ISRA UNIVERSITY HYDERABAD
DEPARTMENT OF COMPUTER SCIENCE
FINAL YEAR PROJECT REPORT

ISRA MOODLE SMS NOTIFICATION SYSTEM

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Certificate

This is to Certify that Abdul Wahab Soomro, Sher Khan Baloch ,Shaikh Imran Aziz has worked under my supervision for the BS(SE) project titled ISRA MOODLE SMS NOTIFICATION SYSTEM , as per partial requirement for the award of the degree of BS(SE) and the work is original and satisfactory.

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DEDICATION

We dedicate all of our work to our parents, teachers & supervisor whose guidelines and ideas put us to the track of successful completion of our project.

ACKNOWLEDGEMENT

“In the name of Allah, the most gracious, the most merciful”

All praises and thanks are for **ALMIGHTY ALLAH** who is entire source of all knowledge and wisdom to mankind.

Special praises for the **HOLY PROPHET MUHAMMAD (P.B.U.H)** who forever is touch of knowledge and goodness for humanity as a whole on the successful completion of the project.

The completion of this project was possible for me, but the cooperation and encouragement that I received from parents, teachers specially **Sir Asghar Mughal** & Our Teacher, Advisor and Project Supervisor **Mam Sehrish Abrejo** they made our job easier.

ABSTRACT

In today’s world of busy peoples time is everything and technology has overcome the needs and demand of people likewise a need that we want to be updated about our university we have to know about our progress, results, assessments, assignments notifications and alerts about university on/off nowhere we receive alerts but on email, but usually most of peoples not check there emails on daily basis but they have their cell phones with them 24/7.Like in banking there is a term used swift banking that means alerts about a customer’s transactions on their accounts will be sent to their cell phones so customers will updated about transactions done on their account. So in university a service should be introduce like that so all teachers and students get alerts on their cell phones. So for this purpose a plugin is used and have been customized in Moodle to support services related to university which are to sends sms to students for general notifications about university and also teachers send other alerts to students regarding course activities.

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Chapter 1

Introduction

"ISRA MOODLE SMS NOTIFICATION SYSTEM" is a PHP based plugin in Moodle, which sends sms by using sms sending API named Sendsms.pk integrated in our plugin, the plugin works for both teachers and university, in which teacher can send sms to students enrolled in their courses and also university can send sms about university related information to the students. The plugin is shown on front page in Moodle the teacher will go and select course regarding which he/she wanted to send notification to students then select students and then type message and send sms to students then sms send to the sms API gateway then from their sms sent to the students. Teachers can also save message templates that they send mostly to students about course activates so they will no need to rewrite the same message again and again.

Likewise teachers, university administration can also send sms to both teachers and students also about any information regarding university and their concern.

There is also history page implemented in plugin that creates log of sent messages only shown in admin account teachers are not allowed to see that log.

The block is configured to be shown in teacher and admin account only student account are privileged not to see the block.

Chapter 2

Background

When we implement a new system for some requirement we may see how much it costs then what hardware and software tools may require to us for implementing system after this evaluation we choose the low cost and most effective system.

So likewise that we firstly implemented our project in asp.net by making a website so there were database problem and for website hosting we require another server so it was increasing cost then we watch on an existing system Moodle that has already a server so the cost was low in Moodle, then we understood the Moodle server configuration after that we come out with that if we want to integrate our system into Moodle it will be integrated through blocks. After that we installed different Moodle versions for stability problems, we start from latest version and come to older version after all the checking out we selected Moodle version 2.3.11 because we evaluated some plugins that were using some API for sending sms then we customized that plugin as per our project requirements and developed log for the plugin and configured Moodle server according to project requirements after updating the plugin we tested it in debugging mode and after that we finalized it.

Chapter 3

Specifications

1. Wamp
2. Moodle LMS
3. Plugin(Isra Moodle SMS Notification System)
4. SendSMS.pk API.

3.1. **Wamp Server**

Version 2.4

Wamp Server is a Windows web development environment. Used for hosting websites and manage them and their database. It allows you to create web applications with Apache2, PHP and a MySQL database. Alongside, **PhpMyAdmin** allows you to manage easily your databases.

