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

A. 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

B. Adding Municipal Admin

Field Type	Data Type	Field 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	Municipality to which the admin is located	Ajuy
elevation	Double	10	Elevation of the municipality to which the admin is located	458 masl
soilpH	Double	10	Soil pH of the municipality to which the admin is located	5.5
latitude	Double	10	Latitude of the municipality to which the admin is located	11.1246° N
longtitude	Double	10	Longtitude of the municipality to which the admin is located	123.0114° E

C. 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
minimumHumidity	Double	10	Minimum number of humidity required for the crop to grow	60
maximumHumidity	Double	10	Maximum number of humidity required for the crop to grow	80
minimumRainfall	Double	10	Minimum rainfall required for the crop to grow	450

maximumRainfall	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	

D. Agro Climatic Table

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

I. Software: _____

Name of Juror: _____

Position/ Designation: _____

II. Instructions. Please rate the following statements by putting a check mark on how you agree or disagree.

1 - Unacceptable

2 - Weak

3 - Very Good

4 - 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 systemamounts 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 learningwith effectiveness, efficiency, freedom from risk and satisfaction in a specified context of use.					
3. Operability. The system has attributes that makes it easy tooperate 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.					

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					

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