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1.a -1.d ) java file

1.e)

Set 1:

run:

This program will help you choose a car based on cost over time.

Please enter, on one line, the make, model and year

of the first comparison car: Toyota Sianna 2006

Please enter the make, model, and year of the second comparison car: Kia Soul 2012

Please enter the price and the average miles per gallon of the Toyota Sianna: 6000 63

Please enter the price and the average miles per gallon of the Kia Soul: 12000 32

Please enter a four-digit year which you consider as an old year for a car: 2010

What percentage of the original price of the new car that you want to assign for maintenance? 0.01

What percentage of the original price of the old car that you want to assign for maintenance? 0.05

How long do you want to keep the car in order to calculate the cost for the car? (enter the number of the years) 5

Do you want the program to calculate the cost per gallon as 2.75?

if you are fine with that enter yes, else enter no.

yes

The comparison of of car costs is the initial price

plus cost per year over 5 years with an average

of 15000 miles per year and a price of 2.75 per gallon of gas plus a

yearly maintenance cost of %1.0 of the original car cost

for cars newer than 2010 and %5.0 for older.

Total cost for the Toyota Sianna is 10773.81

Total cost for the Kia Soul is 19045.31

Set 2:

run:

This program will help you choose a car based on cost over time.

Please enter, on one line, the make, model and year

of the first comparison car: Toyota Corolla 2009

Please enter the make, model, and year of the second comparison car: Ford Taurus 2014

Please enter the price and the average miles per gallon of the Toyota Corolla: 21213.6 66

Please enter the price and the average miles per gallon of the Ford Taurus: 32118 47

Please enter a four-digit year which you consider as an old year for a car: 2009

What percentage of the original price of the new car that you want to assign for maintenance? -2.2

What percentage of the original price of the old car that you want to assign for maintenance? 10

How long do you want to keep the car in order to calculate the cost for the car? (enter the number of the years) 6

Do you want the program to calculate the cost per gallon as 2.75?

if you are fine with that enter yes, else enter no.

no

What is your number as cost per gallon? 3.2

The comparison of of car costs is the initial price

plus cost per year over 6 years with an average

of 15000 miles per year and a price of 3.2 per gallon of gas plus a

yearly maintenance cost of %-220.00000000000003 of the original car cost

for cars newer than 2009 and %1000.0 for older.

Total cost for the Toyota Corolla is -254442.28

Total cost for the Ford Taurus is -385711.94

Set 3:

run:

This program will help you choose a car based on cost over time.

Please enter, on one line, the make, model and year

of the first comparison car: Kia Optima 2006

Please enter the make, model, and year of the second comparison car: Ford Explorer 2011

Please enter the price and the average miles per gallon of the Kia Optima: 8043.84 75

Please enter the price and the average miles per gallon of the Ford Explorer: 11343.99 54

Please enter a four-digit year which you consider as an old year for a car: -64

invalid year.

Enter a valid year: 2008

What percentage of the original price of the new car that you want to assign for maintenance? .09

What percentage of the original price of the old car that you want to assign for maintenance? .04

How long do you want to keep the car in order to calculate the cost for the car? (enter the number of the years) 4

Do you want the program to calculate the cost per gallon as 2.75?

if you are fine with that enter yes, else enter no.

Yes

The comparison of of car costs is the initial price

plus cost per year over 4 years with an average

of 15000 miles per year and a price of 2.75 per gallon of gas plus a

yearly maintenance cost of %9.0 of the original car cost

for cars newer than 2008 and %4.0 for older.

Total cost for the Kia Optima is 11530.85

Total cost for the Ford Explorer is 18483.38

Set 4:

run:

This program will help you choose a car based on cost over time.

Please enter, on one line, the make, model and year

of the first comparison car: Volkswagen Golf 2016

Please enter the make, model, and year of the second comparison car: Volvo S60: 20476.34 65

Please enter the price and the average miles per gallon of the Volkswagen Golf: -12344 34

This is an invalid price.

Default price of 965.0 will be used.

Please enter the price and the average miles per gallon of the Volvo S60:: 7362 -123

This is an invalid mpg.

Default mpg of 14.0 will be used.

Please enter a four-digit year which you consider as an old year for a car: 1999

What percentage of the original price of the new car that you want to assign for maintenance? .09

What percentage of the original price of the old car that you want to assign for maintenance? .07

How long do you want to keep the car in order to calculate the cost for the car? (enter the number of the years) 9

Do you want the program to calculate the cost per gallon as 2.75?

if you are fine with that enter yes, else enter no.

yes

The comparison of of car costs is the initial price

plus cost per year over 9 years with an average

of 15000 miles per year and a price of 2.75 per gallon of gas plus a

yearly maintenance cost of %9.0 of the original car cost

for cars newer than 1999 and %7.000000000000001 for older.

Total cost for the Volkswagen Golf is 12665.77

Total cost for the Volvo S60: is 38517.92

Set 5:

run:

This program will help you choose a car based on cost over time.

Please enter, on one line, the make, model and year

of the first comparison car: Cadillac Escalade 2984

Please enter the make, model, and year of the second comparison car: Buick Regal 0

This is an invalid year.

Default year of 1995.0 will be used.