3.2. **Moodle**

Version 2.3.11

Moodle is an e-learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalized learning environments. Moodle is built by the Moodle project which is led and coordinated by Moodle HQ, an Australian company of 30 developers which is financially supported by a network of 60 Moodle Partner service companies worldwide. Different plugins are combined to perform small tasks altogether which work as whole is Moodle. It makes Moodle easy to integrate and development and simple for configuration so that Administrators can easily control the functionalities of Moodle and who can access what. Options are available at every step what you want to get, Students can see their subjects, and teachers can upload notes there and also take MCQ exams. Different plug-ins can be installed separately to extend Moodle functionalities according to your own ease or put extra functionalities as per their needs.

3.3. **Isra Moodle Sms Notification System**

Version 2014072141

Isra Moodle Sms Notification System is a plugin that enables a teacher can send sms to students about course activities and also university can send sms to teachers and students about updates of holidays, workshops, seminar and other general notifications to the teachers and students.

3.4. **SMS API**

SMS API here used is sendsms.pk , one you get from sendsms.pk website by creating an account , then API section for files and related details.

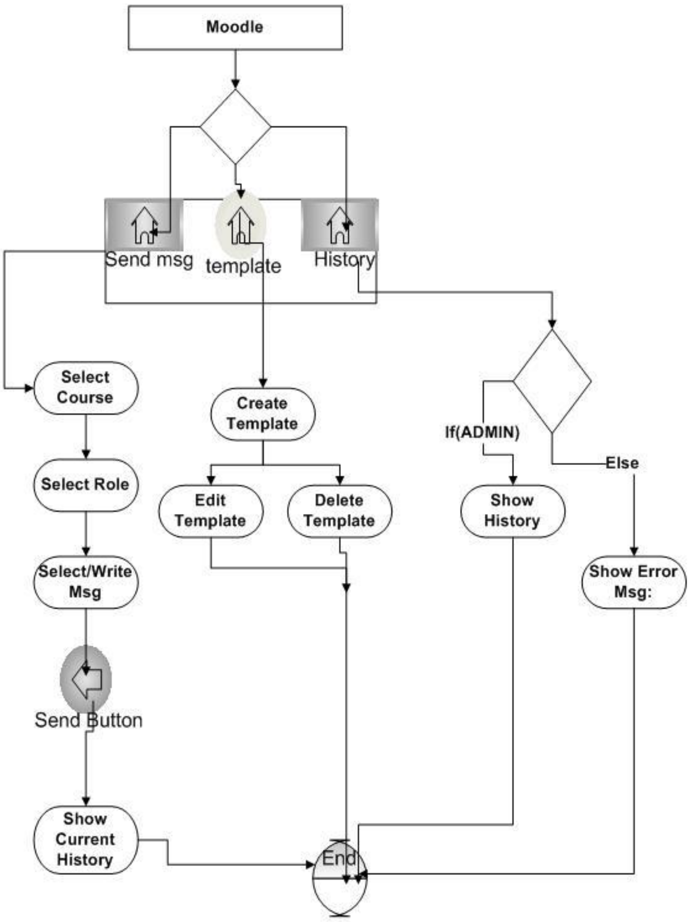
Chapter 4

Work flow and Working (Images)

Here at first the work flow of the application is given by using the application work flow diagram.

