admin functionality. |  |  |  | |
| **2** | | What sort of testing can be done to ensure that systems hosted on the internet are secure? |  |  |  | |
|  | | Security testing is software testing that uncovers vulnerabilities, threats, risks in a software application and prevents malicious attacks from intruders. The purpose of Security Tests is to identify all possible loopholes and weaknesses of the software system which might result in a loss of information, revenue, repute at the hands of the employees or outsiders of the organization.  There are seven main types of security testing as per Open Source Security Testing methodology manual. They are explained as follows:   * **Vulnerability Scanning**: This is done through automated software to scan a system against known vulnerability signatures. * **Security Scanning:** It involves identifying network and system weaknesses, and later provides solutions for reducing these risks. This scanning can be performed for both Manual and Automated scanning. * **Penetration testing**: This kind of testing simulates an attack from a malicious hacker. This testing involves analysis of a particular system to check for potential vulnerabilities to an external hacking attempt. * **Risk Assessment:** This testing involves analysis of security risks observed in the organization. Risks are classified as Low, Medium and High. This testing recommends controls and measures to reduce the risk. * **Security Auditing:** This is an internal inspection of Applications and Operating systems for security flaws. An audit can also be done via line by line inspection of code * **Ethical hacking:** It's hacking an Organization Software systems. Unlike malicious hackers, who steal for their own gains, the intent is to expose security flaws in the system. * **Posture Assessment:** This combines Security scanning,[Ethical Hacking](https://www.guru99.com/ethical-hacking-tutorials.html)and Risk Assessments to show an overall security posture of an organization. |  |  |  | |
| **3** | | Aside from unit testing, what other forms of software testing are there? |  |  |  | |
|  | | Alpha Testing It is the most common type of testing used in the Software industry. The objective of this testing is to identify all possible issues or defects before releasing it into the market or to the user.  Alpha Testing is carried out at the end of the software development phase but before the Beta Testing. Still, minor design changes may be made as a result of such testing.  [Alpha Testing](https://www.softwaretestinghelp.com/what-is-alpha-testing-beta-testing/) is conducted at the developer’s site. In-house virtual user environment can be created for this type of testing. Acceptance Testing An [Acceptance Test](https://www.softwaretestinghelp.com/what-is-acceptance-testing/) is performed by the client and verifies whether the end to end the flow of the system is as per the business requirements or not and if it is as per the needs of the end-user. Client accepts the software only when all the features and functionalities work as expected.  It is the last phase of the testing, after which the software goes into production. This is also called User Acceptance Testing (UAT). Ad-hoc Testing The name itself suggests that this testing is performed on [an Ad-hoc](https://www.softwaretestinghelp.com/ad-hoc-testing/) basis i.e. with no reference to the test case and also without any plan or documentation in place for such type of testing.  The objective of this testing is to find the defects and break the application by executing any flow of the application or any random functionality.  Ad-hoc Testing is an informal way of finding defects and can be performed by anyone in the project. It is difficult to identify defects without a test case but sometimes it is possible that defects found during ad-hoc testing might not have been identified using existing test cases. Accessibility Testing The aim of [Accessibility Testing](https://www.softwaretestinghelp.com/what-is-web-accessibility-testing/) is to determine whether the software or application is accessible for disabled people or not.  Here, disability means deaf, color blind, mentally disabled, blind, old age and other disabled groups. Various checks are performed such as font size for visually disabled, color and contrast for color blindness, etc. Beta Testing [Beta Testing](https://www.softwaretestinghelp.com/beta-testing/) is a formal type of Software Testing which is carried out by the customer. It is performed in the Real Environment before releasing the product to the market for the actual end-users.  Beta Testing is carried out to ensure that there are no major failures in the software or product and it satisfies the business requirements from an end-user perspective. Beta Testing is successful when the customer accepts the software.  Usually, this testing is typically done by end-users or others. It is the final testing done before releasing an application for commercial purpose. Usually, the Beta version of the software or product released is limited to a certain number of users in a specific area.  So end-user actually uses the software and shares the feedback to the company. Company then takes necessary action before releasing the software to the worldwide. Back-end Testing Whenever an input or data is entered on front-end application, it stores in the database and the testing of such database is known as Database Testing or Backend Testing.  