

TEST CASES FOR SQUARE_CUBE_APPLICATION

TEST CASE	INPUT	EXPECTED OUTPUT	ACTUAL OUTPUT	PASS?
A1	1	Integers 1-100 and their squares and cubes	Integers 1-100 and their squares and cubes (see screenshot)	YES
A2	2,25	Int: 25 Square: 625 Cube: 15625	Int: 25 Square: 625 Cube: 15625	YES
A3	3	The union of squares and cubes	The union of squares and cubes (see screenshot)	YES
A4	4	The intersection of squares and cubes is the following: [1,64,729,4096]	The intersection of squares and cubes is the following: [1,64,729,4096]	YES
A5	5	The difference of square and cubes	The difference of square and cubes (see screenshot)	YES
A6	6	Program terminates	Program terminates	YES
A7	asd	Integers Only Please. Please select a number from the menu. Try Again	Integers Only Please. Please select a number from the menu. Try Again	YES
A8	2,125	Number is not in the set of integers between 1 and 100, please try again.	Number is not in the set of integers between 1 and 100, please try again.	YES

TEST CASES FOR STATE_CAPITAL_BIRD_APPLICATION

TEST CASE	INPUT	EXPECTED OUTPUT	ACTUAL OUTPUT	PASS?
B1	1	Displays all US States in Alphabetical order	Displays all US States in Alphabetical order	YES
B2	2, maryland	20) Maryland, State Capital: Annapolis, State Bird: Baltimore Oriole	20) Maryland, State Capital: Annapolis, State Bird: Baltimore Oriole	YES
B3	3, Maryland, Parrot	State Bird Updated: 20) Maryland, State Capital: Annapolis, State Bird: Baltimore Oriole	State Bird Updated: 20) Maryland, State Capital: Annapolis, State Bird: Baltimore Oriole	YES
B4	4	Program terminates	Program terminates	YES
B5	Asd	Integers Only Please. Please select a number from the menu. Try Again	Integers Only Please. Please select a number from the menu. Try Again	YES
B6	2, united	*****State Not Found, Please Try Again.*****	*****State Not Found, Please Try Again.*****	YES
B7	3, folorida, Snake	*****State Not Found, Please Try Again.*****	*****State Not Found, Please Try Again.*****	YES

A1

```
Welcome to the square cube application

Please select from the following menu:
    1.Display the Square and Cube for Integers ranging from 1 to 100.
    2.Search for sets for a specific Integer and display the Square and Cube values.
    3.Display the Union of Square and Cube sets.
    4.Display the Intersection of Square and Cube sets.
    5.Display the Difference of Square and Cube sets.
    6.Exit the Program
Selection: 1
Int: 1      Square: 1      Cube: 1
Int: 2      Square: 4      Cube: 8
Int: 3      Square: 9      Cube: 27
Int: 4      Square: 16     Cube: 64
Int: 5      Square: 25     Cube: 125
Int: 6      Square: 36     Cube: 216
Int: 7      Square: 49     Cube: 343
Int: 8      Square: 64     Cube: 512
Int: 9      Square: 81     Cube: 729
Int: 10     Square: 100    Cube: 1000
Int: 11     Square: 121    Cube: 1331
Int: 12     Square: 144    Cube: 1728
Int: 13     Square: 169    Cube: 2197
Int: 14     Square: 196    Cube: 2744
Int: 15     Square: 225    Cube: 3375
Int: 16     Square: 256    Cube: 4096
```

