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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 24/11/2020 |
| Topics of Discussion | * Creation of project plan. (Showing project management, using agile approach, sprints etc.) * Random/swap operators to be used within PSO. * Reinforcement learning algorithm will decide which operator will work best within PSO. * Main area: Researching PSO with binary problems. * Creation of OneDrive folder containing everything. * Ethical sheet. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 08/12/2020 |
| Topics of Discussion | * Start coding (and planning for code), look at existing ideas similar and create a working plan / pseudocode etc. * Minimal functionality at least by break. * Ethical sheet completed. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 05/01/2021 |
| Topics of Discussion | * Discussed code implemented so far (particle classes and current implementation of code.) * Read through information on how to implement it. * Read through data files. * Creation of binary arrays to show which items go into which knapsack (1st constraint goes to 1st knapsack, 2nd constraint goes to 2nd knapsack). * Understanding of binary arrays calculate fitness. (fitness = knapsacks binary values \* weights if sizes of each total knapsack <= 600.) * Read through particle swarm optimization. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 08/01/2021 |
| Topics of Discussion | * Discussed code produced. * Discussed optimisation in PSO. * Discussed how to calculate pBest, comparing range to other particles etc. * Discussed a powerpoint on PSO. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 20/01/2021 |
| Topics of Discussion | * Using range for velocities and positions. * Checking pseudocode and talking about implementing. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 27/01/2021 |
| Topics of Discussion | * Discussed new pseudocode produced. * Added changes to pseudocode. * Created new pseudocode and got feedback. * Discussed next area to code. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 02/02/21 |
| Topics of Discussion | * Discussed some bugs in code and understanding for that. * Discussed progressing further in project. * Discussed only learning to gBest. * Discussed further learning gBest. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 16/02/2021 |
| Topics of Discussion | * Detailed addition of two more mutation operators, randomly selecting one of three for added optimization. * Discussed basic sequence diagrams. * Discussed information regarding if size is equal to 0, should it be added to knapsack? |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 02/03/2021 |
| Topics of Discussion | * Further discussed mutation operators and choice of operators. * Discussed some areas to make changes with mutation, selection scheme etc. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 04/04/2021 |
| Topics of Discussion | * Discussed poster. (Good structure, too much text. Needed more focus on diagrams.) * Keep best solution of all generations throughout program to show at end best solution found (if not one has been reached). * Discussed implementing Q-Learning itself, discussed the use of OpenAI Gym and the positives and negatives. * Need to research tabular Q-Learning. * Implement a repair function (if it goes above capacity.) * Change code on old specific codes such as PSO, PSO w/ Single Mutation, PSO w/ Multiple Mutation, PSO w/ Adaptive Selection to show graphs for write up. * Change capacity code on old files. * Non-functional requirements need to be changed. They seem to be too ‘functional’, need some based on performance, efficiency, usability, reusability, interoperability. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 16/03/2021 |
| Topics of Discussion | * Discussed finishing PSO with Reinforcement Learning Q-Learning algorithm. * Detailed showing data in tables etc. * Talking about thesis of randomly choosing single mutation, mutation multiples, PM based selection, Q-Learning. |

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| Meeting Log | |
| Members | Tom South, Mehmet Aydin |
| Date | 30/3/2021 |
| Topics of Discussion | * Discussed changes to write up of systems project. * Needed to add areas within requirements from literature review. * Discussed possibility of adding a user story to narrate the knapsack problem. |