There are different databases like SQL Server, MySQL, and Oracle, etc. Database Testing involves testing of table structure, schema, stored procedure, data structure and so on.  In Back-end Testing GUI is not involved, testers are directly connected to the database with proper access and testers can easily verify data by running a few queries on the database.  There can be issues identified like data loss, deadlock, data corruption etc during this back-end testing and these issues are critical to fixing before the system goes live into the production environment Browser Compatibility Testing It is a subtype of Compatibility Testing and is performed by the testing team.  [Browser Compatibility Testing](https://www.softwaretestinghelp.com/how-is-cross-browser-testing-performed/) is performed for web applications and it ensures that the software can run with the combination of different browser and operating system. This type of testing also validates whether web application runs on all versions of all browsers or not. Backward Compatibility Testing It is a type of testing which validates whether the newly developed software or updated software works well with the older version of the environment or not.  Backward Compatibility Testing checks whether the new version of the software works properly with file format created by an older version of the software; it also works well with data tables, data files, data structure created by the older version of that software.  If any of the software is updated then it should work well on top of the previous version of that software. Black Box Testing Internal system design is not considered in this type of testing. Tests are based on the requirements and functionality. |  |  |  | |
| **4** | | List some concerns around data security that any organisation holding data needs to be aware of |  |  |  | |
|  | | Data security is the protection of programs and data in computers and communication systems against unauthorized access, modification, destruction, disclosure or transfer whether accidental or intentional by building physical arrangements and software checks. It refers to the right of individuals or organizations to deny or restrict the collection and use of information about unauthorized access. Data security requires system managers to reduce unauthorized access to the systems by building physical arrangements and software checks.  Data security uses various methods to make sure that the data is correct, original, kept confidentially and is safe. It includes-   * Ensuring the integrity of data. * Ensuring the privacy of the data. * Prevent the loss or destruction of data.   Data security consideration involves the protection of data against unauthorized access, modification, destruction, loss, disclosure or transfer whether accidental or intentional. Some of the important data security consideration are described below:  **Backups**  Data backup refers to save additional copies of our data in separate physical or cloud locations from data files in storage. It is essential for us to keep secure, store, and backup our data on a regular basis. Securing of the data will help us to prevent from-   * Accidental or malicious damage/modification to data. * Theft of valuable information. * Breach of confidentiality agreements and privacy laws. * Premature release of data which can avoid intellectual properties claims. * Release before data have been checked for authenticity and accuracy.  **Archival Storage** Data archiving is the process of retaining or keeping of data at a secure place for long-term storage. The data might be stored in safe locations so that it can be used whenever it is required. The archive data is still essential to the organization and may be needed for future reference. Also, data archives are indexed and have search capabilities so that the files and parts of files can be easily located and retrieved. The Data archival serve as a way of reducing primary storage consumption of data and its related costs.  Data archival is different from data backup in the sense that data backups created copies of data and used as a data recovery mechanism to restore data in the event when it is corrupted or destroyed. On the other hand, data archives protect the older information that is not needed in day to day operations but may have to be accessed occasionally. **Disposal of Data** Data destruction or disposal of data is the method of destroying data which is stored on tapes, hard disks and other electronic media so that it is completely unreadable, unusable and inaccessible for unauthorized purposes. It also ensures that the organization retains records of data for as long as they are needed. When it is no longer required, appropriately destroys them or disposes of that data in some other way, for example, by transfer to an archives service.  The managed process of data disposal has some essential benefits-   * It avoids the unnecessary storage costs incurred by using office or server space in maintaining records which is no longer needed by the organization. * Finding and retrieving information is easier and quicker because there is less to search. |  |  |  | |

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| **Feedback to Student** | | | | |
| Click or tap here to enter text. | | | | |
| **Task Result** |  | **Satisfactory** |  | **Unsatisfactory** |

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| --- | --- | --- | --- |
|  | **Name** | **Signature** | **Date** |
| **Assessor** |  |  |  |