

# **New Leaf Term Project Report**

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## **Chapter 1**

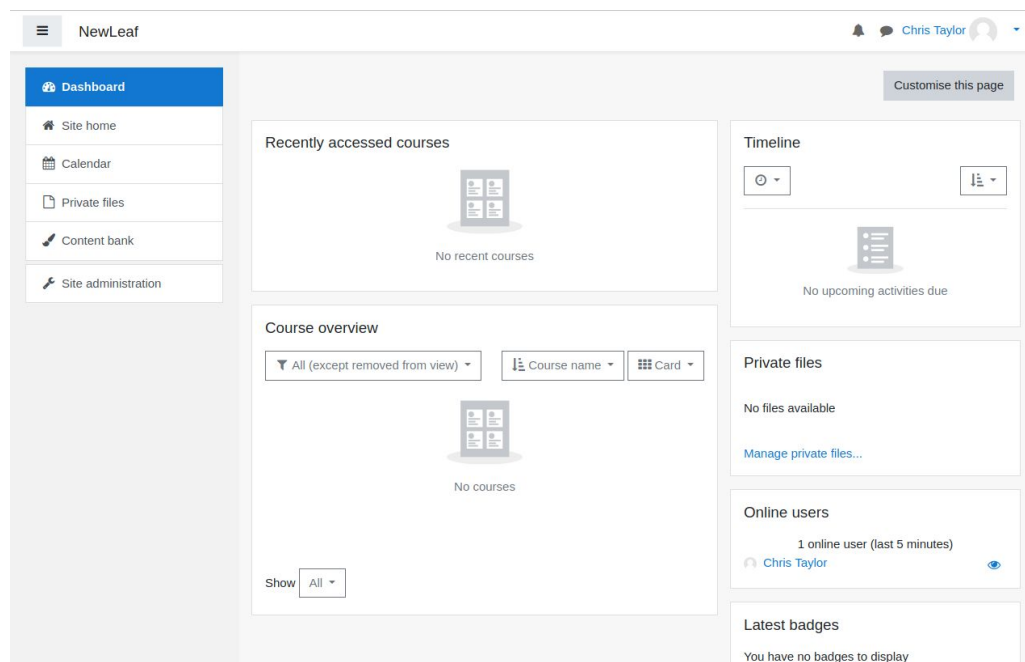
### **Introduction**

Moodle is a popular and free learning management system (LMS) designed to provide educators with a “single robust, secure and integrated system” to create personalized learning environments. It is an active project written primarily in PHP. We chose Moodle because its mission of providing a free and robust LMS resonated with us, especially as online learning has become increasingly important in the last few months due to Covid-19, as well as because of its popularity and its extensive documentation for both users and contributors.

## Building Moodle and Configuring the Testing Environment

This section will briefly describe the methodology we used to build Moodle and initialize the testing environment; more detailed descriptions of this process can be found [here](#) on our team project wiki. First, we built Moodle by cloning the Moodle repository from GitLab and following [Moodle's installation guide](#), which involved the installation and configuration of PHP, MySQL, and the Apache web server.

After completing the initial installation process we were able to interact with the full application in a web browser running on our local machine.



*Pictured: The Moodle homepage after successfully installing the application on a local Ubuntu virtual machine.*

Next, we initialized Moodle's testing environment by installing PHPUnit through the PHP Dependency Manager Composer and configuring it to work with the Moodle's pre-existing unit tests. After this process was complete, we were able to run all tests with the command:

```
vendor/bin/phpunit
```

```

Moodle 3.9.2 (Build: 20200914), ccd4ef8ddd03d98b84e3231866b8b1e024dab1db
Php: 7.4.3, mysqli: 8.0.21-0ubuntu0.20.04.4, OS: Linux 5.4.0-47-generic x86_64
PHPUnit 7.5.20 by Sebastian Bergmann and contributors.

.....59 / 15908 ( 0%)
.....ES.....118 / 15908 ( 0%)
.....F.....177 / 15908 ( 1%)
.....SSSSSSSS.....236 / 15908 ( 1%)
.....295 / 15908 ( 1%)
.....354 / 15908 ( 2%)
.....F.....413 / 15908 ( 2%)
.....472 / 15908 ( 2%)
.....531 / 15908 ( 3%)
.....590 / 15908 ( 3%)
.....649 / 15908 ( 4%)
.....708 / 15908 ( 4%)
.....767 / 15908 ( 4%)
.....826 / 15908 ( 5%)
.....885 / 15908 ( 5%)
.....944 / 15908 ( 5%)
.....1003 / 15908 ( 6%)
.....1062 / 15908 ( 6%)
.....1121 / 15908 ( 7%)
.....1180 / 15908 ( 7%)

```

```

Time: 1.99 hours, Memory: 708.00 MB
There was 1 error:

1) core_dml_psql_read_slave_testcase::test_temp_table
Error: Call to undefined function pg_query()

/var/www/html/moodle/lib/dml/pgsql_native_moodle_database.php:395
/var/www/html/moodle/lib/ddl/sql_generator.php:234
/var/www/html/moodle/lib/ddl/database_manager.php:100
/var/www/html/moodle/lib/ddl/database_manager.php:462
/var/www/html/moodle/lib/dml/tests/dml_psql_read_slave_test.php:129

To re-run:
vendor/bin/phpunit "core_dml_psql_read_slave_testcase" lib/dml/tests/dml_psql_read_slave_test.php
--
There were 2 failures:

1) core_dml_testcase::test_unique_index_collation_trouble
Unique index is accent insensitive, this may cause problems for non-ascii languages. This is usually caused by accent insensitive default collation.

/var/www/html/moodle/lib/dml/tests/dml_test.php:3885
/var/www/html/moodle/lib/phpunit/classes/database_driver_testcase.php:143

To re-run:
vendor/bin/phpunit "core_dml_testcase" lib/dml/tests/dml_test.php

2) core_admintree_testcase::test_admin_setting_configexecutable
Failed asserting that '<div class="form-item row" id="admin-test1">\n
  <div class="form-label col-sm-3 text-sm-right">\n
    <label for="id_s_test1">\n
      Text 1\n
    </label>\n
    <span class="form-shortname d-block small text-muted">test1</span>\n
  </div>\n
  <div class="form-setting col-sm-9">\n
    <div class="form-file defaultsnext">\n
    <div class="form-inline">\n
      <input type="text" name="s_test1" id="id_s_test1" size="50" value="/var/www/html/moodle/filter/tex/readme_moodle.txt" class="form-control text-ltr">\n
      <span class="text-success">&#x2714;</span>\n
    </div>\n
  </div>\n
  <div class="form-defaultinfo text-muted text-ltr">Default: Empty</div>\n
  <div class="form-description mt-3"><p>Help Path</p>\n
</div>\n
  \n
</div>\n
</div>' matches PCRE pattern '/class="text-danger"/'.

/var/www/html/moodle/lib/tests/admintree_test.php:171
/var/www/html/moodle/lib/phpunit/classes/advanced_testcase.php:80

```

*Pictured: Output of vendor/bin/phpunit in the testing environment*

This output demonstrates that the test environment is working properly and gives us some interesting insight into the Moodle testing environment, for example Moodle currently has nearly 16000 PHP unit tests.