4.1.Flow Diagram

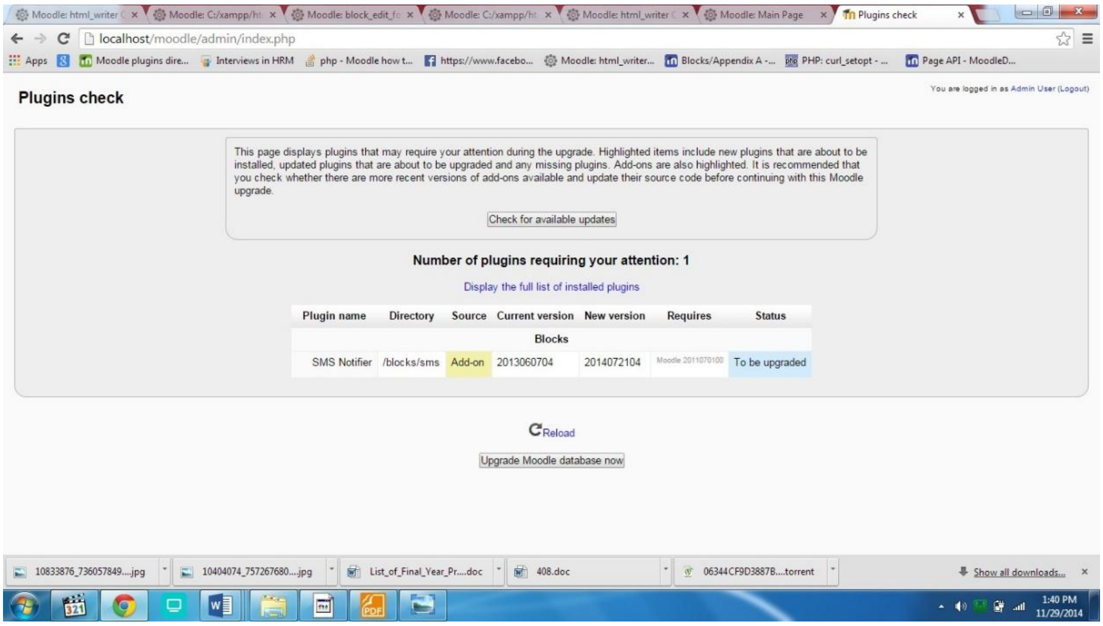
Figure 4. 1



4.2.Snapshots of Plugin

Plugin to be upgraded

Figure 4. 2



localhost/moodle/admin/index.php

Plugins check

You are logged in as Admin User (Logout)

This page displays plugins that may require your attention during the upgrade. Highlighted items include new plugins that are about to be installed, updated plugins that are about to be upgraded and any missing plugins. Add-ons are also highlighted. It is recommended that you check whether there are more recent versions of add-ons available and update their source code before continuing with this Moodle upgrade.

Check for available updates

Number of plugins requiring your attention: 1

Display the full list of installed plugins

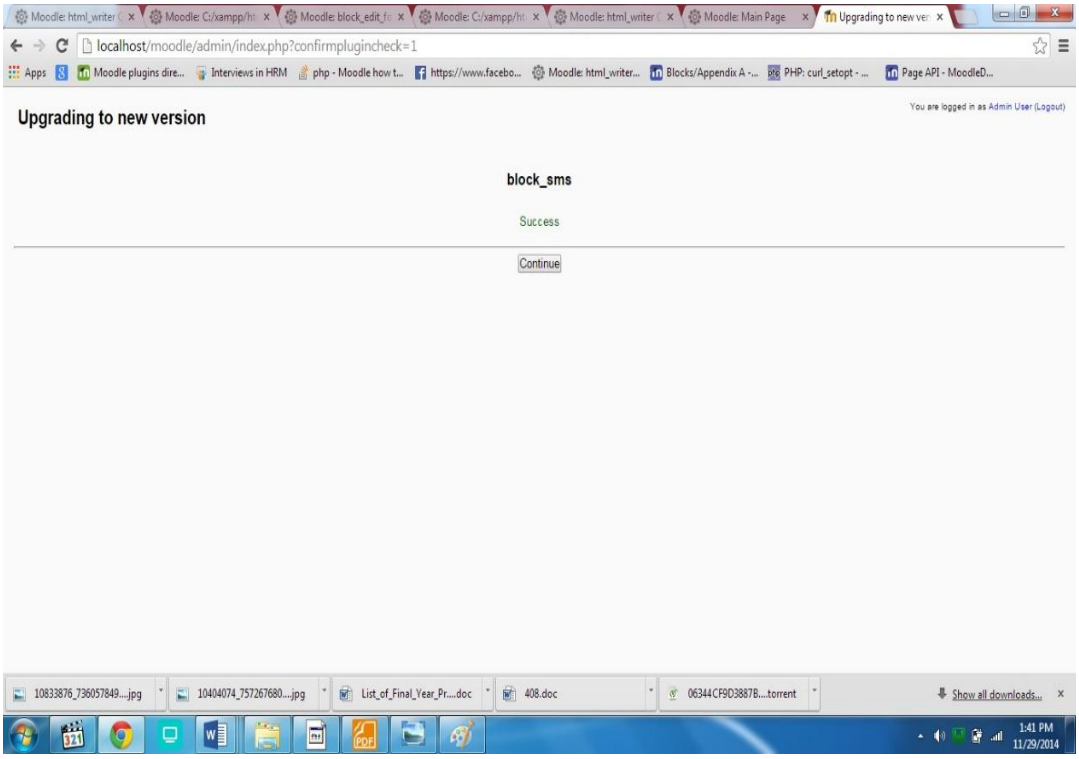
Plugin name	Directory	Source	Current version	New version	Requires	Status
Blocks						
SMS Notifier	/blocks/sms	Add-on	2013060704	2014072104	Moodle 2011070100	To be upgraded

