Terminal Output:

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[kanchankaushik@Vasudhas-MacBook-Air lab4 % java lab4main

Here is your Binary Search Tree:

Breadth-first Order:
$57.12  $23.44  $87.43  $18.36  $44.55  $68.98  $111.22 $11.00  $20.21  $36.18  $48.48  $77.77  $101.00 $543.21 $1.00   $21.00  $51.00  $345.67 $251.00 $151.00

In-order:
$1.00   $11.00  $18.36  $20.21  $21.00  $23.44  $36.18  $44.55  $48.48  $51.00  $57.12  $68.98  $77.77  $87.43  $101.00 $111.22 $151.00 $251.00 $345.67 $543.21

Pre-order:
$57.12  $23.44  $18.36  $11.00  $1.00   $20.21  $21.00  $44.55  $36.18  $48.48  $51.00  $87.43  $68.98  $77.77  $111.22 $101.00 $543.21 $345.67 $251.00 $151.00

Post-order:
$1.00   $11.00  $21.00  $20.21  $18.36  $36.18  $51.00  $48.48  $44.55  $23.44  $77.77  $68.98  $101.00 $151.00 $251.00 $345.67 $543.21 $111.22 $87.43  $57.12


How would you like to interact with the tree? (enter 'h' for a directory of commands)  h

User Command Directory:
h - user help directory
q - quit program
a (dollar value) - add a dollar value to tree
s (dollar value) - search for a dollar value
d (dollar value) - delete a dollar value from tree
p - print tree (in all 4 traversal methods)
EX:  a 31.43 - adds a dollar with value $31.43 to the tree


How would you like to interact with the tree? (enter 'h' for a directory of commands)  a 34.89

This value has been added to tree!

How would you like to interact with the tree? (enter 'h' for a directory of commands)  d 1

This value has been deleted from the tree!


How would you like to interact with the tree? (enter 'h' for a directory of commands)  p

Breadth-first Order:
$57.12  $23.44  $87.43  $18.36  $44.55  $68.98  $111.22 $11.00  $20.21  $36.18  $48.48  $77.77  $101.00 $543.21 $21.00  $34.89  $51.00  $345.67 $251.00 $151.00

In-order:
$11.00  $18.36  $20.21  $21.00  $23.44  $34.89  $36.18  $44.55  $48.48  $51.00  $57.12  $68.98  $77.77  $87.43  $101.00 $111.22 $151.00 $251.00 $345.67 $543.21

Pre-order:
$57.12  $23.44  $18.36  $11.00  $20.21  $21.00  $44.55  $36.18  $34.89  $48.48  $51.00  $87.43  $68.98  $77.77  $111.22 $101.00 $543.21 $345.67 $251.00 $151.00

Post-order:
$11.00  $21.00  $20.21  $18.36  $34.89  $36.18  $51.00  $48.48  $44.55  $23.44  $77.77  $68.98  $101.00 $151.00 $251.00 $345.67 $543.21 $111.22 $87.43  $57.12


How would you like to interact with the tree? (enter 'h' for a directory of commands)  s 543.21

This value was found in the tree!

How would you like to interact with the tree? (enter 'h' for a directory of commands)  a -45.89

This dollar value is invalid and cannot be added!
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How would you like to interact with the tree? (enter 'h' for a directory of commands)  a 151

This value already exists in the tree and cannot be added!

How would you like to interact with the tree? (enter 'h' for a directory of commands)  d 18.99

This value does not exist in the tree and cannot be removed!

How would you like to interact with the tree? (enter 'h' for a directory of commands)  s 1

This value was not found in the tree!

How would you like to interact with the tree? (enter 'h' for a directory of commands)  q

Here is your final Binary Search Tree:

Breadth-first Order:
$57.12  $23.44  $87.43  $18.36  $44.55  $68.98  $111.22 $11.00  $20.21  $36.18  $48.48  $77.77  $101.00 $543.21 $21.00  $34.89  $51.00  $345.67 $251.00 $151.00

In-order:
$11.00  $18.36  $20.21  $21.00  $23.44  $34.89  $36.18  $44.55  $48.48  $51.00  $57.12  $68.98  $77.77  $87.43  $101.00 $111.22 $151.00 $251.00 $345.67 $543.21

