The base type for two sets is even numbers from 1 to 50

If setA has the following elements:

(4, 48, 32, 12, 40, 22, 18, 36, 6, 34, 14, 26, 16)

If setB has the following elements:

(20, 4, 38, 48, 30, 32, 10, 12, 24, 42, 40, 44, 8)

1. Show a bit vector representation for each of the sets:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

setA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 |
| 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |

setB

1. Show a bit vector for the set setA U setB (union)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |

setA U setB

1. Show a bit vector for the set setA ∩ setB (intersection)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 |
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

setA ∩ setB

1. Show a bit vector for the set setA - setB

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 |
| 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

setA - setB

If setA has the following elements: (4, 48, 32, 12, 40, 22, 18, 36, 6, 34, 14, 26, 16)

If setB has the following elements: (20, 4, 38, 48, 30, 32, 10, 12, 24, 42, 40, 44, 8)

1. Show an implicit representation of setA and setB

setA setB

|  |
| --- |
| 4 |
| 48 |
| 32 |
| 12 |
| 40 |
| 22 |
| 18 |
| 36 |
| 6 |
| 34 |
| 14 |
| 26 |
| 16 |

|  |
| --- |
| 20 |
| 4 |
| 38 |
| 48 |
| 30 |
| 32 |
| 10 |
| 12 |
| 24 |
| 42 |
| 40 |
| 44 |
| 8 |

1. Show implicit representation of setA U setB

setA U setB

|  |
| --- |
| 4 |
| 48 |
| 32 |
| 12 |
| 40 |
| 22 |
| 18 |
| 36 |
| 6 |
| 34 |
| 14 |
| 26 |
| 16 |
| 20 |
| 38 |
| 30 |
| 10 |
| 24 |
| 42 |
| 44 |
| 8 |

1. Show implicit representation of setA ∩ setB

setA ∩ setB

|  |
| --- |
| 4 |
| 48 |
| 32 |
| 12 |
| 40 |

1. Show implicit representation of setA - setB

setA - setB

|  |
| --- |
| 22 |
| 18 |
| 36 |
| 6 |
| 34 |
| 14 |
| 26 |
| 16 |

Binary File Learning Experience:

* When it comes to sizes, binary files use less storage than ASCII files.
* Binary files are more compact than ASCII files and are frequently used for large data files.
* You need to define the structure of the fields in the file in order to correctly read in binary files.