

**School of Computing**

**SRM IST, Kattankulathur – 603 203**

**Course Code: 18CSC206J**

**Course Name: Software Engineering and Project Management**

| **Experiment No** | 11 |
| --- | --- |
| **Title of Experiment** | **Test Cases** |
| **Name of the candidate** | [Alankriti Dadlani](mailto:alankriti.dadlani22@gmail.com) |
| **Team Members** | **ARITRA KARAR (RA2111028010019)**  [SANJAY P (RA2111028010012)](mailto:sm8353@srmist.edu.in) |
| **Register Number** | **RA2111028010010** |
| **Date of Experiment** | **17-04-2023** |

**Mark Split Up**

| **S. No** | **Description** | **Maximum Mark** | **Mark Obtained** |
| --- | --- | --- | --- |
| 1 | Exercise | 5 |  |
| 2 | Viva | 5 |  |
| **Total** | | **10** |  |

**Staff Signature with date**

**Aim**

To develop the test cases manual for the <project name>

**Team Members:**

| **S No** | **Register No** | **Name** | **Role** |
| --- | --- | --- | --- |
| **1** | **RA2111028010019** | **ARITRA KARAR** | **Rep** |
| **2** | **RA2111028010010** | **ALANKRITI DADLANI** | **Member** |
| **3** | **RA2111028010012** | **SANJAY.P** | **Member** |

<Utilize the templates below and incorporate the project’s test cases - Manual Test case to be written for at least one module >

Result:

Thus, the test case manual has been created for the <project name>.

**\*/ For example**

**Test Case**

**Functional Test Cases**

| **Test**  **ID**  **(#)**  **1.** | **Test Scenario**    **Turbine Rotation** | **Test Case**  Test if the rotation of the turbine is caused by the movement of cars on the road | **Execution Steps**  1.Place a car on the road beside the turbine.  2.Observe the turbine and note its initial position.  3.Start the car and drive it past the turbine.  4.Observe the turbine and note its final position. | **Expected**  **Outcome**  The movement of the car should cause the turbine to rotate and generate electricity. | **Actual Outcome**  The turbine  rotates and  generates electricity when the car passes by. | **Status**  Pass/ Failure | **Remarks**  Remarks: Pass |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2.** | Electricity Generation | Test if the generated electricity is being supplied to the local power station | 1.Check the local power station's electricity supply before the turbine is activated.  2.Activate the turbine by placing a car on the road beside it.  3.Check the local power station's electricity supply again.  4.Compare the two electricity supply readings. | The electricity generated by the turbine should be supplied to the local power station and reflected in its electricity supply readings. | The electricity generated by the turbine is being supplied to the local power station and reflected in its electricity supply readings. | Pass/ Failure | PASS |

| 3. | Energy Consumption | Test if the generated electricity is being used by households | 1.Check the energy consumption of a household before the turbine is activated.  2.Activate the turbine by placing a car on the road beside it.  3.Check the energy consumption of the same household again. | The electriciy generatd by the turbine should be used by househ lds and reflected in their energy consumption readings. | The electricity generated by the turbine is being used by households and reflected in their energy consumption readings. | Pass/ Failure | 1.Pass |
| --- | --- | --- | --- | --- | --- | --- | --- |

**Non-Functional Test Cases**

| **Test**  **ID**  **(#)**  **1.** | **Test Scenario**    Security | **Test**  **Case**  Test if the turbine and its associated infrastructure are secure against unauthorized access or tampering | **Execution**  **Steps**  1.Conduct a vulnerability assessment of the turbine and its associated infrastructure.  2.Attempt to access the turbine or its infrastructure without proper authorization.  3.Attempt to tamper with the turbine or its infrastructure.Monitor the turbine and its infrastructue for any suspicious activity. | **ExpectedOutcome**  The turbine and its associated infrastructure should be secure against unauthorized access or tampering. | **Actual**  **Outcome**  The turbine and its associated infrastructure are secure against unauthorized access or tampering. | **Status**  Pass/ Failure | **Remarks**  Pass |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **2.**  **3.** | Performance  Reliability | Test if the turbine can generate enough electricity to power local homes efficiently    Test if the turbine can function continuously for an extended period without any downtime or maintenance issues | 1.Activate the turbine by placing a car on the road beside it.  2.Measure the amount of electricity generated by the turbine within an hour.  Compare the amount of electricity generated to the energy consumption of local households.  1.Activate the turbine by placing a car on the road beside it.  2.Monitor the turbine's performance for an extended period of time, such as a month.  Check for any downtime or maintenance issues during this period. | The turbine should generate enough electricity to power local homes efficiently.  The turbine should function continuously for an extended period without any downtime or maintenance issues. | The turbine generates enough electricity to power local homes efficiently.  The turbine functions continuously for an extended period without any downtime or maintenance issues. | Pass/ Failure    Pass/ Failure | Pass  Pass |

Result: Thus, the test case manual has been created for the smart wind energy project.