A1

```
Welcome to the square cube application

Please select from the following menu:
1.Display the Square and Cube for Integers ranging from 1 to 100.
2.Search for sets for a specific Integer and display the Square and Cube values.
3.Display the Union of Square and Cube sets.
4.Display the Intersection of Square and Cube sets.
5.Display the Difference of Square and Cube sets.
6.Exit the Program

Selection: 1
Int: 1      Square: 1      Cube: 1
Int: 2      Square: 4      Cube: 8
Int: 3      Square: 9      Cube: 27
Int: 4      Square: 16     Cube: 64
Int: 5      Square: 25     Cube: 125
Int: 6      Square: 36     Cube: 216
Int: 7      Square: 49     Cube: 343
Int: 8      Square: 64     Cube: 512
Int: 9      Square: 81     Cube: 729
Int: 10     Square: 100    Cube: 1000
Int: 11     Square: 121    Cube: 1331
Int: 12     Square: 144    Cube: 1728
Int: 13     Square: 169    Cube: 2197
Int: 14     Square: 196    Cube: 2744
Int: 15     Square: 225    Cube: 3375
Int: 16     Square: 256    Cube: 4096
Int: 17     Square: 289    Cube: 4913
Int: 18     Square: 324    Cube: 5832
Int: 19     Square: 361    Cube: 6859
Int: 20     Square: 400    Cube: 8000
Int: 21     Square: 441    Cube: 9261
Int: 22     Square: 484    Cube: 10648
Int: 23     Square: 529    Cube: 12167
Int: 24     Square: 576    Cube: 13824
Int: 25     Square: 625    Cube: 15625
Int: 26     Square: 676    Cube: 17716
Int: 27     Square: 729    Cube: 19683
Int: 28     Square: 784    Cube: 21952
Int: 29     Square: 841    Cube: 24389
Int: 30     Square: 900    Cube: 27000
Int: 31     Square: 961    Cube: 29791
Int: 32     Square: 1024   Cube: 32768
Int: 33     Square: 1089   Cube: 35937
Int: 34     Square: 1156   Cube: 39304
Int: 35     Square: 1225   Cube: 42875
Int: 36     Square: 1296   Cube: 46656
Int: 37     Square: 1369   Cube: 50653
Int: 38     Square: 1444   Cube: 54872
Int: 39     Square: 1521   Cube: 59319
Int: 40     Square: 1600   Cube: 64000
Int: 41     Square: 1681   Cube: 68921
Int: 42     Square: 1764   Cube: 74088
Int: 43     Square: 1849   Cube: 79507
Int: 44     Square: 1936   Cube: 85184
Int: 45     Square: 2025   Cube: 91125
Int: 46     Square: 2116   Cube: 97336
Int: 47     Square: 2209   Cube: 103823
Int: 48     Square: 2304   Cube: 110592
Int: 49     Square: 2401   Cube: 117649
Int: 50     Square: 2500   Cube: 125000
Int: 51     Square: 2601   Cube: 132651
Int: 52     Square: 2704   Cube: 140608
Int: 53     Square: 2809   Cube: 148877
Int: 54     Square: 2916   Cube: 157464
Int: 55     Square: 3025   Cube: 166375
Int: 56     Square: 3136   Cube: 175616
Int: 57     Square: 3249   Cube: 185183
Int: 58     Square: 3364   Cube: 195112
Int: 59     Square: 3481   Cube: 205379
Int: 60     Square: 3600   Cube: 216000
Int: 61     Square: 3721   Cube: 226981
Int: 62     Square: 3844   Cube: 238328
Int: 63     Square: 3969   Cube: 250047
Int: 64     Square: 4096   Cube: 262144
Int: 65     Square: 4225   Cube: 274625
Int: 66     Square: 4356   Cube: 287496
Int: 67     Square: 4489   Cube: 299763
Int: 68     Square: 4624   Cube: 314432
Int: 69     Square: 4761   Cube: 328500
Int: 70     Square: 4900   Cube: 343000
Int: 71     Square: 5041   Cube: 357911
Int: 72     Square: 5184   Cube: 373248
Int: 73     Square: 5329   Cube: 389017
Int: 74     Square: 5476   Cube: 405224
Int: 75     Square: 5625   Cube: 421875
Int: 76     Square: 5776   Cube: 438976
Int: 77     Square: 5929   Cube: 456523
Int: 78     Square: 6084   Cube: 474552
Int: 79     Square: 6241   Cube: 493020
Int: 80     Square: 6400   Cube: 512000
Int: 81     Square: 6561   Cube: 531441
Int: 82     Square: 6724   Cube: 551368
Int: 83     Square: 6889   Cube: 571787
Int: 84     Square: 7056   Cube: 592704
Int: 85     Square: 7225   Cube: 614125
Int: 86     Square: 7396   Cube: 636056
Int: 87     Square: 7569   Cube: 658583
Int: 88     Square: 7744   Cube: 681672
Int: 89     Square: 7921   Cube: 704960
Int: 90     Square: 8100   Cube: 728400
Int: 91     Square: 8281   Cube: 753171
Int: 92     Square: 8464   Cube: 778088
Int: 93     Square: 8649   Cube: 804357
Int: 94     Square: 8836   Cube: 830984
Int: 95     Square: 9025   Cube: 857975
Int: 96     Square: 9216   Cube: 886476
Int: 97     Square: 9409   Cube: 915583
Int: 98     Square: 9604   Cube: 945312
Int: 99     Square: 9801   Cube: 975680
Int: 100    Square: 10000   Cube: 1000000
```

