**Day one:Choosing an organisation and products :**

For this assignment i decided to base the products i would be selling from the range of desserts around the world with a quick search i found that cookies and cakes were very popular and quite frequently sold. Also i realised that both products have similar traits that would make coding between both fairly interesting with the use of a superclass and subclasses. Personally i love baking and have a good knowledge about desserts which i thought would help make this program unique to me. I decided to call the organisation *“Desserts Galore”.*

**Day two :The basic design:**

Reading the specification given to us i decided to draw up a basic plan of what needed to be done in this program. The plan went like this:

* Create a superclass called “dessert”
* Create two subclasses called “cakes” & “cookies”
* Using the superclass ensuring inheritance happens between both products
* Store both products in an array
* Make sure items created from classes are stored in a data file (done in the driver)
* Ensure that these created files are copied over when the program starts and ends(done in the driver)
* Create a Driver class Called “MasterDessert”
* Create a menu for the user with the following options
  + Customer menu
  + Staff menu
  + Exit System
* Create a Customer menu with the following options
  + “Browse our cakes”
  + “Browse our cookies”
  + “Create your own gorgeous cake or cookie **(This is the extra menu option)**”
  + “Purchase a cake”(while updating stock levels)
  + “Purchase cookies”(while updating stock levels)
  + “Exit the Customer menu”
* Create a Staff menu with the following options
  + “**For the purpose of making this system as realistic as possible i decided to add a special feature of the requirement of a pin number before the User can access the Staff menu , this pin will be created at the start of the program by the user and must be remembered like a real-life pin”.**
  + “Add a new cake to the stock”
  + “Add a new cookie to the stock”
  + “Order additional amounts of existing products“(while updating stock levels)
  + “Change pin number”
  + “Exit Staff menu”

**Day three: doing the super and subclasses**

Completing both the super class and the subclasses was fairly easy seeing as most of the code is inherited from the super class making it quicker to complete. The only issue that i had with this was the fact that originally i had a single display method when i need two seperate ones for each subclass

**Day four:Doing the driver class**

The driver class was less complicated than i had thought it would be. A lot of the driver was code that i had used before in other programs such as searching for objects and using methods . The main altercation i had with the driver class was the main file handling which i had solved because i never named the binary file the same thing. Another issue was the menu that would display when it should not have been called. This was my fault as i had made the mistake that instead of forcing a menu to display it should flow naturally

**Description of main programming constructs in relation to the CRC card**

**Menus**

The menus in this program were all very similar they would have a variable called option that would be used in order for the user to select a menu option. There are three menus the general menu the customer menu and the staff menu each menu had its own set of options. The only menu with a slight difference is the staff menu that requires a pin to be opened

**Buying Products**

Buying products in this system was a simple task to do. Once the user was asked for the name of the product they wanted the system would then carry out a search in order find this item. Once the item was found the user id then asked how many they would like to buy after this number is input the amount is removed from the stock levels of the product. There's also a function in these buying methods that prevent any stock from being bought below 0. I summed this method into one for both the cake and the cookie as it is practically the same for both

**View items**

Like the buying methods the view method was very simple and almost identical for both cookie and cake class. The system would search through the array and display in the instance of the whatever object is being searched for cake or cookie

**Add Stock**

To add stock i had taken the methods from the display and the buying products and switched a few things around to make it work. I took the search function form the display functions and asked the user which they wanted to add cake or cookie then when they made this choice they would then be asked which product they want to add to the array once they input the name the product would then be searched for in the array. Once the object was found the user is asked how many they want to add to the stock. If there item is not found they are returned to the menu

**Creating a new product**

To create a new product the user is asked for all the relevant information that the product requires e.g flavour for cakes and sides for cookies.Once all this information is obtained the system will create a new object and store the information inside of it. The newly created object would then be added to the array.This is the same for both cake and cookie.

**Creating buying and viewing objects for customers**

The methods for creating buying and viewing objects for the customer is almost identical to the other methods in this program the only difference is that it is aimed more towards the the customers and that the objects are added to a different array. This method takes and uses the main methods from the display buying and display methods of this program so there is no need to go into too much detail about it.

**Creating and resetting pin**

For the staff menu i introduced the extra responsibility of using a pin to access this menu in terms of real life application. When the program starts the user is asked to create a pin and answer a security question both of these are then stored by the program and used later when the staff menu is called. If the user wants to rest the pin by any chance they get the chance to do this . they are asked if they remember the pin if they do they can just enter it and rest the pin if not they use the security question and if right can reset the pin however if both are wrong they are sent back to the menu and must restart the program again to access the staff menu