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STEP-2 DOCUMENTATION

PACKAGE util

CLASS FileIO

A public class which reads the data from an input file and build an automobile
model. It also serializes and deserializes an automobile object. This is the second
version and it contains custom exceptions to handle a few errors.

Method	Description
public FileIO()	No-arg constructor
public Automobile readData(String filename, Automobile a1)	This is a method to read the file and store it's content as an automotive object. This class throws AutoException.
public int findNum(String val)	This is a method to catch and throw custom exception. This class throws AutoException.
public void serialData(Automobile auto1)	This is a method to serialize the automobile object.
public Automobile deserialData(String filename)	This is a method to deserialize automobile object.

PACKAGE model

CLASS OptionSet

A class to contain the various option sets and it's size. It also has an inner class
which handles the options and it's prices. It also has various getters and setters for
option sets and options. This class implements Serializable. This class has an inner
class called Option.

variable	Description
private Option opt[]	An array of options for the option set of the automobile object.
Private String name	Name of the option set.

Method	Description
protected OptionSet()	No-arg constructor
protected OptionSet(int size)	Constructor with option set size as argument
protected OptionSet(String name1)	Constructor with option set name as argument
protected OptionSet(String name1, int size)	Constructor with option set name and option set size as arguments
protected String getName()	Method to get the option set name.
protected Option[] getOpt()	Method to get all the options of the option set.
protected Option findOptByName(String name1)	Method to find an option by name.
protected Option findOptByIndex(int index)	Method to find option by index.
protected Option OptNameContains(String val)	Method to get option if option name contains "val".
protected Option OptNameStartsWith(String pre)	Method to get option if option name starts with "pre".
protected int size()	Method to get option set size.
protected boolean isEmpty()	Method to find if option set is empty.
protected void setOptSize(int size)	Method to set option size.
protected void setOpt(Option[] opt)	Method to set options.
protected void setName(String name1)	Method to set option set name.
protected void setOptPriceByName(String name1, float price)	Method to set option price by option name.
protected void updateOptNameByName(String name1, String newName1)	Method to update option name by name.
protected void setOptNameByIndex(int index, String name1)	Method to set option name by option index.
protected void setOptPriceByIndex(int index, float price)	Method to set option price by option index.
protected void setOptNamePriceByIndex(int index, String name1, float price)	Method to set option name and option price by option index.

protected boolean setPriceOptNameContains(String val, float price)	Method to set option price if option name contains "val".
protected boolean setPriceOptNameStartsWith(String pre, float price)	Method to set option price if option name starts with "pre".
protected boolean deleteOptByName(String name1)	Method to delete option by option name.
protected boolean deleteOptByIndex(int index)	Method to delete option by option index.
protected boolean clearOptions()	Method to delete all options.
protected StringBuffer[] toStringOpt()	Method to convert options to string.
protected void printOption()	Method to print all options of an option set.

INNER CLASS Option

This is a class to set the various option's and it's price. This is an inner class of option set.

variable	Description
private String name	Name of the option
private float price	Price of the option

Method	Description
protected Option()	No-Arg constructor.
protected Option(String name1)	Constructor with option name as argument.
protected Option(float price)	Constructor with option price as argument.
protected Option(String name1, float price)	Constructor with option name and price as arguments.
protected String getName()	Method to get option name.
protected void setName(String name1)	Method to set option name.
protected float getPrice()	Method to get option price.
protected void setPrice(float price)	Method to set option price.

CLASS Automobile

A class that represents a model of automobile. It implements various method calls to call the protected methods from the option set class. It basically helps in building a

model of automobile with various option sets and options. This class implements serializable.

variable	Description
private String name	Name of the automobile.
private OptionSet opset[]	Array of Option set for the automobile.
private float price	Price of the automobile.

Method	Description
public Automobile()	No-arg constructor.
public Automobile(String name)	Constructor using automobile name.
public Automobile(float basePrice)	Constructor using automobile price.
public Automobile(int size)	Constructor using option set size.
public Automobile(String name, float basePrice)	Constructor using automobile name and price.
public Automobile(float basePrice, int size)	Constructor using automobile price and option set size.
public Automobile(String name, int size)	Constructor using automobile name and option set size.
public Automobile(String name, float basePrice, int size)	Constructor using automobile name, price and option set size.
public void buildOptionSetAndName(int size, String name)	Method to build option set and name usiong option set size and option set name.
public void buildOptionSet(int size)	Method to build option set using option set size.
public void setName(String name)	Method to set automobile name.
public void setPrice(float price)	Method to set automobile price.
public void setOpset(OptionSet[] opset)	Method to set option sets.
public void setOpSetNameByIndex(String name1, int index)	Method to set option set name by option set index.
public void setOpSetNameSizeByIndex(String name1, int index, int size)	Method to set option set name and size by option set index.
public void setOpSetSizeByIndex(int index, int size)	Method to set option set size by option set index.
public String getName()	Method to get automobile name.
public float getPrice()	Method to get automobile price.
public OptionSet[] getOpset()	Method to get option sets.
public OptionSet getOpsetByIndex(int index)	Method to get option set by index.
public String	Method to get option set name by index.