Reload

Upgrade Moodle database now

Plugin Upgraded successfully

Figure 4. 3



localhost/moodle/admin/index.php?confirmplugincheck=1

Upgrading to new version

You are logged in as Admin User (Logout)

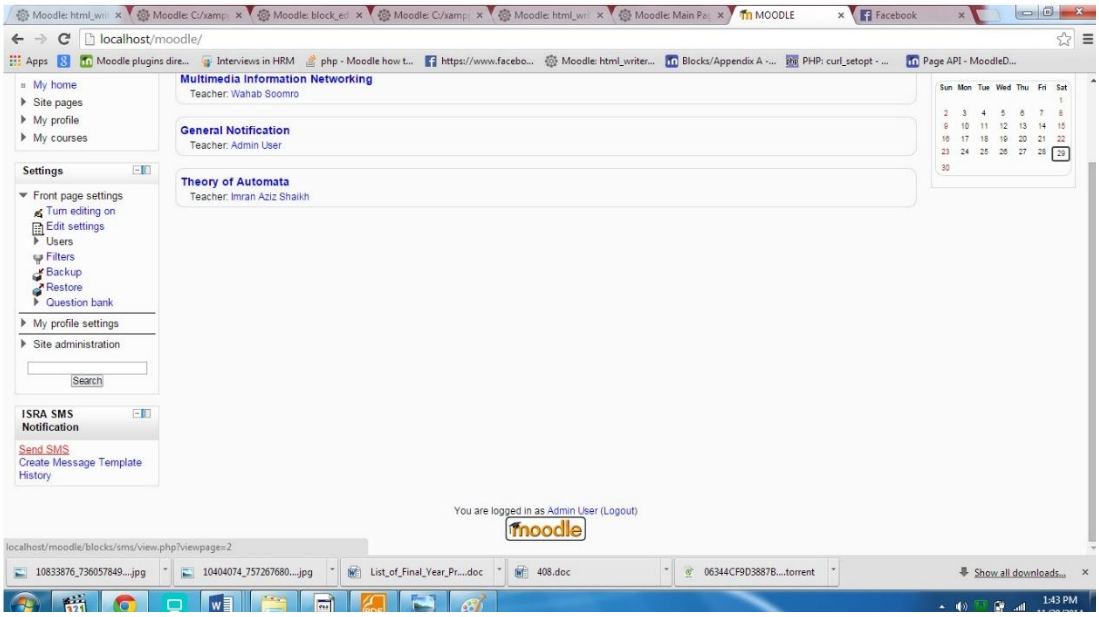
block_sms

Success

Continue

Frontpage bloFront page option of Isra sms notification

Figure 4. 4



localhost/moodle/

Multimedia Information Networking
Teacher: Wahab Soomro

General Notification
Teacher: Admin User

Theory of Automata
Teacher: Imran Aziz Shaikh

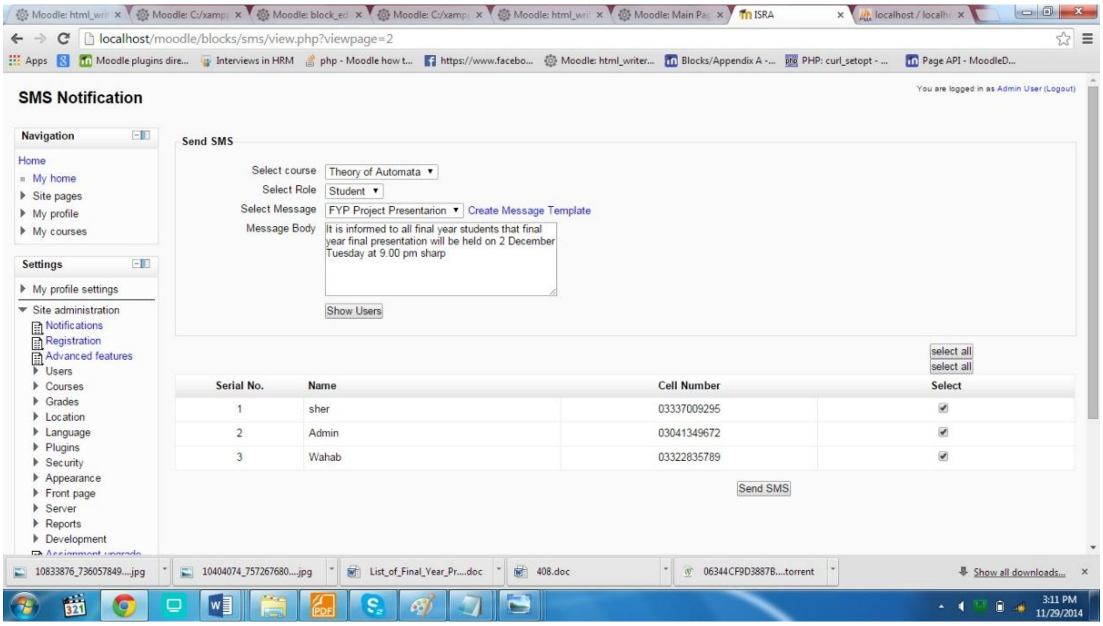
