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Abstract

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# Title

The designed HRIS system is built for providing easy access for the students and staff members for using the ICT database. The system performs different operations like displaying the different Units, Staff, Classes, and Consultations of the ICT and resolving student queries at a faster rate. It also shows the different searching ways for viewing the different staffs and consultations for a class and staff member by giving unit and class values.

The team formed for designing the HRIS system and developing the test cases consist of the following members

1)

2)

3)

## Test Plan Description:

* 1. Document purpose

The proposed set of test cases will help in determining whether the system works correctly and satisfies all the requirements. It helps in finding the problems in the given requirement and efficiently developing the system. It analyses the given problem for completeness and reviews the overall design of the system.

* 1. Types of Testing

Some of the testing that are being used are as follows:

* Unit Testing

In this type of testing test cases are written to check the behavior of different modules. In the HRIS system each unit namely the Staff, Class, Unit, and Consultation are the different unit and each of them is tested separately to ensure each unit is performing its function. If any error is detected, then it is easy to resolve as it involves a single module. (Ramesh, 2007)

* Integration Testing

In this type of testing the test cases are derived from the architecture and design specifications. Each module is incrementally integrated to check the module integration and interaction. In the HRIS system, the search and view function is combined to find all the classes for a staff member. Two modules are combined and tested in the form of a group. If any error is detected, it will not be easy to find the unit in which the error occurred. (Patton, n.d.)

### System Testing

In this type of testing the entire system is tested to check whether the developed system is working according to the specific requirements. It focuses on the entire system’s functionality and validates the whole system’s functioning. In the HRIS system, the whole system is checked to find whether it is functioning as per the requirements. If any error occurs in this testing, then it will be very difficult to resolve as it involves the entire system and debugging becomes hard. (Basu, 2015)

## Benefits

Testing finds the defects in the system and helps us in ensuring whether the system is developed as per the requirements. It increases the product quality and improves the system’s functionality. It ensures no part of the program is left out without testing and improves the security of the system. It provides better system functioning and gives a flawless experience to the user. The system becomes easy for managing and reduces the risk involved.

# Operation test plan:

## Operation Referencing

1. **Test cases for showing all the units:** The data flow diagram and the sequence diagram in the design document section are referred to deriving the required test cases for showing all the units.
2. **Test cases for showing all the staff:** The sequence diagram and the use case diagram in the design document section are referred for deriving the required test cases for showing all the staff.
3. **Test cases for showing all the classes:** The sequence diagram and the use case diagram in the design document section are referred for deriving the required test cases for showing all the classes.
4. **Test cases for showing all the consultations:** The sequence diagram and the use case diagram in the design document section are referred for deriving the required test cases for showing all the consultations.
5. **Test cases for searching and viewing all the classes for a staff member:** The sequence diagram and the use case diagram in the design document section are referred for deriving the required test cases for searching and viewing all the classes for a staff member. First, the staff member is searched and then all the classes for the given staff members are displayed.
6. **Test cases for searching and viewing all the consultations for a staff member:** The sequence diagram and the use case diagram in the design document section are referred for deriving the required test cases for searching and viewing all the consultations for a staff member. First, the staff member is searched and then all the consultations for the given staff member are displayed.
7. **Test cases for searching and viewing all the Consultations for a Class:** The sequence diagram and the data flow diagram in the design document section is referred for deriving the required test cases for searching and viewing all the consultations for a Class. First, the Class is searched and then all the consultations for the given Class are displayed.
8. **Test cases for searching and viewing all the classes for a Unit:** The sequence diagram and the data flow diagram in the design document section are referred for deriving the required test cases for searching and viewing all the classes for a Unit. First the Unit is searched and then all the classes for the given Unit are displayed.

## Test Case Operation:

1. **Test cases for showing all the units:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Step** | **Test steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Access HRIS System | <Valid User> | Displays the unit code, unit name, and coordinator for all the existing units |  |  | All the available units are displayed |
| Click on the “Unit Search” Button | <Units exist in the database> |
| 2 | Access HRIS System | <Valid User> | A message “No units exist” is shown |  |  | An error message is displayed |
| Click on the “Unit Search” Button | <Units do not exist in the database> |

1. **Test cases for showing all the staff:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Step** | **Test steps** | **Test Data** | **Expected Result** | **Actual Result** | **Status (Pass/Fail)** | **Notes** |
| 1 | Access HRIS System | <Valid User> | Displays Staff ID, Given Name, Family Name, Title, Campus, Phone, Room, Email, and photo for all the existing staff |  |  | All the available Staff are displayed |
| Click on the “Staff Search” Button | <Staffs exist in the database> |
| 2 | Access HRIS System | <Valid User> | A message “No staff exist” is shown |  |  | An error message is displayed |
| Click on the “Staff Search” Button | <Staff does not exist in database> |

1. **Test cases for showing all the classes:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Test steps | Test Data | Expected Result | Actual Result | Status (Pass/Fail) | Notes |
| 1 | Access HRIS System | <Valid User> | Displays Unit code, Campus, Day, Start Time, End Time, Type, Room, and Staff for all the existing classes |  |  | All the available Classes are displayed |
| Click on the “Class Search” Button | <Class exists in the database> |
| 2 | Access HRIS System | <Valid User> | A message “No Class exists” is shown |  |  | An error message is displayed |
| Click on the “Class Search” Button | <Class does not exist in database> |

