# Solent University

# Coursework Assessment Brief

# Assessment Details

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| Module Title: | Introduction to Artificial Intelligence |
| Module Code: | COM526 |
| Module Leader: | Dr Drishty Sobnath |
| Level: | 5 |
| Assessment Title: | Application of AI |
| Assessment Number: | AE2 |
| Assessment Type: | Software Prototype with Report |
| Restrictions on Time/Word Count: | 2000 words |
| Consequence of not meeting time/word count limit: | There is no penalty for submitting below the word/count limit, but students should be aware that there is a risk they may not maximise their potential mark.  Assignments should be presented appropriately in line with the restrictions stated above; if an assignment exceeds the time/word count this will be taken in account in the marks given using the assessment criteria shown. |
| Individual/Group: | Individual |
| Assessment Weighting: | 50% |
| Issue Date: | Week starting 27th September 2021 |
| Hand In Date: | 5th January 2022 |
| Planned Feedback Date: | Within 4 weeks after submission |
| Mode of Submission: | Online |
| Number of copies to be submitted: | 1 |
| Anonymous Marking | This assessment will be marked anonymously. |

# Assessment Task

Artificial Intelligence (AI) is incessantly getting more sophisticated and pervasive with every passing day, if not minute. While it is often deemed as a staple for science fiction fans, its applications in day-to-day life are tremendous. You probably utilise AI and its faction, ML (Machine Learning), in more places than you can probably imagine.

You are asked to develop a working prototype applying appropriate AI methods to solve an identified problem. The product you will build is intended to simulate a real-world problem. You will also be required to consider legal, social, ethical and professional issues as appropriate and relevant to your software product.

You are required to build a working prototype of one of the following:

* Automatic chatbot tool (Automated responders and online customer support) A chatbot is an intelligent piece of software that is capable of communicating and performing actions similar to a human. Chatbots are used a lot in customer interaction, marketing on social network sites and instantly messaging the client. You need to propose and develop an approach for an automatic chatbot tool.
* Smart email categorisation

Classification of documents necessarily has to involve some analysis of the contents of a document. You need to propose and develop an approach to intelligent email categorisation using appropriate algorithms. Categorisation is based on not only the body but also the header of an email message or sender.

* Sudoku Solver

Sudoku is one of the world’s most popular puzzles. It consists of a 9x9 grid, and the objective is to fill the grid with digits in such a way that each row, each column, and each of the 9 principal 3x3 sub-squares contains all of the digits from 1 to 9. You need to propose and develop an approach to intelligent sudoku solver.

# You will be expected to demonstrate your working prototype and the session will be arranged by your tutor. You will also be required to send your source code. Your report structure could have the following sections although you need to add more subsections; Introduction, Statement of the problem, Aims and Objectives, Proposed Solution, Prototype Development & AI Algorithms, Limitation and Conclusion. Your submission should consist of the following:

1. Your report (Word or PDF)
2. Your source code

# You will be working in pair for the implementation of the prototype. However, the report needs to be written individually.