Pre-order:
$57.12  $23.44  $18.36  $11.00  $20.21  $21.00  $44.55  $36.18  $34.89  $48.48  $51.00  $87.43  $68.98  $77.77  $111.22 $101.00 $543.21 $345.67 $251.00 $151.00

Post-order:
$11.00  $21.00  $20.21  $18.36  $34.89  $36.18  $51.00  $48.48  $44.55  $23.44  $77.77  $68.98  $101.00 $151.00 $251.00 $345.67 $543.21 $111.22 $87.43  $57.12
```

File Output:

```
≡ output.txt
 1   Initial:
 2
 3
 4   Breadth-first Order:
 5   $57.12  $23.44  $87.43  $18.36  $44.55  $68.98  $111.22 $11.00  $20.21  $36.18  $48.48  $77.77  $101.00 $543.21 $1.00    $21.00  $51.00  $345.67 $251.00 $151.00
 6
 7   In-order:
 8   $1.00    $11.00  $18.36  $20.21  $21.00  $23.44  $36.18  $44.55  $48.48  $51.00  $57.12  $68.98  $77.77  $87.43  $101.00 $111.22 $151.00 $251.00 $345.67 $543.21
 9
10   Pre-order:
11   $57.12  $23.44  $18.36  $11.00  $1.00    $20.21  $21.00  $44.55  $36.18  $48.48  $51.00  $87.43  $68.98  $77.77  $111.22 $101.00 $543.21 $345.67 $251.00 $151.00
12
13   Post-order:
14   $1.00    $11.00  $21.00  $20.21  $18.36  $36.18  $51.00  $48.48  $44.55  $23.44  $77.77  $68.98  $101.00 $151.00 $251.00 $345.67 $543.21 $111.22 $87.43  $57.12
15
16
17   ----------------------------
18   Print:
19
20
21   Breadth-first Order:
22   $57.12  $23.44  $87.43  $18.36  $44.55  $68.98  $111.22 $11.00  $20.21  $36.18  $48.48  $77.77  $101.00 $543.21 $21.00  $34.89  $51.00  $345.67 $251.00 $151.00
23
24   In-order:
25   $11.00  $18.36  $20.21  $21.00  $23.44  $34.89  $36.18  $44.55  $48.48  $51.00  $57.12  $68.98  $77.77  $87.43  $101.00 $111.22 $151.00 $251.00 $345.67 $543.21
26
27   Pre-order:
28   $57.12  $23.44  $18.36  $11.00  $20.21  $21.00  $44.55  $36.18  $34.89  $48.48  $51.00  $87.43  $68.98  $77.77  $111.22 $101.00 $543.21 $345.67 $251.00 $151.00
29
30   Post-order:
31   $11.00  $21.00  $20.21  $18.36  $34.89  $36.18  $51.00  $48.48  $44.55  $23.44  $77.77  $68.98  $101.00 $151.00 $251.00 $345.67 $543.21 $111.22 $87.43  $57.12
32
33
34   Invalid Input: -45.89
35   Invalid Input: 151.0
36   Invalid Input: 18.99
37   ----------------------------
```

```
38    Final:
39
40
41    Breadth-first Order:
42    $57.12   $23.44   $87.43   $18.36   $44.55   $68.98   $111.22 $11.00   $20.21   $36.18   $48.48   $77.77   $101.00 $543.21 $21.00   $34.89   $51.00   $345.67 $251.00 $151.00
43
44    In-order:
45    $11.00   $18.36   $20.21   $21.00   $23.44   $34.89   $36.18   $44.55   $48.48   $51.00   $57.12   $68.98   $77.77   $87.43   $101.00 $111.22 $151.00 $251.00 $345.67 $543.21
46
47    Pre-order:
48    $57.12   $23.44   $18.36   $11.00   $20.21   $21.00   $44.55   $36.18   $34.89   $48.48   $51.00   $87.43   $68.98   $77.77   $111.22 $101.00 $543.21 $345.67 $251.00 $151.00
49
50    Post-order:
51    $11.00   $21.00   $20.21   $18.36   $34.89   $36.18   $51.00   $48.48   $44.55   $23.44   $77.77   $68.98   $101.00 $151.00 $251.00 $345.67 $543.21 $111.22 $87.43   $57.12
52
53
54
```