1. **Test cases for showing all the consultations:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Test steps | Test Data | Expected Result | Actual Result | Status (Pass/Fail) | Notes |
| 1 | Access HRIS System | <Valid User> | Displays Staff ID, Day, Start Time, and End Time for all the existing consultations |  |  | All the available consultations are displayed |
| Click on the “Consultation Search” Button | < Consultations exist in the database> |
| 2 | Access HRIS System | <Valid User> | A message “No Consultations exist” is shown |  |  | The error message is displayed |
| Click on the “Consultation Search” Button | < Consultations do not exist in the database> |

1. **Test cases for searching and viewing all the classes for a staff member:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Test steps | Test Data | Expected Result | Actual Result | Status (Pass/Fail) | Notes |
| 1 | Access HRIS System | <Valid User> | A message “The Staff detail is Invalid” is shown |  |  | The error message is displayed |
| Click on Staff Search Button | <Invalid Staff ID or Staff Name> |
| 2 | Access HRIS System | <Valid User> | A message “No Class exists” is shown |  |  | An error message is displayed |
| Click on Staff Search Button | <Provide valid Staff ID or Staff Name> |
| Click on View Classes Button | < Class does not exist in database > |
| 3 | Access HRIS System | <Valid User> | Displays all the classes for the given staff value |  |  | All the classes handled by the given Staff ID/Staff Name are displayed |
| Click on Staff Search Button | <Provide valid Staff ID or Staff Name> |
| Click on View Classes Button | < Class exists in database > |

1. **Test cases for searching and viewing all the consultations for a staff member:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Test steps | Test Data | Expected Result | Actual Result | Status (Pass/Fail) | Notes |
| 1 | Access HRIS System | <Valid User> | A message “The Staff detail is Invalid” is shown |  |  | An error message is displayed |
| Click on Staff Search Button | <Invalid Staff ID or Staff Name> |
| 2 | Access HRIS System | <Valid User> | A message “No Staff exists” is shown |  |  | An error message is displayed |
| Click on Staff Search Button | <Provide valid Staff ID or Staff Name> |
| Click on the View staff Button | < Staff does not exist in database > |
| 3 | Access HRIS System | <Valid User> | Displays all the Consultations for the given staff value |  |  | All the Consultations for the given Staff ID/Staff Name are displayed |
| Click on Staff Search Button | <Provide valid Staff ID or Staff Name> |
| Click on View Consultations Button | < Class exists in database > |

1. **Test cases for searching and viewing all the Consultations for a Class:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Test steps | Test Data | Expected Result | Actual Result | Status (Pass/Fail) | Notes |
| 1 | Access HRIS System | <Valid User> | A message “The Class detail is Invalid” is shown |  |  | An error message is displayed |
| Click on the Class Search Button | <Invalid Class value> |
| 2 | Access HRIS System | <Valid User> | A message “No Consultations exist” is shown |  |  | An error message is displayed |
| Click on the Class Search Button | <Provide valid Class value> |
| Click on View Consultations Button | < Consultations do not exist in the database > |
| 3 | Access HRIS System | <Valid User> | Displays all the Consultations for the given Class value |  |  | All the Consultations for the given class are displayed |
| Click on the Class Search Button | <Provide valid Class value> |
| Click on View Consultations Button | < Consultations exist in database > |

1. **Test cases for searching and viewing all the classes for a Unit:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Step | Test steps | Test Data | Expected Result | Actual Result | Status (Pass/Fail) | Notes |
| 1 | Access HRIS System | <Valid User> | A message “The Unit detail is Invalid” is shown |  |  | An error message is displayed |
| Click on the Unit Search Button | <Invalid Unit value> |
| 2 | Access HRIS System | <Valid User> | A message “No Class exists” is shown |  |  | An error message is displayed |
| Click on the Unit Search Button | <Provide valid Unit value> |
| Click on View Classes Button | < Class does not exist in database > |
| 3 | Access HRIS System | <Valid User> | Displays all the Classes for the given Unit value |  |  | All the classes for the given unit are displayed |
| Click on the “Unit Search” Button | <Provide valid Unit value> |
| Click on View Classes Button | < Class exists in the database > |

# Test Plan Validation:

## Discussion- plan completeness

The above test cases check for completeness in the provided units and by integrating the other units. The system provides the expected outcome; hence it is compliant and can be used without any scope for error. All the bugs in the system are discovered and every aspect is examined thoroughly. The accuracy of the system is better since all the parts of the system are covered in the test cases.

## Verify- level of confidence:

The system outcomes and the expected output match and the system are highly accurate. A detailed report documenting the test strategies, resources, estimations, and objectives is maintained to make sure the system is working accurately. The provided test cases offer a clear guide for performing the testing and the higher the accuracy, the greater the level of confidence.

# References

Basu, A., 2015. *Software Quality Assurance.* s.l.:s.n.

Patton, R., n.d. *Software Testing.* 2nd ed. s.l.:Pearson Education.

Ramesh, G., 2007. *Software Testing Principles and Practices.* 2nd ed. s.l.:s.n.