A2

```
Project3/square_cub +
Stop Run Config Name Command: Project3/square_cube_application.py

Welcome to the square cube application

Please select from the following menu:
    1.Display the Square and Cube for Integers ranging from 1 to 100.
    2.Search for sets for a specific Integer and display the Square and Cube values.
    3.Display the Union of Square and Cube sets.
    4.Display the Intersection of Square and Cube sets.
    5.Display the Difference of Square and Cube sets.
    6.Exit the Program
Selection: 2
Please enter a number between 1 and 100: 25
Int: 25      Square: 625      Cube: 15625
```

A3

```
Welcome to the square cube application

Please select from the following menu:
    1.Display the Square and Cube for Integers ranging from 1 to 100.
    2.Search for sets for a specific Integer and display the Square and Cube values.
    3.Display the Union of Square and Cube sets.
    4.Display the Intersection of Square and Cube sets.
    5.Display the Difference of Square and Cube sets.
    6.Exit the Program
Selection: 3
The union of squares and cubes is the following:
[1, 4, 8, 9, 16, 25, 27, 36, 49, 64, 81, 100, 121, 125, 144, 169, 196, 216, 225, 256, 289, 324, 343, 361, 400, 441, 484, 512, 529, 576, 625, 676, 729, 784, 841, 900, 961, 1000, 1024, 1089, 1156, 1225, 1296, 1331, 1369, 1444, 1521, 1600, 1681, 1728, 1764, 1849, 1936, 2025, 2116, 2197, 2209, 2304, 2401, 2500, 2601, 2704, 2744, 2809, 2916, 3025, 3136, 3249, 3364, 3375, 3481, 3600, 3721, 3844, 3969, 4096, 4225, 4356, 4489, 4624, 4761, 4900, 4913, 5041, 5184, 5329, 5476, 5625, 5776, 5832, 5929, 6084, 6241, 6400, 6561, 6724, 6859, 6889, 7056, 7225, 7396, 7569, 7744, 7921, 8000, 8100, 8281, 8464, 8649, 8836, 9025, 9216, 9261, 9409, 9604, 9801, 10000, 10648, 12167, 13824, 15625, 17576, 19683, 21952, 24389, 27000, 29791, 32768, 35937, 39304, 42875, 46656, 50653, 54872, 59319, 64000, 68921, 74088, 79507, 85184, 91125, 97336, 103823, 110592, 117649, 125000, 132651, 140608, 148877, 157464, 166375, 175616, 185193, 195112, 205379, 216000, 226981, 238328, 250047, 262144, 274625, 287496, 300763, 314432, 328509, 343000, 357911, 373248, 389017, 405224, 421875, 438976, 456533, 474552, 493039, 512000, 531441, 551368, 571787, 592704, 614125, 636056, 658503, 681472, 704969, 729000, 753571, 778688, 804357, 830584, 857375, 884736, 912673, 941192, 970299, 1000000]
```

A4

```
Welcome to the square cube application

Please select from the following menu:
    1.Display the Square and Cube for Integers ranging from 1 to 100.
    2.Search for sets for a specific Integer and display the Square and Cube values.
    3.Display the Union of Square and Cube sets.
    4.Display the Intersection of Square and Cube sets.
    5.Display the Difference of Square and Cube sets.
    6.Exit the Program
Selection: 4
The intersection of squares and cubes is the following:
[1, 64, 729, 4096]
```


A5

```
Welcome to the square cube application

Please select from the following menu:
  1.Display the Square and Cube for Integers ranging from 1 to 100.
  2.Search for sets for a specific Integer and display the Square and Cube values.
  3.Display the Union of Square and Cube sets.
  4.Display the Intersection of Square and Cube sets.
  5.Display the Difference of Square and Cube sets.
  6.Exit the Program
Selection: 5
The difference of squares and cubes is the following:
[4, 8, 9, 16, 25, 27, 36, 49, 81, 100, 121, 125, 144, 169, 196, 216, 225, 256, 289, 324, 343, 361, 400, 441, 484, 512,
529, 576, 625, 676, 784, 841, 900, 961, 1000, 1024, 1089, 1156, 1225, 1296, 1331, 1369, 1444, 1521, 1600, 1681, 1728,
1764, 1849, 1936, 2025, 2116, 2197, 2209, 2304, 2401, 2500, 2601, 2704, 2744, 2809, 2916, 3025, 3136, 3249, 3364, 3375,
3481, 3600, 3721, 3844, 3969, 4225, 4356, 4489, 4624, 4761, 4900, 4913, 5041, 5184, 5329, 5476, 5625, 5776, 5832, 5929,
6084, 6241, 6400, 6561, 6724, 6859, 6889, 7056, 7225, 7396, 7569, 7744, 7921, 8000, 8100, 8281, 8464, 8649, 8836, 9025,
9216, 9261, 9409, 9604, 9801, 10000, 10648, 12167, 13824, 15625, 17576, 19683, 21952, 24389, 27000, 29791, 32768, 35937,
39304, 42875, 46656, 50653, 54872, 59319, 64000, 68921, 74088, 79507, 85184, 91125, 97336, 103823, 110592, 117649,
125000, 132651, 140608, 148877, 157464, 166375, 175616, 185193, 195112, 205379, 216000, 226981, 238328, 250047, 262144,
274625, 287496, 300763, 314432, 328509, 343000, 357911, 373248, 389017, 405224, 421875, 438976, 456533, 474552, 493039,
512000, 531441, 551368, 571787, 592704, 614125, 636056, 658503, 681472, 704969, 729000, 753571, 778688, 804357, 830584,
857375, 884736, 912673, 941192, 970299, 1000000]
```

