

CIE 9618

Name _____

- Carry out every instruction in each task.
- Save your work using the file names given in the task as and when instructed.
- You must save your work in the evidence document as stated in the tasks. If your work is not saved in the evidence document, you will not receive marks for that task.
- You must use a high-level programming language from this list: Java (console mode) Python (console mode) Visual Basic (console mode)

Using a text editor such as Microsoft Word, save a new file called ***myname_evidence*** eg garysmith_evidence.doc

1. A Tool is an object that has the following attributes:

- `ModelNumber` eg "dn-102"
- `Cost` eg 12.99
- `Used` eg FALSE

(a) Write code for the Tool class. Do not write the constructor or any other methods. Declare the attributes as private.

If you are using Python add a comment for each property to give its identifier and datatype.

Copy and paste the program code into the evidence document with **Question 1a** clearly typed before the code is pasted.

[2]

(b) The constructor method:

- takes the `ModelNumber` and `Cost` as parameters
- sets `Used` flag to FALSE

Edit your program from Part 1a and write the constructor method of the `Tool` class. Do not write any other methods.

Copy and paste the program code into the evidence document with **Question 1b** clearly typed before the code is pasted.

[4]

(c) Write accessor methods for each of the `Tool` class's properties.

Copy and paste the program code into the evidence document with **Question 1c** clearly typed before the code is pasted.

[2]

- (d) A `ToolBox` stores an array of `Tool` objects, `toolBoxSet`, as an attribute. The attribute is private and assigned a `NULL` pointer when a `ToolBox` is constructed. Write code for the `ToolBox` class, constructor and an accessor method for the attribute `toolBoxSet`.

Copy and paste the program code into the evidence document with **Question 1d** clearly typed before the code is pasted.

- (e) The `ToolBox` class method `getToolSet`, takes a filename, `fName`, as a parameter. It runs the following code to attempt to open the file:

```
try:
    f = open(fName "r")
    #your code here
except IOError:
    #your code here
```

If the file exists and can open, it:

1. Reads a line from the file
2. Uses the information to create a `Tool` object
3. Appends the object into an array, `toolset`
4. Repeats the above stops for each line in the file
5. Returns the array when the process is complete
6. If the file is not found, the function returns a `NULL` pointer.

Complete the method `getToolSet` using the above code as starter code.

Copy and paste the program code into the evidence document with **Question 1d** clearly typed before the code is pasted.

[6]

- (e) Construct a `ToolBox` and call the `getToolSet` method using the filename provided with this task. Use a loop to display the `ModelNumber` of every `Tool` in the `ToolBox`.

Copy and paste the program code into the evidence document with **Question 1e** clearly typed before the code is pasted.

- (f) A `Hammer` is a `Tool`. Along with a `ModelNumber`, a `Price` and a `Used` flag, it also has a `Weight`, eg 15, which is passed to the constructor method.

Write the entire `Hammer` class.

Copy and paste the program code into the evidence document with **Question 1f** clearly typed before the code is pasted.

[4]

END OF QUESTION