getOpsetNameByIndex(int index)	
public OptionSet findOpSetByName(String name1)	Method to get option set by name.
public OptionSet getOpSetNameContains(String val)	Method to get option set name if option set name contains "val".
public OptionSet getOpSetNameStartsWith(String pre)	Method to get option set name if option set name starts with "pre".
public int opSize()	Method to get option set size.
public boolean opIsEmpty()	Method to find if option set is empty.
public StringBuffer[] toStringOpSet()	Method to get a string of option sets.
public void printAll()	Method to print the auto model with all option sets and options and their attributes.
public void updateOpSetSizeByName(String name1, int size)	Method to update option set size by name.
public void updateOpSetNameByName(String name1, String newName)	Method to update option set name by name.
public void updateOptNameIfNameContains(String val, String newName)	Method to update option set name if option set name contains "val".
public void updateOptNameifNameStartsWith(String pre, String newName)	Method to update option set name if option set name starts with "pre".
public void updateOptSizeNameContains(String val, int size)	Method to update option set size if option set name contains "val".
public void updateOptSizeNameStartsWith(String pre, int size)	Method to update option set size if option set name starts with "pre".
public boolean deleteOpSetByName(String name1)	Method to delete option set by option set name.
public boolean deleteOpSetByIndex(int index)	Method to delete option set by option set index.
public void clearOpSet()	Method to clear all the option sets and their options.
public void setOptSizeOfOpSet(OptionSet opset1, int size)	Method to set size of options of an option set.
public void setOptOfOpSet(OptionSet opset1, Option[] opt)	Method to set option of an option set.
public void setOptOfOpSetNameByIndex(OptionSe	Method to set option name of option set by using option index.

t opset1, int index, String name1)	
public void setOptPriceByIndex(OptionSet opset1, int index, float price)	Method to set option price of option set by using option index.
public void setOptOfOpSetNamePriceByIndex(OptionSet opset1, int index, String name1, float price)	Method to set option name and price of option set by using option index.
public void setPriceOptOfOpSetNameContains(OptionSet opset1, String val, float price)	Method to set option price if option name contains "val".
public void setPriceOptOfOpsetNameStartsWith(OptionSet opset1, String pre, float price)	Method to set option price if option name starts with "pre".
public Option[] getOptOfOpSet(OptionSet opset1)	Method to get all options of an option set.
public Option findOptOfOpSetByName(OptionSet opset1, String name1)	Method to get option of option set by option name.
public Option findOptOfOpsetByIndex(OptionSet opset1, int index)	Method to get option of option set by option index.
public Option getOptOfOpSetNameContains(OptionSet opset1, String val)	Method to get option of option set if option name contains "val".
public Option getOptOfOpSetNameStartsWith(OptionSet opset1, String pre)	Method to get option of option set if option name starts with "pre".
public int sizeOfOptOfOpset(OptionSet opset1)	Method to get size of options of option set.
public boolean isOptOfOpSetEmpty(OptionSet opset1)	Method to find if option of option set is empty.
public StringBuffer[] toStringOptOfOpSet(OptionSet opset1)	Method to get a string of all options of an option set.
public void PrintAllOptOfOpSet(OptionSet opset1)	Method to print all options of an option set.
public void updateOptOfOpSetPriceByName(OptionSet opset1, String name1, float price)	Method to update option price of option set by option name.
public void updateOptOfOpSetNameByName(OptionSet opset1, String name1, String newName)	Method to update option name of option set by option name.
public void updateOptOfOpSetNameByIndex(Optio	Method to update option name of option set by option index.

nSet opset1, int index, String name1)	
public void updatePriceByIndex(OptionSet opset1, int index, float price)	Method to update option price of option set by option index.
public void updateOptOfOpSetNamePriceByIndex(OptionSet opset1, int index, String name1, float price)	Method to update option name and option price of option set by option index.
public boolean deleteOptOfOpSetByName(OptionSet opset1, String name1)	Method to delete option of an option set by option name.
public boolean deleteOptOfOpSetByIndex(OptionSet opset1, int index)	Method to delete option of an option set by option index.
public boolean clearOptionsOfOpSet(OptionSet opset1)	Method to delete all options of an option set.