Please enter the price and the average miles per gallon of the Cadillac Escalade: 76328 74

Please enter the price and the average miles per gallon of the Buick Regal: 653421 31

Please enter a four-digit year which you consider as an old year for a car: 0

invalid year.

Enter a valid year: 2014

What percentage of the original price of the new car that you want to assign for maintenance? .03

What percentage of the original price of the old car that you want to assign for maintenance? .2

How long do you want to keep the car in order to calculate the cost for the car? (enter the number of the years) 9

Do you want the program to calculate the cost per gallon as 2.75?

if you are fine with that enter yes, else enter no.

yes

The comparison of of car costs is the initial price

plus cost per year over 9 years with an average

of 15000 miles per year and a price of 2.75 per gallon of gas plus a

yearly maintenance cost of %3.0 of the original car cost

for cars newer than 2014 and %20.0 for older.

Total cost for the Cadillac Escalade is 101953.45

Total cost for the Buick Regal is 1841554.61

2.a)

run:

Values to test with: dateA (monthA/dayA/yearA) 1/5/1935, dateB 10/15/1963

Strings: monthAName is "January", monthBName is "October", and subAName is "Jan"

Relational operator tests

bRela1 is (dayA > dayB) \*\* false

bRela2 is (monthA < monthB) \*\* true

bRela3 is (yearA == yearB) \*\* false

Logical operator tests

bLogic1 is (yearB > yearA) && bRela2 \*\* true

bLogic2 is !(bRela3) \*\* true

bLogic3 is !(bRela1 || bLogic1) \*\* false

String equality tests

bString1 is (monthAName == monthBName) \*\* false

bString2 is (monthAName.equals(monthBName)) \*\* false

bString3 is (monthBName.equalsIgnoreCase("october")) \*\* true

Comparison tests for ordering

bString1 is (("May".compareTo("Jan")) < 0) \*\* false

bString2 is (("May".compareTo("Jan")) == 0) \*\* false

bString3 is (("May".compareTo("Jan")) > 0) \*\* true

2.b)

According to our book Big Java, It tests whether the two strings are stored in the same

memory location. we can have strings with identical contents stored in different

locations, so this test never makes sense in actual programming.

2.c)

yearA = = yearB

2.d)

True

3.a)

Java file

3.b)

run:

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 5.34 4

The total cost for this product is $21.36

The total grocery bill is $21.36

The quantity is 1

The most expensive item costs $5.34

The largest quantity of any item you bought is 4

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 12.10 1

The total cost for this product is $12.10

The total grocery bill is $33.46

The quantity is 2

The most expensive item costs $12.10

The largest quantity of any item you bought is 4

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 3.75 2

The total cost for this product is $7.50

The total grocery bill is $40.96

The quantity is 3

The most expensive item costs $12.10

The largest quantity of any item you bought is 4

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 8.12 6

The total cost for this product is $48.72

The total grocery bill is $89.68

The quantity is 4

The most expensive item costs $12.10

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 1.25 3

The total cost for this product is $3.75

The total grocery bill is $93.43

The quantity is 5

The most expensive item costs $12.10

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 17.13 1

The total cost for this product is $17.13

The total grocery bill is $110.56

The quantity is 6

The most expensive item costs $17.13

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 2.55 4

The total cost for this product is $10.20

The total grocery bill is $120.76

The quantity is 7

The most expensive item costs $17.13

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: -1

run:

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 31.99 1

The total cost for this product is $31.99

The total grocery bill is $31.99

The quantity is 1

The most expensive item costs $31.99

The largest quantity of any item you bought is 1

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 2.50 5

The total cost for this product is $12.50

The total grocery bill is $44.49

The quantity is 2

The most expensive item costs $31.99

The largest quantity of any item you bought is 5

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 1.90 6

The total cost for this product is $11.40

The total grocery bill is $55.89

The quantity is 3

The most expensive item costs $31.99

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 5.40 2

The total cost for this product is $10.80

The total grocery bill is $66.69

The quantity is 4

The most expensive item costs $31.99

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 1.45 4

The total cost for this product is $5.80

The total grocery bill is $72.49

The quantity is 5

The most expensive item costs $31.99

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 7.75 3

The total cost for this product is $23.25

The total grocery bill is $95.74

The quantity is 6

The most expensive item costs $31.99

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 3.05 2

The total cost for this product is $6.10

The total grocery bill is $101.84

The quantity is 7

The most expensive item costs $31.99

The largest quantity of any item you bought is 6

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 9.00 7

The total cost for this product is $63.00

The total grocery bill is $164.84

The quantity is 8

The most expensive item costs $31.99

The largest quantity of any item you bought is 7

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: 8.75 8

The total cost for this product is $70.00

The total grocery bill is $234.84

The quantity is 9

The most expensive item costs $31.99

The largest quantity of any item you bought is 8

Please enter the price for your grocery, then enter an integer for the quantity, enter -1 to quit: -1

3.c)

Using while loop to control structure because it will continue checking for invalid numbers and will stop when the user input -1 based on the condition by the programmer.

The variable*price* control the loop.

3.d)

if (price < 0 || quantity < 0)

while (price < 0 || quantity < 0)

3.e)

The other way is make the program read the data from file.