You are logged in as Admin User (Logout)

localhost/moodle/blocks/sms/view.php?viewpage=2

10833876_736057849....jpg
10404074_757267680....jpg
List_of_Final_Year_Pr....doc
408.doc
06344CF9D3887B....torrent

Send Sms page

Figure 4. 5



localhost/moodle/blocks/sms/view.php?viewpage=2

SMS Notification

You are logged in as Admin User (Logout)

Send SMS

Select course: Theory of Automata

Select Role: Student

Select Message: FYP Project Presentarion — Create Message Template

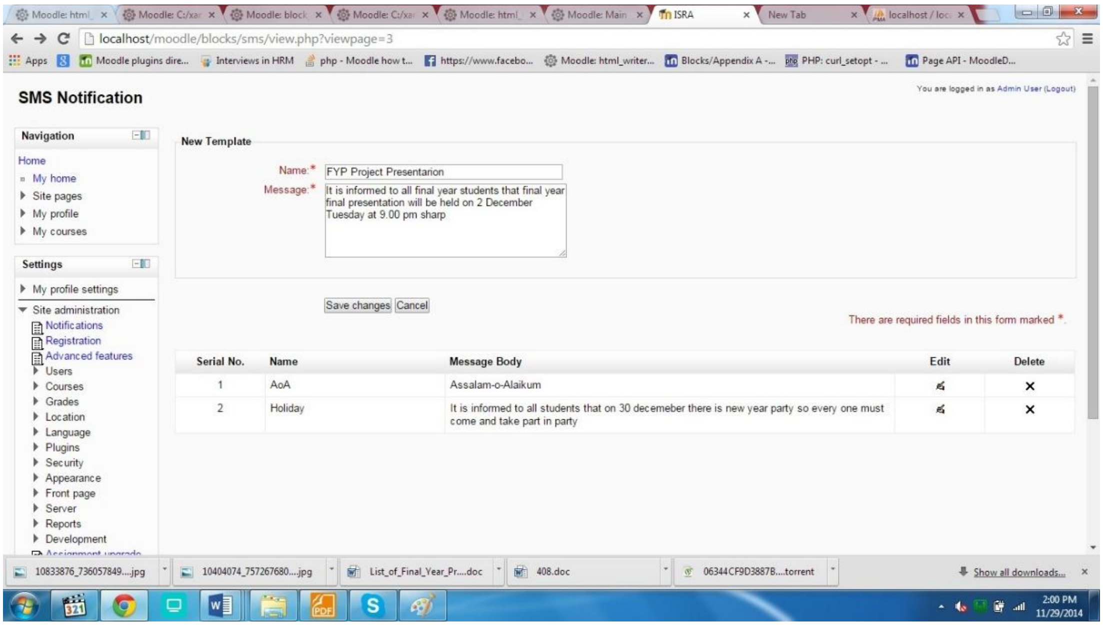
Message Body: It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp

