Homework1

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Problem 1 output:

```
Please enter a positive integer:
42
Please enter a second positive integer:
5
Displaying sizes of various datatypes:
A bool is 1 bytes long
A char is 1 bytes long
A int is 4 bytes long
A float is 4 bytes long
A double is 8 bytes long
42 raised to the power of 5 is 1.30691e+08
42 is the larger number between 42 and 5
Printing a number in various bases:
Decimal: 42
Hexadecimal: 2A
Octal: 52
Binary: 101010
Printing a number in various bases:
Decimal: 5
Hexadecimal: 5
Octal: 5
Binary: 101
```

Problem 2 output:

```
Will now read a 3x3 matrix from file "matrix.txt"
Transposing the following matrix using array indices:
1 2 3
4 5 6
7 8 9
Transposed matrix is:
1 4 7
2 5 8
3 6 9
Transposing the following matrix using pointers:
1 2 3
4 5 6
7 8 9
Transposed matrix is:
1 4 7
2 5 8
3 6 9
```

Problem 3 output:

```
Number or Records to read? 15

PRINTING 10 RECORDS!
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Subaru, Outback, 2016, green
Toyota, Corolla, 2006, white
Dodge, Neon, 1993, pink
Ford, Fusion, 2013, yellow
Honda, Fit, 2015, blue
Ford, Expedition, 2009, silver
Toyota, Corolla, 2006, white
```

```
Ford, Fusion, 2013, yellow
Jeep, Cherokee, 1999, red
Mazda, Protoge, 1996, gold

SORTING RECORDS BY YEAR.....

PRINTING 10 RECORDS!
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Dodge, Neon, 1993, pink
Mazda, Protoge, 1996, gold
Jeep, Cherokee, 1999, red
Toyota, Corolla, 2006, white
Toyota, Corolla, 2006, white
Ford, Expedition, 2009, silver
Ford, Fusion, 2013, yellow
Ford, Fusion, 2013, yellow
Honda, Fit, 2015, blue
Subaru, Outback, 2016, green

SORTING RECORDS BY MAKE.....

PRINTING 10 RECORDS!
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Dodge, Neon, 1993, pink
Ford, Expedition, 2009, silver
Ford, Fusion, 2013, yellow
Ford, Fusion, 2013, yellow
Honda, Fit, 2015, blue
Jeep, Cherokee, 1999, red
Mazda, Protoge, 1996, gold
Subaru, Outback, 2016, green
Toyota, Corolla, 2006, white
Toyota, Corolla, 2006, white

CHECKING FOR DUPLICATES...

Ford, Fusion, 2013, yellow
Ford, Fusion, 2013, yellow
Toyota, Corolla, 2006, white
Toyota, Corolla, 2006, white
```