# Assessment criteria

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| **A1-A2** | **A3-A4** | **B1-B3** | **C1-C3** | **D1-D3** | **F1-F3** |
| **Introduction, Statement of the problem, Aims and Objectives (1/3)** | | | | | |
| Excellent introduction and overall report. Evidence of independence of thought and ability to build upon experience, supported by literature from high quality resources. | Good introduction and overall report supported by literature from good resources. | Detailed introduction and overview of the topic supported by a wide range of appropriate sources. The report is unambiguous and clear. | Identifies relevant key themes using appropriately cited sources. | Outlines a basic introduction to the topic with limited resources from the literature. | Little or no clear introduction to the topic. |
| **Prototype Development & AI Algorithms (1/3)** | | | | | |
| Consistent high-level competence in all the required specialised practical, technical innovation, creative, with mastery in many areas and developed understanding of professional contexts and expectations. Exceptional demonstration that proves the artefact goes far beyond expectation, attention to industry standards. | Consistent competence in all the required specialised practical, technical innovation, creative, with indications of mastery in some areas and clear understanding of professional contexts and expectations. Excellent demonstration that proves the artefact goes beyond expectation, attention to industry standards. | Competence in all the required specialised practical, technical, creative, scholarly or work-related skills, with indications of more developed ability in some areas and awareness of professional contexts and expectations. Very Good demonstration that proves the artefact goes beyond expectation, attention to industry standards. | Achieves a basic level of competence in all the required specialised practical, technical, creative, scholarly or work-related skills, with more developed capability in at least one area, and some awareness of professional contexts and expectations. Demonstration shows that the artefact is equal to expectation, attention to industry standards. | Basic competence in all the required specialised practical, technical, creative, scholarly or work-related skills, and partial awareness of professional contexts and expectations. Demonstration shows that the artefact with limited functionality. | Marginally or fails to achieve basic competence in (some of) the required specialised practical, technical, creative, scholarly or work-related skills, and little or lacks awareness of professional contexts and expectations. Demonstration shows that the artefact is poor, lacks functionality or does not work, and falls well below expectation, no attention to industry standards. |
| **Presentation of work and Communication (1/3)** | | | | | |
| Exceptional presentation and organisation of work and fluent communication in all contexts. | Excellent presentation and organisation of work and fluent communication in most contexts. | Presentation and organisation of work appropriate to context and purpose, communication clear. | Satisfactory organisation and presentation of work, communications mostly appropriate to the context/purpose. | Organisation and presentation of work and communications adequate in most contexts, with some mistakes/irrelevancies. | Elements of disorganisation/poor presentation/poor communication or expression or Communications too brief or rambling, inappropriate to context or purpose, with many errors/omissions, inadequately expressed/presented. |

# Learning Outcomes

This assessment will enable students to demonstrate in full or in part the learning outcomes identified in the Module descriptors.

# Late Submissions

Students are reminded that:

1. If this assessment is submitted late i.e. within 5 working days of the submission deadline, the mark will be capped at 40% if a pass mark is achieved;
2. If this assessment is submitted later than 5 working days after the submission deadline, the work will be regarded as a non-submission and will be awarded a zero;
3. If this assessment is being submitted as a referred piece of work then it must be submitted by the deadline date; any Refer assessment submitted late will be regarded as a non-submission and will be awarded a zero.

<https://students.solent.ac.uk/official-documents/quality-management/academic-handbook/2o-assessment-principles-regulations-temporary-amendments-for-covid-19-contingency-plans.pdf>

# Extenuating Circumstances

The University’s Extenuating Circumstances procedure is in place if there are genuine circumstances that may prevent a student submitting an assessment. If students are not 'fit to study’, they can either request an extension to the submission deadline of 5 working days or they can request to submit the assessment at the next opportunity (Defer). In both instances, students must submit an EC application with relevant evidence. If accepted by the EC Panel there will be no academic penalty for late submission or non-submission dependent on what is requested. Students are reminded that EC covers only short term issues (20 working days) and that if they experience longer term matters that impact on learning then they must contact the Student Hub for advice.

Please find a link to the EC policy below:

<https://students.solent.ac.uk/official-documents/quality-management/academic-handbook/2p-extenuating-circumstances.pdf>

# Academic Misconduct

Any submission must be students’ own work and, where facts or ideas have been used from other sources, these sources must be appropriately referenced. The University’s Academic Handbook includes the definitions of all practices that will be deemed to constitute academic misconduct. Students should check this link before submitting their work.

Procedures relating to student academic misconduct are given below:

<https://students.solent.ac.uk/official-documents/quality-management/academic-handbook/4l-student-academic-misconduct-procedure.pdf>

**Ethics Policy**

The work being carried out by students must be in compliance with the Ethics Policy. Where there is an ethical issue, as specified within the Ethics Policy, then students will need an ethics release or an ethical approval prior to the start of the project.

The Ethics Policy is contained within Section 2S of the Academic Handbook:

<https://staff.solent.ac.uk/official-documents/quality-management/academic-handbook/2s-solent-university-ethics-policy.pdf>

**Grade marking**

The University uses a letter grade scale for the marking of assessments. Unless students have been specifically informed otherwise their marked assignment will be awarded a letter grade. More detailed information on grade marking and the grade scale can be found on the portal and in the Student Handbook.

<https://students.solent.ac.uk/official-documents/quality-management/academic-handbook/2o-annex-3-assessment-regulations-grade-marking-scale.docx>

**Guidance for online submission through Solent Online Learning (SOL)**

<http://learn.solent.ac.uk/onlinesubmission>