**Searching Algorithms**

**Handout 1 – Searching Algorithms: Student led tasks**

**Task 1 - Linear search**

1. Describe the steps that a linear search would take to find Simon in the below data set

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fred | Bob | Sally | Simon | John | Ajay |

|  |
| --- |
|  |

1. Below is a list of numbers. Describe the steps that a linear search would find number 4

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 6 | 3 | 7 | 6 | 4 |

|  |
| --- |
|  |

1. Describe the steps a linear search would take when searching for a number that is **not** in the given list.

|  |
| --- |
|  |

**Task 2 - Binary search**

1. Show the stages of a binary search to find the word ‘**Terry**’ when applied to the data shown.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Alice | Fred | Geraint | Loise | Ravina | Sam | Steven | Terry | Wilma |

|  |
| --- |
|  |

1. Explain how a binary search would find the word “house” below.

|  |  |  |  |
| --- | --- | --- | --- |
| Apartment | Brick | Bungalow | House |

|  |
| --- |
|  |

1. State one reason why a binary search can’t be used on the below data set?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5 | 3 | 2 | 1 | 8 |

|  |
| --- |
|  |

3.1. State a searching algorithm that can be used on the above data?

|  |
| --- |
|  |

**Task 3 – Gameboard**

Complete the below activity

<https://isaaccs.org/assignment/9c661cf8-3cbb-41b8-a7a9-7e604041c77c>

**Further Reading Isaac Computer Science**

For further reading on searching algorithms visit the Isaac Computer Science website- <https://isaaccomputerscience.org/topics/searching?examBoard=all&stage=all>