Appendix A

Letter to the Adviser

February 24, 2021

**DR. MA. BETH S. CONCEPCION**

Dean, College of Information and Communications Technology West Visayas State University

Luna St., La Paz, Iloilo City

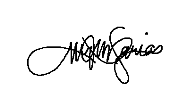
Dear Dr. Concepcion,

The undersigned are BS Information Systems Research 1/Thesis 1 students of CICT, this university. Our thesis/capstone project title is *“Crop Suitability Mapping Using GIS”.*

Knowing of your expertise in research and on the subject matter, we would like to request you to be our **ADVISER**.

We are positively hoping for your acceptance. Kindly check the corresponding box and affix your signature in the space provided. Thank you very much.

|  |
| --- |
| Respectfully yours, |
| Mary Jarnellen V. Daria |
| Camille Aryne Sevillena |
| Aphrodite Labrague |
| Ma. Jessa Panizal |



Appendix B

Letter to the Grammarian

September 1, 2022

DR. JOY PANTINO

Faculty, College of Arts and Sciences

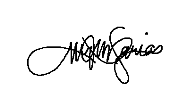
This University

Dear Dr. Pantino,

We are 4th year BSIT students of CICT in West Visayas State University - Main Campus. Our thesis project is entitled, “Crop Suitability Mapping Using Geographic Information System”, under the supervision of Dr. Ma. Beth S. Concepcion. Knowing your expertise in research, we would like to request you to be our thesis grammarian.

We believe that your expertise on this field will significantly improve and help us for the manuscript format and editing of our thesis worthy to be an example or guide for the future BSIT students.

We are hoping for your positive response regarding this request.

Respectfully yours,

Daria, Mary Jarnellen V.

Labrague, Aphrodite E.

Panizal, Ma Jessa P.

Sevillena, Camille Aryne S.

Appendix C

Data Dictionary

1. Login Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Type | Data Type | Field  Size | Description | Example |
| id | integer | 10 | Primary Key of login credential | 1 |
| username | varchar | 50 | Username of the admin | admin |
| password | varchar | 50 | Password of the admin | Admin1234 |

1. Adding Municipal Admin

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Type | Data  Type | Fiel d  Size | Description | Example |
| email | varchar | 50 | Email address of the municipal admin | ajuy@gmail.com |
| password | varchar | 50 | Password of the admin | Ajuy1234 |
| firstName | varchar | 50 | First Name of the admin | Juan |
| middleName | varchar | 50 | Middle Name of the admin | Santos |
| lastName | varchar | 50 | Last Name of the admin | Dela Cruz |
| gender | varchar | 50 | Gender option of the admin | Male |
| contactNumber | integer | 11 | Contact  Number of the admin | +639584574598 |
| municipality | varchar | 50 | Municipalit y to which the admin is located | Ajuy |
| elevation | Double | 10 | Elevation of the  municipalit y to which the admin is located | 458 masl |
| soilpH | Double | 10 | Soil pH of the  municipalit y to which the admin is located | 5.5 |
| latitude | Double | 10 | Latitude of the  municipalit y to which the admin is located | 11.1246° N |
| longtitude | Double | 10 | Longtitude of the  municipalit y to which the admin is located | 123.0114° E |

1. Crop Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Type | Data  Type | Field  Size | Description | Example |
| name | varchar | 50 | Name of the crop | Rice |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| elevation | double | 10 | Elevation required for  the crop to grow | 900 |
| minimumTemp | Double | 10 | Minimum temperature required for  the crop to grow | 22 |
| maximumTemp | Double | 10 | Maximum  Temperature required for  the crop to grow | 26 |
| minimumHumidit y | Double | 10 | Minimum number of humidity required for  the crop to grow | 60 |
| maximumHumidit y | Double | 10 | Maximum number of humidity required for  the crop to grow | 80 |
| minimumRainfal l | Double | 10 | Minimum rainfall required for  the crop to grow | 450 |
| maximumRainfal l | Double | 10 | Maximum rainfall required for  the crop to grow | 700 |
| soilpH | Double | 10 | Soil pH required for  the crop to grow | 5.5 |
| instruction | varchar | 100 | Further instructions for the crop |  |

1. Agro Climatic Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Type | Data  Type | Field  Size | Description | Example |
| date | Date | 10 | Date of when is the agro-climat  ic data is added | (yyyy-mm-dd  ) |
| minimumTemp | double | 10 | Minimum  Temperature of the agro-climat ic data | 30 degrees  Celcius |
| maximumTemp | double | 10 | Maximum  Temperature of the agro-climat ic data | 32 degrees  Celsius |