A6

```
Welcome to the square cube application

Please select from the following menu:
  1.Display the Square and Cube for Integers ranging from 1 to 100.
  2.Search for sets for a specific Integer and display the Square and Cube values.
  3.Display the Union of Square and Cube sets.
  4.Display the Intersection of Square and Cube sets.
  5.Display the Difference of Square and Cube sets.
  6.Exit the Program
Selection: 6

Thank You for Using The Square Cube Application.
```

A7

```
Project3/square_cube [icon] +
[icon] Stop [icon] Run Config Name Command: Project3/square_cube_application.py

Welcome to the square cube application

Please select from the following menu:
  1.Display the Square and Cube for Integers ranging from 1 to 100.
  2.Search for sets for a specific Integer and display the Square and Cube values.
  3.Display the Union of Square and Cube sets.
  4.Display the Intersection of Square and Cube sets.
  5.Display the Difference of Square and Cube sets.
  6.Exit the Program
Selection: asd
Integers Only Please
Please select a number from the menu. Try Again
```

A8

```
Welcome to the square cube application

Please select from the following menu:
    1.Display the Square and Cube for Integers ranging from 1 to 100.
    2.Search for sets for a specific Integer and display the Square and Cube values.
    3.Display the Union of Square and Cube sets.
    4.Display the Intersection of Square and Cube sets.
    5.Display the Difference of Square and Cube sets.
    6.Exit the Program
Selection: 2
Please enter a number between 1 and 100: 125
Number is not in the set of integers between 1 and 100, please try again.
```

