Assessment Brief

\*This document is for CU Group students for their own use in completing their assessed work for this module and should not be passed to third parties or posted on any website. Any infringements of this rule should be reported to [registry.cuc@coventry.ac.uk](mailto:registry.cuc@coventry.ac.uk)

|  |
| --- |
| Module Title: **Secure Programming** |
| Module Code: **300IT** |

|  |  |  |  |
| --- | --- | --- | --- |
| Assessment Type:  Coursework | Assessment Number:  1 | Study Mode:  FT/~~PT~~ | Weighting:  40% |
| Submission Date:  02/10/2023 | Submission Time:  20:00 | Campus:  PSB |  |

|  |
| --- |
| [Introduction:](#_top) |
| The application of security in web application is of profound importance due to the extended use of web for business. Most of the attacks, are either because the developers are not considering security as a concern or due to the security flaws in designing and developing the applications. In this assignment you are required to systematically review the security of a web-based system. |

|  |  |
| --- | --- |
| Completion of this assignment will address the following learning outcomes: | |
| 1 | Critically analyse, examine and test software for security vulnerabilities. |
| 2 | Create software in a range of programming languages to exploit the vulnerabilities of systems. |

|  |
| --- |
| **Task:** |
| Write a technical report detailing a systematic review of the security issues of a substantial web-based system with known vulnerabilities, reporting on proven vulnerabilities exploited by attack and potential mitigations that could be implemented (1500 words). Select three of the following vulnerabilities, review them and conduct a practical demonstration on how these vulnerabilities were identified, remediated along with the strategies followed. Finally, document all your practical work with detail screenshots of every step taken.    Vulnerabilities should not be limited to the following:   * String manipulation. * Buffer overflows and memory exploits. * Trojans * Backdoors. * Privilege escalation. * Injection (e.g. SQL injection) and cross-site scripting * Cross-site scripting. |

**Guidance notes and considerations**

**Late Submission**

If you are not able to complete your coursework on time due to extenuating circumstances, the ONLY way to receive an extension (up to 5 working days) or a deferral (anything longer than 5 working days) is to contact a Registry team member located at your specific CU site.

CU Coventry [– Registry.cuc@coventry.ac.uk](mailto:–%20Registry.cuc@coventry.ac.uk)

CU London – [Registry.cul@coventry.ac.uk](mailto:Registry.cul@coventry.ac.uk)

CU Scarborough – [Registry.cus@coventry.ac.uk](mailto:Registry.cus@coventry.ac.uk)

\* Extenuating circumstances are defined by CU as ‘genuine circumstances beyond your control or ability to foresee, and which seriously impair your assessed work’.

\* Please note that you will need to provide third party evidence to support your reasoning for requiring an extension or deferral.

\* Your course tutor is NOT able to approve an extension or a deferral, if you have not completed the official forms and had your request approved your work will count as not submitted and receive a zero mark.

**Plagiarism and Malpractice**

\* You are encouraged to check the originality of your work by using the draft Turnitin links on your Moodle Web.

\* Collusion between students (where sections of your work are similar to the work submitted by other students in this or previous module cohorts) is taken extremely seriously and will be reported to the academic conduct panel. This applies to all coursework and exam answers.

\* A marked difference between your writing style, knowledge and skill level demonstrated in class discussion, any test conditions and that demonstrated in a coursework assignment may result in you having to undertake a Viva Voce in order to prove the coursework assignment is entirely your own work.

\* If you make use of the services of a proof reader in your work you must keep your original version and make it available as a demonstration of your written efforts.

\* You must not submit work for assessment that you have already submitted (partially or in full), either for your current course or for another qualification of this university, unless this is specifically provided for in your assignment brief or specific course or module information.

Where earlier work by you is citable, ie. it has already been published/submitted, you must reference it clearly. Identical pieces of work submitted concurrently will also be considered to be self-plagiarism.

**Submission Guidelines**

There should be a title page which clearly identifies the following;