Appendix D

Sample Program Codes

A. Encoding

<label for="cropnameID">Name</label> <input type="text" class="form-control" id="cropnameID" name="cropname" required> <label for="elevationID">Elevation\*</label> <input type="text" class="form-control" id="elevationID" name="elevation" required> <label for="min\_temperature">Minimum

Temperature\*</label> <input type="text" class="form-control" id="min\_temperature" name="min\_temperature" required>

A. Forecasting

$dateToday = date('2021-06-01'); $dateToday2 = date('Y-m-d'); if($request\_municipalityID == ""){ $query = "SELECT \* FROM municipality\_climatic\_data Where min\_temp = '0' or max\_temp = '0' or humidity = '0' or rainfall = '0' order by todate asc "; }else{ $query = "SELECT \* FROM municipality\_climatic\_data where municipality\_id = '".$request\_municipalityID."' and todate between '".$from\_date."' AND '".$to\_date."' order by todate asc "; } $result = mysqli\_query($conn, $query); $chart\_data = ''; while($row = mysqli\_fetch\_array($result)) {

$month = date('Y-m', strtotime($row['todate'])); $chart\_data .= "{ month:".$month.", min\_temp:".$row["min\_temp"].", max\_temp:".$row["max\_temp"].", humidity:".$row["humidity"].", rainfall:".$row["rainfall"]."}, ";

}

$chart\_data = substr($chart\_data, 0, -1);

A. Recommendation System

$request\_municipalityID = $\_REQUEST['municipality'];

$monthyear = $\_REQUEST['monthyear'];

$from\_date = $\_REQUEST['date\_from'];

$to\_date = $\_REQUEST['date\_to']; $getMunicipalityID = mysqli\_fetch\_array(mysqli\_query($conn, "SELECT \* FROM municipality\_account where id =

'".$request\_municipalityID."' ")); $monthFirstDate = date("Y-m-d", strtotime("-3 months")); $monthLastDate = date('Y-m-d');

<label for="todate">Select Municipality To</label> <select class="form-control" name="municipality" required=""> <?php if($request\_municipalityID ==

""){ ?> <option value="" selected="" disabled>Select Municipality..</option>

<?php }else{ ?>

<option value="<?php echo

$request\_municipalityID ?>"><?php echo $getMunicipalityID['municipality']; ?></option>

<?php } ?>

<?php $getCrops = mysqli\_query($conn, "SELECT \* FROM municipality\_account where del = 'N'"); while($row = mysqli\_fetch\_array($getCrops)){ ?>

<option value="<?php echo $row['id']; ?>"><?php echo $row['municipality']; ?></option>

<?php } ?>

<label for="todate">Date From</label>

<?php if($from\_date == ""){ ?> <input type="date" class="form-control" name="date\_from" value="<?php echo $monthFirstDate; ?>">

<?php }else{ ?> <input type="date" class="form-control" name="date\_from" value="<?php echo

$from\_date; ?>">

<?php } ?>

<label for="todate">Date To</label>

<?php if($to\_date == ""){ ?> <input type="date" class="form-control" name="date\_to" value="<?php echo date('Y-m-d'); ?>"> <?php }else{ ?> <input type="date" class="form-control" name="date\_to" value="<?php echo $to\_date; ?>"> <?php } ?

Appendix E

ISO 25010 Software Quality Evaluation Instrument

1. Software:

Name of Juror:

Position/ Designation:

1. Instructions. Please rate the following statements by putting a check mark on how you agree or disagree.
2. - Unacceptable
3. - Weak
4. - Very Good
5. - Excellent

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 |
| A. Functional Suitability |  |  |  |  |  |
| 1. Functional completeness. The system covers all the specified tasks and  user objectives |  |  |  |  |  |
| 2. Functional correctness. The system provides the correct results with  the needed degree of precision. |  |  |  |  |  |



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 3. Functional appropriateness. The system facilitates the accomplishment of specified tasks  and objectives. |  |  |  |  |  |
| B. Performance Efficiency |  |  |  |  |  |
| 1. Time behavior. The system response  and processing times perform its functions and meet requirements. |  |  |  |  |  |
| 2. Resource utilization. The system amounts and types of resources perform its functions and meet requirements. |  |  |  |  |  |
| 3. Capacity. The system has the  maximum limits/capacity that meet  requirements. |  |  |  |  |  |
| C. Compatibility |  |  |  |  |  |
| 1. Co-existence. The system can  perform its required functions  efficiently while sharing a common  environment and resources with other  products, without detrimental impact on  any other product. |  |  |  |  |  |