B1

```
Project3/square_cub x Project3/state_capit x +
Run Run Config Name Command: Project3/state_capital_bird_application.py

4.Exit the application.
Selection: 1
1) Alabama, State Capital: Montgomery, State Bird: Yellowhammer
2) Alaska, State Capital: Juneau, State Bird: Willow Ptarmigan
3) Arizona, State Capital: Phoenix, State Bird: Cactus Wren
4) Arkansas, State Capital: Little Rock, State Bird: Mockingbird
5) California, State Capital: Sacramento, State Bird: California Valley Quail
6) Colorado, State Capital: Denver, State Bird: Lark Bunting
7) Connecticut, State Capital: Hartford, State Bird: American Robin
8) Delaware, State Capital: Dover, State Bird: Blue Hen Chicken
9) Florida, State Capital: Tallahassee, State Bird: Mockingbird
10) Georgia, State Capital: Atlanta, State Bird: Brown Thrasher
11) Hawaii, State Capital: Honolulu, State Bird: Hawaiian Goose
12) Idaho, State Capital: Boise, State Bird: Mountain Bluebird
13) Illinois, State Capital: Springfield, State Bird: Cardinal
14) Indiana, State Capital: Indianapolis, State Bird: Cardinal
15) Iowa, State Capital: Des Moines, State Bird: Eastern Goldfinch
16) Kansas, State Capital: Topeka, State Bird: Western Meadowlark
17) Kentucky, State Capital: Frankfort, State Bird: Cardinal
18) Louisiana, State Capital: Baton Rouge, State Bird: Eastern Brown Pelican
19) Maine, State Capital: Augusta, State Bird: Chickadee
20) Maryland, State Capital: Annapolis, State Bird: Baltimore Oriole
21) Massachusetts, State Capital: Boston, State Bird: Chickadee
22) Michigan, State Capital: Lansing, State Bird: American Robin
23) Minnesota, State Capital: Saint Paul, State Bird: Common Loon
24) Mississippi, State Capital: Jackson, State Bird: Mockingbird
25) Missouri, State Capital: Jefferson City, State Bird: Bluebird
26) Montana, State Capital: Helena, State Bird: Western Meadowlark
27) Nebraska, State Capital: Lincoln, State Bird: Western Meadowlark
28) Nevada, State Capital: Carson City, State Bird: Mountain Bluebird
29) New Hampshire, State Capital: Concord, State Bird: Purple Finch
30) New Jersey, State Capital: Trenton, State Bird: Eastern Goldfinch
31) New Mexico, State Capital: Santa Fe, State Bird: Greater Roadrunner
32) New York, State Capital: Albany, State Bird: Eastern Bluebird
33) North Carolina, State Capital: Raleigh, State Bird: Cardinal
34) North Dakota, State Capital: Bismarck, State Bird: Western Meadowlark
35) Ohio, State Capital: Columbus, State Bird: Cardinal
36) Oklahoma, State Capital: Oklahoma City, State Bird: Scissor-tailed Flycatcher
37) Oregon, State Capital: Salem, State Bird: Western Meadowlark
38) Pennsylvania, State Capital: Harrisburg, State Bird: Ruffed Grouse
39) Rhode Island, State Capital: Providence, State Bird: Rhode Island Red
40) South Carolina, State Capital: Columbia, State Bird: Carolina Wren
41) South Dakota, State Capital: Pierre, State Bird: Ring-necked Pheasant
42) Tennessee, State Capital: Nashville, State Bird: Mockingbird
43) Texas, State Capital: Austin, State Bird: Mockingbird
44) Utah, State Capital: Salt Lake City, State Bird: California Gull
45) Vermont, State Capital: Montpelier, State Bird: Hermit Thrush
46) Virginia, State Capital: Richmond, State Bird: Cardinal
47) Washington, State Capital: Olympia, State Bird: Willow Goldfinch
48) West Virginia, State Capital: Charleston, State Bird: Cardinal
49) Wisconsin, State Capital: Madison, State Bird: American Robin
50) Wyoming, State Capital: Cheyenne, State Bird: Western Meadowlark
```


B2

```
Welcome to the State Capital and Bird Application

Please select from the following menu:
    1.Display all U.S. States in Alphabetical order along with Capital and Bird.
    2.Search for a specific state and display the appropriate Capital and Bird.
    3.Update a Bird for a specific State.
    4.Exit the application.
Selection: 2
Please Enter State: maryland
20) Maryland, State Capital: Annapolis, State Bird: Baltimore Oriole
```

B3

```
Welcome to the State Capital and Bird Application

Please select from the following menu:
    1.Display all U.S. States in Alphabetical order along with Capital and Bird.
    2.Search for a specific state and display the appropriate Capital and Bird.
    3.Update a Bird for a specific State.
    4.Exit the application.
Selection: 3
Please Enter State: maryland
Please Enter new Bird: Parrot
State Bird Updated:  20) Maryland, State Capital: Annapolis, State Bird: Parrot
```

B4

```
Welcome to the State Capital and Bird Application

Please select from the following menu:
    1.Display all U.S. States in Alphabetical order along with Capital and Bird.
    2.Search for a specific state and display the appropriate Capital and Bird.
    3.Update a Bird for a specific State.
    4.Exit the application.
Selection: 4

Thank You for Using The State Capitol and Bird Application.
```


B5

```
Welcome to the State Capital and Bird Application

Please select from the following menu:
    1.Display all U.S. States in Alphabetical order along with Capital and Bird.
    2.Search for a specific state and display the appropriate Capital and Bird.
    3.Update a Bird for a specific State.
    4.Exit the application.
Selection: asd
Integers Only Please
Please select a number from the menu. Try Again
```

B6

```
Welcome to the State Capital and Bird Application

Please select from the following menu:
    1.Display all U.S. States in Alphabetical order along with Capital and Bird.
    2.Search for a specific state and display the appropriate Capital and Bird.
    3.Update a Bird for a specific State.
    4.Exit the application.
Selection: 2
Please Enter State: united

*****State Not Found, Please Try Again.*****
```

B7

```
Welcome to the State Capital and Bird Application

Please select from the following menu:
    1.Display all U.S. States in Alphabetical order along with Capital and Bird.
    2.Search for a specific state and display the appropriate Capital and Bird.
    3.Update a Bird for a specific State.
    4.Exit the application.
Selection: 3
Please Enter State: folorida
Please Enter new Bird: Snake

*****State Not Found, Please Try Again.*****
```