PACKAGE exception

CLASS AutoExcepEnum

An enumeration containing various possible errors and error numbers.

Enumeration	Description
NumOfOptionSetFormatNotValid(1)	Enum for number of option set format not valid error.
ModelPriceFormatNotValid(2)	Enum for model price format not valid error.
OptionSizeNotFound(3)	Enum for option size not found error.
OptionPriceNotFound(4)	Enum for option price not found error.
OptionPriceFormatNotValid(5)	Enum for option price format not valid error.

variable	Description
private int value	value of the exception enum.

Method	Description
AutoExcepEnum(int value)	No-arg constructor.
public String toString()	Method to get a string of the error message and error number.
protected int getValue()	Method to get the value of the enum.

CLASS AutoException

A class extending exception class to implement custom exceptions. This version fixes the format of option set size and print error messages for other errors like missing option price, format of option price, format of model price and missing option size. It also logs the various error messages and error number in a file with a timestamp.

variable	Description
private int errorNo	Error number
private String errorMsg	Error message

Method	Description
public AutoException()	No-arg constructor.
public AutoException(AutoExcepEnum enum1)	Constructor with AutoExcepEnum as argument.
public int getErrorNo()	Method to get the error number.
public void setErrorNo(AutoExcepEnum enum1)	Method to set the error number using the AutoExcepEnum.
public void setErrorMsg(AutoExcepEnum enum1)	Method to set the error message using AutoExcepEnum.
public String getErrorMsg()	Method to get the error message.
public void print(AutoExcepEnum enum1)	Method to print the error message.
public String fix(int errorNum)	Method to fix the error by calling helper classes.
public void log()	Method to log the error messages, error number and timestamps into a file when an error occurs.

CLASS Fix1to100

A helper class to delegate fixes for each exception. This is to handle exception in the util package. The current version gets an input from the user to fix the number of option sets format exception.

Method	Description
Fix1to100()	No-arg constructor.
public String fix1()	Method that fixes the option set size format error by getting input from user using console.
public String fix2()	Method to fix model price format not valid error.
public String fix3()	Method to fix option size not found

	error.
public String fix4()	Method to fix option price not found error.
public String fix5()	Method to fix option price format not valid error.

PACKAGE adapter

CLASS BuildAuto

An empty class which handles the methods using interfaces (FixAuto,UpdateAuto,CreateAuto) and abstract class. It hides all the method implementation by extending an abstract class which in-turn implements all the interface methods.

INTERFACE CreateAuto

An interface for building and printing of automobile

Method	Description
public void buildAuto(String fileName)	Method to build an auto model by calling methods from automobile class.
public void printAuto(String modelName)	Method to print an auto model by calling methods from automobile class.

INTERFACE UpdateAuto

An interface to update option sets and options.

Method	Description
public void updateOptionSetName(String modelName, String optionSetName,String newName)	Method to update option set name using model name and option set name by calling methods from automobile class.
public void updateOptionPrice(String modelName,String optionName,String option,float newPrice)	Method to update option price using model name, option set name and option name by calling methods from automobile class.

INTERFACE FixAuto

An interface for fixing errors using custom Exception.

Method	Description
public void fixErrors(int errorNum)	Method to fix exceptions by calling methods from AutoException class.

CLASS ProxyAutomobile

An abstract class which implements the methods from interfaces - CreateAuto, FixAuto and UpdateAuto. It acts as a proxy for BuildAuto class. It calls the various methods from automobile class to implement it's own methods. It has methods to build an auto, print the contents of auto model, fix errors during runtime and update various aspects of the auto model. It uses various method from automobile class and AutoException class to accomplish this.

variable	Description
private static Automobile myObj	Variable to store automobile object
FileIO file	Variable to store file object.

Method	Description
public void buildAuto(String fileName)	Method to build an auto model by calling methods from automobile class.
public void printAuto(String modelName)	Method to print an auto model by calling methods from automobile class.
public void updateOptionSetName(String modelName, String optionSetName,String newName)	Method to update option set name using model name and option set name by calling methods from automobile class.
public void updateOptionPrice(String modelName,String optionName,String option,float newPrice)	Method to update option price using model name, option set name and option name by calling methods from automobile class.
public void fixErrors(int errorNum)	Method to fix exceptions by calling methods from AutoException class.

PACKAGE driver

CLASS Step2_driver

A driver class to test the functioning of interfaces and abstract class.This class builds and prints an automobile. It also updates the option set name and price.