B00355490 & B00346084

Documentation for The Paisley Precision Engineering Company assignment

Documentation

COMP07027 -COURSEWORK 2018-19

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# Requirements

Requirements that have been requested by the client (The Paisley Precision Engineering Company (PPEC):

### Part1

|  |  |
| --- | --- |
| **Requirements** | **Status** |
| Batch generation including (component type, model, batch number, components in batch) | ✓ |
| Individual serial number and date of each component in batch recorded | ✓ |
| Two classes: Batch & Component | ✓ |
| Main menu including (Batch creation and quit) | ✓ |
| Batch format (YYYYMMDD9999) | ✓ |
| Component format (YYYYMMDD9999-9999) | ✓ |
| BatchIndex.json (read and write operations) | ✓ |

### Part 2

|  |  |
| --- | --- |
| **Requirements** | **Status** |
| Instance of Batch stored in (/Data/YYYYMMDD.pickle) | ✓ |
| Instance of Component stored in (/Data/YYYYMMDD-9999.pickle) | ✓ |
| Read & Write files to disk | ✓ |
| Retrieve and display information in files | ✓ |
| View details of Component (menu option) | ✓ |
| View details of Batch (menu option) | ✓ |
| View all Batches (menu option) | ✓ |
| Handle Invalid inputs | ✓ |

### Part3

|  |  |
| --- | --- |
| **Requirements** | **Status** |
| Allocate batches status (Manufactured-Unfinished) to (Dubai or Paisley) | ✓ |
| Allocate batches (menu option) | ✓ |
| Track Allocation of components & batches | ✓ |
| During batch creation (status is “Factory Floor – Warehouse Not Allocated) | ✓ |
| Only allow allocation of unallocated batches | ✓ |
| View details of Batch (menu option) contains allocation | ✓ |
| View all Batches (menu option) contains allocation | ✓ |

### Part4

|  |  |
| --- | --- |
| **Requirements** | **Status** |
| Menu option search by product type | ✓ |
| Search function to show (filtered in-stock and not in-stock) | ✓ |
| Search function shows all details | ✓ |
| Menu option to allocate a finish to components (that are not finished) | ✓ |
| Paint code of 4 characters | ✓ |
| Handle invalid paint codes | ✓ |

Overall all we are satisfied we have met all criteria set by the client, this is supported in our testing and confirmation show above. Whilst we also all tests on the final product to the final product to ensure that all criteria set, was completed.

# Testing

Note: All steps have been tested individually with screen dumps to support and prove our testing results, these can be located in each step in the testing folder e.g.(step1/Testing). All steps have been tested individually during development to ensure the final product is fully functional, including the final product being tested in the final stage. All test data is also included to support our testing; which can be found in the data folders e.g. (Step1/Data). All tests were carried out with the correct [dependencies](#_Dependencies) installed.

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Name:** | **CW 17/18** | **Test Designed by:** | **B00355490** |
| **Module Name:** | **Introduction to Programming** | **Test Designed date:** | **30/04/2019** |
| **Banner ID #1** | **B00355490** | **Test Executed by:** | **B00355490** |
| **Banner ID # 2** |  | **Test Execution date:** | **06/04/2019** |



# Dependencies

Please note that the final product produced contains some critical decencies, running the product without these may result in malfunctions, unexpected crashes, corrupt and unexpected results.

All development was created in PyCharm.

Following modules will be installed before product deployment:

Dependences:

* Python 3.7.2
* Shutil - built-in
  + Used to create backup folder
* EasyGui -external
  + PyCharm Terminal: pip3 install easygui
  + Used to supply client was a GUI
* Datetime - built-in
* Json- built-in
* OS - built-in
* Pickle - built-in
* Sys -built-in
* Matplot.lib.pyplot – external
  + pip3 install matplotlib
  + Created a graph displaying batches and components
* Prettytable -external
  + pip install PTable
  + Used to display tabular information

All modules are published on PyPI.

# Additional Components

During the development of the program we have implemented a graphical user interface using the EasyGUI module. In addition, we have also used the Pretty Table module for a more structured and professional output display. During our testing of our final product testing with extreme and unrealistic conditions, during the testing we decided to implement a backup of all files generated in case of loss or corrupt data files. As PPEC create more batches we noticed that tabular data does not display the easiest way to overview how many batches and component have been made, through the use of matplot.lib.pyplot we have been able to create a brief overview for any personal to view and read in seconds, showing how many components are made per batch on average and graphical data showing how many batches and components have been generated by the company.

The final production of software will use command line outputs and a graphical user interface, we have designed this in such a way, that the user will be able to view their data whilst using the search and view functions available to them, creating a simpler and more effortless experience.

# Referenced Code

During the production of the code we opted against using an external module to create a loading bar as the final product already requires many dependencies. In our program we have opted to use Vladimir Ingatev’s loading bar function found on GitHub, with permission to do so:

“The MIT License (MIT)

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[GitHub code](https://gist.github.com/vladignatyev/06860ec2040cb497f0f3)