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2. Interoperability. Two or more  system components can exchange  information that has been exchanged. |  |  |  |  |  |
| D. Usability |  |  |  |  |  |
| 1. Appropriateness recognizability.  The users can recognize whether the  system is appropriate to their  needs. |  |  |  |  |  |
| 2. Learnability. The system can be used  by specified goals of learning with  effectiveness, efficiency, freedom  from risk and satisfaction in a  specified context of use. |  |  |  |  |  |
| 3. Operability. The system has attributes that makes it easy to operate and to control. |  |  |  |  |  |
| 4. User error protection. The system  protects users against making errors. |  |  |  |  |  |



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 5. User interface aesthetics. The system has a user interface that enables pleasing and satisfying  interaction for the user. |  |  |  |  |  |
| 6. Accessibility. The system can be used by people with widest range of characteristics and capabilities to achieve a specified goal in a  specified context of use. |  |  |  |  |  |
| E. Reliability |  |  |  |  |  |
| 1. Maturity. The system meets needs for  reliability under normal operation. |  |  |  |  |  |
| 2. Availability. The system is  operational and accessible when required for use. |  |  |  |  |  |
| 3. Fault tolerance. The system operates  as intended despite the presence of hardware and software faults. |  |  |  |  |  |



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| --- | --- | --- | --- | --- | --- |
| 4. Recoverability. The system can recover the data directly affected and re- established the desired state of the system in the event of an interruption  or a failure. |  |  |  |  |  |
| F. Security |  |  |  |  |  |
| 1. Confidentiality. The system ensures that data are accessible only to those  authorized to have access. |  |  |  |  |  |
| 2. Integrity. The system prevents unauthorized access to, or modification of computer programs or  data. |  |  |  |  |  |
| 3. Non-repudiation. Actions or vents can be proven to have taken place so that the events or actions cannot be  repudiated later in the system. |  |  |  |  |  |
| 4. Accountability. The actions of an  entity can be traced uniquely to the entity in the system. |  |  |  |  |  |



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 5. Authenticity. The identity of a subject or resource can be proved to  be the one claimed in the system. |  |  |  |  |  |
| G. Maintainability |  |  |  |  |  |
| 1. Modularity. The system is composed of discrete components such that a change to the component has minimal impact on  other components. |  |  |  |  |  |
| 2. Reusability. A system asset can be  used in more than one system, or in building other assets. |  |  |  |  |  |
| 3. Analyzability. The system is effective and efficient with which it is possible to assess the impact on a product or system of an intended change to one or more of its parts, or to diagnose a product for deficiencies or causes of failures, or to identify  parts to be modified. |  |  |  |  |  |
| 4. Modifiability. The system can be  effectively and efficiently modified |  |  |  |  |  |



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| --- | --- | --- | --- | --- | --- |
| without introducing defects or  degrading existing product quality. |  |  |  |  |  |
| 5. Testability. The system is effective and efficient with which test criteria can be established for a system, product or component and tests can be performed to determine whether those  criteria have been met. |  |  |  |  |  |
| H. Portability |  |  |  |  |  |
| 1. Adaptability. The system can effectively and efficiently be adapted for different or evolving hardware, software or other  operational or usage environments. |  |  |  |  |  |
| 2. Installability. The system is effective and efficient with which a system can be successfully installed and/or uninstalled in a  specified environment. |  |  |  |  |  |
| 3. Replaceability. The system can  replace another specified software  for the purpose in the same  environment. |  |  |  |  |  |

Appendix F

Disclaimer

This software project and its corresponding documentation entitled “Crop Suitability Mapping Using Geographic

Information System” is submitted to the College of

Information and Communications Technology, West Visayas State University, in partial fulfillment of the requirements for the degree, Bachelor of Science in Information Systems. It is the product of our own work,

except where indicated text.

We hereby grant the College of Information and Communications Technology permission to freely use, publish in local or international journal/conferences, reproduce, or distribute publicly the paper and electronic copies of this software project and its corresponding documentation in whole or in part, provided that we are acknowledged.

MARY JARNELLEN V. DARIA MA. JESSA P. PANIZAL

APHRODITE E. LABRAGUE CAMILLE ARYNE S. SEVILLENA

August 2022