**­Section: Programming (Advocate: Manish Gadhvi)**

**P1 Provide a definition of what an algorithm is and outline the process in building an application.**

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| <https://github.com/Fabijuss/glossary>  <https://github.com/Fabijuss/Programming/blob/master/Application-Building.md>  <https://github.com/Fabijuss/Programming/blob/master/Application-Building.md#algorithms> |
| The first link is for the glossary document, within this document there is an entry for ‘algorithm’. This gives a simple definition of what an algorithm is in terms of programming, this should provide evidence for the first part of the criteria. The second link is to a short report which outlines the process in building an application, it outlines what development models are and what phases may be involved in the development of an application. This should provide evidence that meets the second part of the criteria. The third link is to a section which provides more evidence for the definition of what an algorithm is. |

**P2 Give explanations of what procedural, object orientated and event driven paradigms are; their characteristics and the relationship between them.**

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| <https://github.com/Fabijuss/Programming/blob/master/Paradigms.md> |
| The link provided leads to the Paradigms document, this document is a short report explaining paradigms and their relationships. The report has three sections, one for each paradigm, explaining what they are. This should provide evidence that meets the first part of the criteria. The report also features a section on the relationships between paradigms, which compares differences between the paradigms. This should provide evidence for the second part of the criteria. |

**P3 Write a program that implements an algorithm using an IDE.**

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| <https://github.com/Fabijuss/High-Low>  <https://github.com/Fabijuss/High-Low/blob/master/source/main.cpp> |
| The first link provided leads to the repository of the Higher or Lower game project. Within this repository is the documentation and the code which was used to create the application. In the documentation, there is a section labelled ‘Algorithm’ which shows the algorithm which was used for the application. There is another section within the documentation labelled ‘Platform’. Under this section of the documentation, the IDE used for the project is outlined. In the section labelled ‘Flowchart’, is the algorithm which was used for the application in the form of a flowchart. The second link leads to the final code of the project, which was created using the algorithms used in the documentation. |

**P4 Explain the debugging process and explain the debugging facilities available in the IDE.**

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| <https://github.com/Fabijuss/Programming/blob/master/Debugging.md>  https://github.com/Fabijuss/Programming/blob/master/Integrated-Development-Environment.md |
| The first link provided links to a report about debugging, this report covers the definition and the process of debugging along with the facilities available for debugging in IDEs. The debugging process is explained in four sections which cover the steps involved in the debugging of applications. This should provide evidence for the first part of the criteria. The second link provided is a report covering the features of an IDE, this report has sections which cover the facilities and features which can aid the process of debugging. |

**P5 Outline the coding standard you have used in your code.**

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| <https://github.com/Fabijuss/trace-ball#coding-standards>  <https://github.com/Fabijuss/High-Low#coding-standards>  <https://github.com/Fabijuss/Calendar#coding-standards> |
| The three links provided are the ‘Coding Standards’ sections found in the documentation of each project. These sections are used to cover the different coding standards involved in the creation of the applications. They provide different sections describing what each coding standard used is, and include examples of what the code should or should not look like according to the standards. |

**M1 Determine the steps taken from writing code to execution.**

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| <https://github.com/Fabijuss/Programming/blob/master/Code-to-Execution.md> |
| The link provided is to a report document which covers the steps taken from the writing of the code, to the execution of the application. This report is split into a few sections, which covers the steps taken for both compilation and interpretation. |

**M2 Analyse the common features that a developer has access to in an IDE.**

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| https://github.com/Fabijuss/Programming/blob/master/Integrated-Development-Environment.md |
| The link provided leads to a report document covering the features of an Integrated Development Environment. Within this document are sections which cover the different aspects of an IDE, explaining what they do, and how developers use them. The different IDE features covered in this document include: text editor, compiler, debugger and management tools. |

**M3 Use the IDE to manage the development process of the program.**

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| https://github.com/Fabijuss/Programming/blob/master/IDE-Development.md |
| The link provided links to a report which covers the development process of a program using an IDE. In this report are a number of sections which explain how the IDE was used to develop the program. The IDE used for this is the online IDE named ‘repl.it’, its features and how they were used in the development process are explained in the report. |

**M4 Evaluate how the debugging process can be used to help develop more secure, robust applications.**

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| <https://github.com/Fabijuss/Programming/blob/master/Debugging.md#building-a-robust-application> |
| The link provided is to a subsection of a report document which covers debugging, the subsection of this report explains how debugging allows for a more robust and secure application. In these sections, the processes in debugging that make an application robust are explained, as well as explaining how the debugging process leads to more secure applications. |

**D1 Examine the implementation of an algorithm in a suitable language. Evaluate the relationship between the written algorithm and the code variant.**

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| https://github.com/Fabijuss/Programming/blob/master/Implementation-of-an-Algorithm.md |
| The provided link is to a report document which covers the implementation of the algorithm in the form of a flowchart, into an application created in C++. There is a section in the document which analyses and explains the relationship between the algorithm and the final code, going over the differences between the code and the flowchart algorithm. |

**D2 Critically evaluate the source code of an application which implements the programming paradigms, in terms of the code structure and characteristics.**

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| <https://github.com/Fabijuss/Programming/blob/master/Application-Evaluation.md> |
| The provided link is to a report document which evaluates the source code, going over the way the programming paradigms were implemented into the code. In particular, the structure of the code and the different characteristics of it are analysed, in order to evaluate the usage of paradigms. |

**D3 Evaluate the use of an IDE for development of applications contrasted with not using an IDE.**

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| <https://github.com/Fabijuss/Programming/blob/master/IDE-Evaluation.md> |
| The provided link is to a report which evaluates the key differences in development when using an IDE and when not using one. In this report, there are two sections which go over the key differences in the two methods of development. Within these sections, the programming experience is described along with the benefits and drawbacks that come with it. |

**D4 Critically evaluate why a coding standard is necessary in a team as well as for the individual.**

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| <https://github.com/Fabijuss/Programming/blob/master/Coding-Standard-Evaluation.md> |
| The provided link is to a report which evaluates the importance of using coding standards. The report features two sections, covering the use of coding standard individually as well as their use in a team. These sections include the main reasons for using coding standards, as well as their benefits in the given environment. |