Validation testing

Within this section of testing we will be validating whether the program has been created so that it meets the requirements set by the user.

For referencing we will be refereeing back to the SRS document that was created earlier in the software’s development, this will obtain the requirements that were set by the client and generate suitable test cases from these so that the program can be thoroughly tested.

The test cases that were created from this process where:

* Testing the programs ability to include all available employees. – When obtaining requirements, the client stated that they needed the program to include all available staff into each week’s rota so that shifts would be fairly distributed without employees being left out.
* Testing that employees are not given more hours than they stated that they are available for. – One of the key points the client raised was that they needed for the program to consider employee’s ability when creating a new weekly rota, this testy will validate whether the program does not allocate employees to many hours.
* Testing the ability to quickly view basic employee information. – Due to admin reasons the client requested that the program include the ability to quickly view basic employee information easily within the program its self this test will valid whether this requirement has been met.

Due to a change in the design of the program the requirement of being able to edit rotas within the system was altered due to the lightweight and quick use nature of the system this can easily be achieved by creating a new rota using the updated data, this change will be elaborated upon within the final report of the development process.

To make sure these tests were conducted in a fair and efficient way we decided the importance on what test data will be used, we decided that the data will be selected to be used on a test by test basis as to allow for the data to stay relatively alike but also be unique enough to allow for the detection of any faults that may be triggered by different values being used. Details on the values used will be described and explained within the description segment of each test conducted.

The test as shown below will be formatted into an easy to reference test table consisting of 4 main sections:

* Test – This section will include a detailed name of the test case being used and a testing ID for being used for quick referencing.
* Description – This will include an in-depth description of the test being conducted detailing and conditions and data that will be used.
* Expected result – Used for as the reference point in which we will be able to conclude whether the test is successful in this section will include a description of what the expected result of the test would be if the program fulfils the test case.
* Actual result – This section will include details on the result obtained from conducting the test and any points raised from these results.

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| Test | Description | Expected Result | Actual Result |
| *V.1*  Testing that system will create a rota that includes all employees available on a given week. | This test will be conducted by entering 8 different employees into the system each =of these will include a unique name and ID but all will be given the same value of 20 maximum hours as to keep the conditions consistent and to see if the program includes all employees in the week’s rota. | The program can achieve the desired result of distributing all 8 of the test employees shifts within the week’s rota in an even amount. | When conducted this test case returned a very positive result, the program was able to allocate an even amount of shifts to all 8 employees given showing that the program is able to meet this requirement. |
| *V.2*  Testing that the system will allocate shifts proportionally to the number of available hours given by the user. | Although the program assigns shifts to all employees another main requirement set by the client was that the program would need to take into account the amount of hours that each employee could work in the given week and assign the shifts accordingly in this test 6 employees will be given to the program each with its own unique names and IDs and differing available hours these being; TL=20, JL=15, WY=10, GD=10, DS=8, VF= 7. This will allow to show if the program is able to assign the correct amount of shifts over a ranging set of inputs. | If met the program will distribute shifts to employee’s proportionally to the maximum number of available hours provided by the test employees for example DS should be assigned no more than 8 hours and JL no more than 15. | The program has allocated shifts to all given employees and has also matched these to their maximum available hours. E.g. DS has been given 7 shifts which is within the given amount, this shows that the program can allocate shifts proportionally to the number of hours available of an employee. |
| *.3*  Testing ability to view employee details. | The Client requested that it will be easy to view details about employees within the rota viewing data such as their ID and maximum hours available for the week.  To tackle this, we have implemented and easy to use method of viewing each individual employee currently in the system. To test this system, I have given the program the same test data as test *V.2* and will be viewing whether this matches in the view employees segment of the program, this will give an accurate demonstration of the program in use. | The View employee section of the program should allow for the user to easily cycle between employees stored in the program for the week and view their basic information. | The screenshots above show the results from this test case demonstrate that the system can complete the required task of allowing the user to quickly access basic employee information. |

**Test Summary**

The validation testing that was performed on the program has informed us that the program can fulfil the requirements that were requested the client in an efficient manner allowing for us to conclude that at this stage the program is in a state of being complete, allowing for further forms of testing to also be conducted.