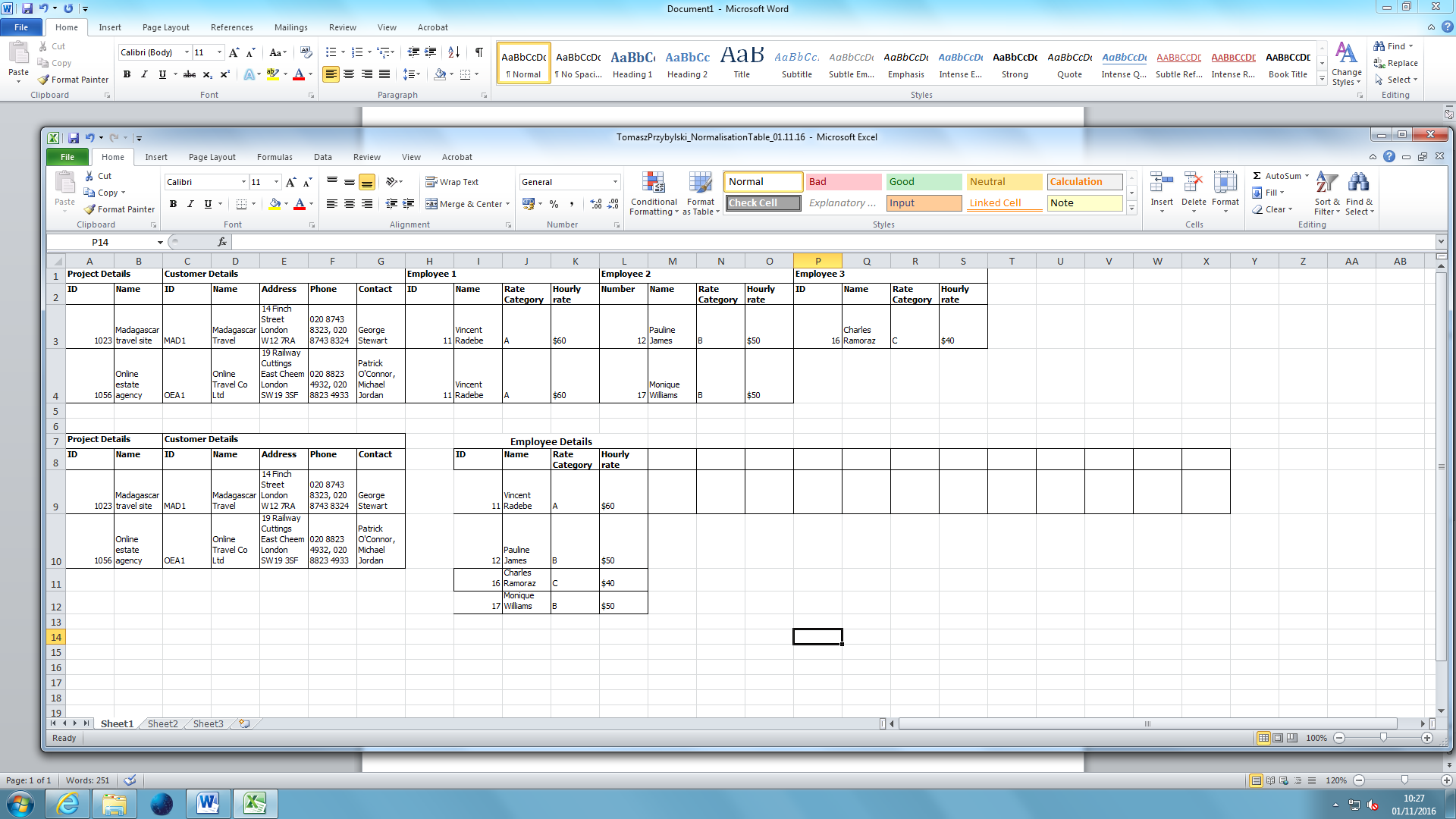
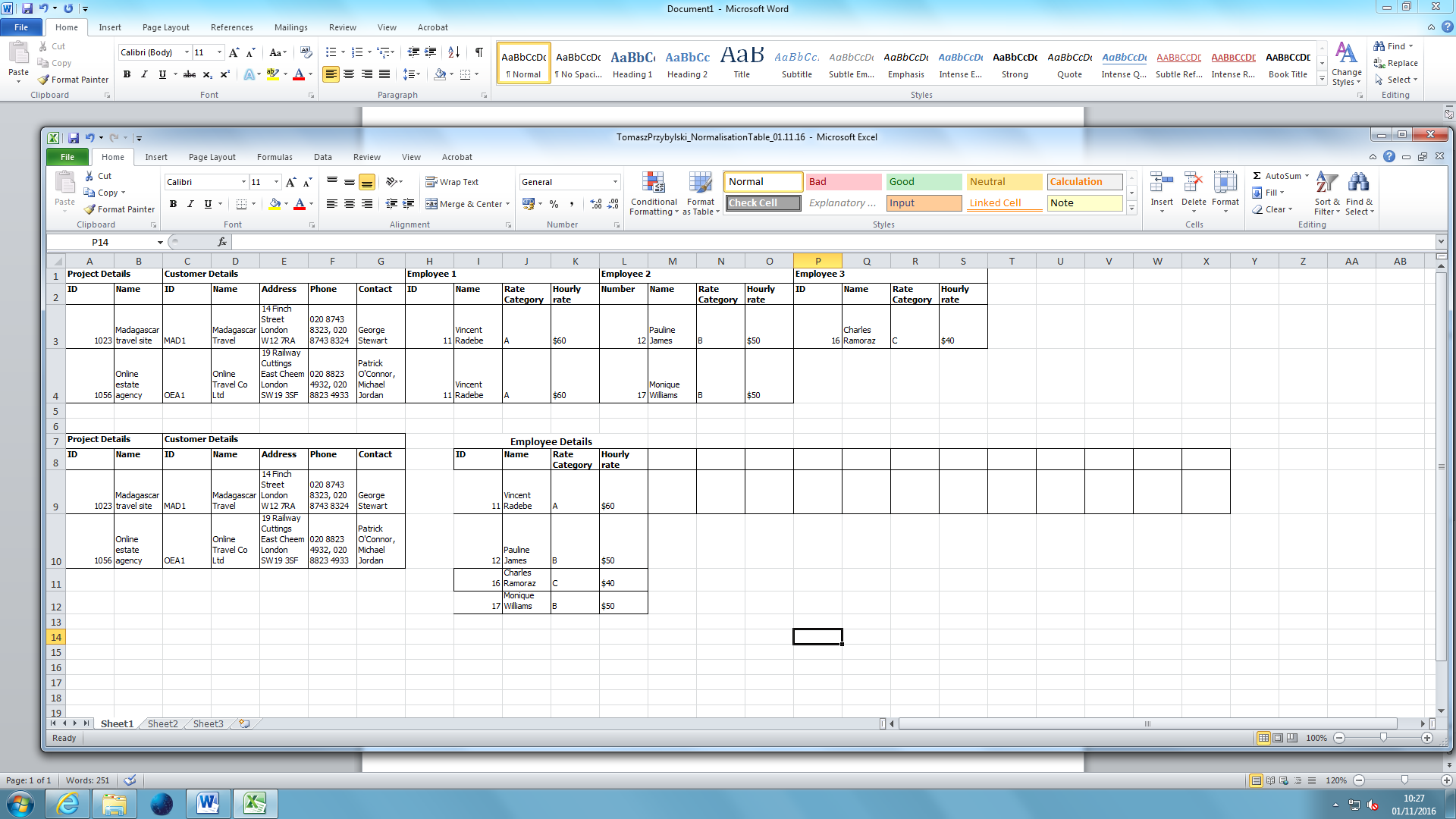
Report on Database Normalisation & Normal Forms

Normalisation is a tool by which databases and data sets are reduced in size and are made easier to manipulate by removing duplicate or repeating sets of data and putting data of the same class together. Here is an example of an un-normalised database:



Here, data such as the Employee ID is repeating. While this database only contains two projects and therefore won’t take up much space, an un-normalised database containing hundreds or thousands of projects will take up an incredible amount of space compared to a database in 3rd Normal Form.

The answer to this is to normalise the database, primarily by putting it into 1st Normal Form, as this should reduce the size of the database and make it much easier to manipulate and handle. 1st Normal Form is achieved by atomising the data and by splitting up and isolating repeating and non-repeating objects. This is what the database would look like in 1st Normal Form:



In this form, the data does not repeat anymore but there are still unnecessary bits of information so the answer is to normalise the database into 2nd and 3rd Normal Form. 2nd Normal Form would create a compound key that could be used to access two or more different data tables. For example, a compound key of the project ID and Employee ID could be made, however in this case you can use the Project ID to find out the Customer ID and the Employee IDs so a compound key is not necessary.

3rd Normal Form means that there is no data depending on a non-primary key. All data is corresponding to a unique identified such as the Customer ID or Employee ID.