\* Name of the module \* Title of the Assessment

\* Assessment number \* Word count

The word count identified includes quotations, but excludes the bibliography and unless specifically stated, encompasses a discrepancy of + or – 10%.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Banding** | **Knowledge and Understanding**  **(30%)** | **Analysis, Interpretation and Application of Theory**  **(30%)** | **Quality of Research**  **(20%)** | **Academic Writing**  **(20%)** |
| **90-100%** | Exceptional knowledge base exploring and analysing the discipline and its theory with extraordinary originality and autonomy. | Makes exceptional use of a range of relevant techniques of interpretation, application and/or analysis, where relevant to the module learning outcomes. Demonstrates an exceptional theoretical understanding, where relevant, with appropriately selected theoretical knowledge integrated into the overall assignment tasks and all learning outcomes. | Exceptional exploration of wider academic sources with a high degree of independent learning which exceeds the assignment brief. Sources have been accurately interpreted and integrated with flawless synthesis and evaluation leading to innovative and interesting ideas. | Exceptional answer with coherent and logical presentation of ideas. The answer is clearly expressed with flair and originality. No language errors present and academic writing style was adhered to throughout. Referencing in the APA 7th Edition style has been employed in an accurate manner. |
| **80-89%** | Outstanding knowledge base exploring and analysing the discipline and its theory with clear originality and autonomy. | Makes outstanding use of a range of relevant techniques of interpretation, application and/or analysis, where relevant to the module learning outcomes. Shows a well-developed ability to compare alternative theories and apply them within the context of the assignment task and all learning outcomes, where relevant. | Outstanding exploration of wider academic sources with a high degree of independent learning which exceeds the assignment brief. Sources have been accurately interpreted and integrated with a high degree of analysis and application, leading to innovative and interesting ideas. | Outstanding answer with coherent and logical presentation of ideas. The answer is clearly expressed with originality. No language errors present and academic writing style was adhered to. Referencing in the APA 7th Edition style has been employed in an accurate manner. |
| **70-79%** | Excellent knowledge base that supports analysis and/or interpretation and problem-solving in theory and/or practice within the discipline, with considerable originality. | Makes excellent use of established techniques of interpretation, application and/or analysis, where relevant to the module learning outcomes. Shows a systematic and accurate understanding of key theories, which are consistently and appropriately applied within the context of the assignment task and all learning outcomes, where relevant. | Excellent exploration of wider academic sources with evidence of independent learning which may exceed the assignment brief. Sources have been accurately interpreted, integrated and analysed, with an attempt made at synthesis leading to interesting ideas. | Excellent answer with coherent and logical presentation of ideas. The answer is entirely relevant and focused. Minimal language errors which have no impact on clarity of expression. Academic writing style was adhered to. Referencing in the APA 7th Edition style has been employed in an accurate manner. |
| **60-69%** | Very good knowledge base that supports analysis and/or interpretation and problem-solving in theory and/or practice within the discipline, with some originality displayed. | Makes very good use of established techniques of interpretation, application and/or analysis, where relevant to the module learning outcomes. Shows an accurate understanding of key theories, where relevant, which are appropriately applied within the context of the assignment task and the module learning outcomes. | Very good evidence of wider academic reading which indicates an approach to independent learning. Sources have been accurately interpreted and integrated with some attempt at analysis. | Very good answer with coherent and logical presentation of ideas. The answer is largely relevant and focused. Some language errors may be present but do not impact on the clarity of expression. Academic writing style was inconsistently adhered to. Referencing in the APA 7th Edition style is mostly accurate with some minor errors. |
| **50-59%** | Good knowledge base that supports some analysis and/or interpretation and problem-solving in theory and/or practice within the discipline. | Makes good use of established techniques of interpretation, application and/or analysis, where relevant to the module learning outcomes. Sound descriptive knowledge of key theories, where relevant, with some appropriate application. | Good evidence of academic reading, with some attempt at moving beyond the recommended texts. Interpretation of sources has been largely accurate, but there may be some instances of misunderstanding. Limited evidence of integration and analysis. | Good answer with some attempt at coherent and logical presentation. The answer contains some irrelevant material and lacks focus at points. Some language errors are present which impacts on clarity at times. Academic writing style is not adhered to at all times. Referencing in the APA 7th Edition style is present, however may not be entirely accurate at times. |
| **40-49%** | Satisfactory knowledge base demonstrating comprehension and formulation of basic knowledge with some omissions at the level of theoretical understanding.  Limited ability to discuss theory and solve problems within the discipline. | Makes satisfactory but limited use of established techniques of interpretation, application and/or analysis, where relevant to the module learning outcomes.  Selection of theory, where relevant, is satisfactory but application and/or understanding is limited. | Satisfactory evidence of academic reading, with no obvious attempt to move beyond the recommended texts. Interpretation of sources may be inaccurate and poorly integrated. Analysis is unlikely to have been attempted. | Satisfactory answer, however, issues with coherence and logical presentation are likely to be present. The answer contains irrelevant material and lacks focus. Language errors are frequent which impacts on clarity and academic writing style is not present. Referencing in the APA 7th Edition style may be incomplete and is inaccurate. |
| **35-39%**  **(Marginal Fail)** | Outcomes not or only partially met. Restricted knowledge base demonstrated. Limited understanding of discipline. Difficulty with linking theory and problem solving within the discipline. | Attempts at analysis, where relevant, and interpretation are ineffective and/or uninformed by the discipline. Knowledge of theory, where relevant, is inaccurate and/or incomplete. Choice of theory inappropriate. Application and/or understanding demonstrated is very limited. | Limited evidence of reading at an academic level. Sources used may be inappropriate and interpreted poorly. No evidence of integration, analysis or interpretation. Poor academic practice may have resulted in sections of plagiarised material. | Answer is attempted but limited. Poor coherence and illogical presentation. The answer contains irrelevant material and lacks focus throughout. Language errors are consistent and impact on the clarity of expression. Academic writing style is not present. Referencing in the APA 7th Edition style is incomplete and inaccurate. |
| **0 – 34%** | Little or no evidence of knowledge base. Little evidence of understanding of discipline. Significant difficulty with theory and problem solving within the discipline. | Absence of relevant theoretical content and/or use of theory, where relevant. Lacks any analysis and interpretation. | Inadequate evidence of reading at an academic level with poor application of sources and ideas. Answer is likely to include inappropriate references which are misunderstood and not integrated. Possibility of plagiarism OR no evidence of academic research. Answer may not be research based. | Serious and fundamental flaws leading to an unclear answer. Very weak academic skills and writing ability. Poorly structured with multiple language errors. Inadequate application of APA 7th Edition referencing style. |