Serial No.	Name	Cell Number	Select
1	sher	03337009295	☑
2	Admin	03041349672	☑
3	Wahab	03322835789	☑

10833876_736057849....jpg
10404074_757267680....jpg
List_of_Final_Year_Pr....doc
408.doc
06344CF9D3887B....torrent

Template page

Figure 4. 6



localhost/moodle/blocks/sms/view.php?viewpage=3

SMS Notification

You are logged in as Admin User (Logout)

New Template

Name:* FYP Project Presentarion

Message:* It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp

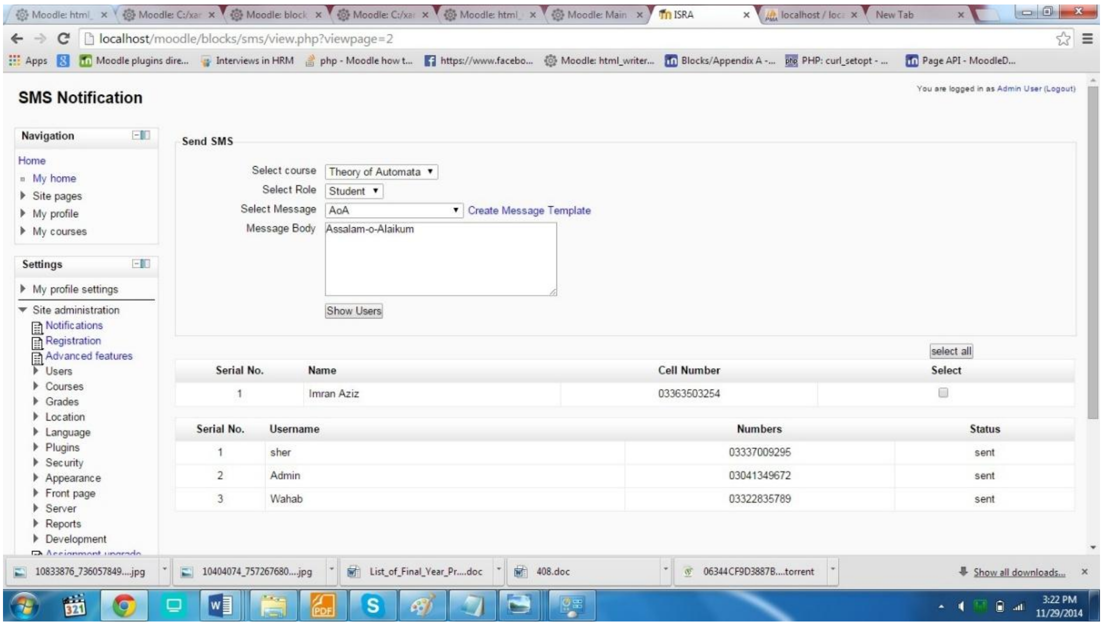
Save changes | Cancel

There are required fields in this form marked *.

Serial No.	Name	Message Body	Edit	Delete
1	AoA	Assalam-o-Alaikum	✎	✕
2	Holiday	It is informed to all students that on 30 decemeber there is new year party so every one must come and take part in party	✎	✕

Send sms sent page

Figure 4. 7



localhost/moodle/blocks/sms/view.php?viewpage=2

SMS Notification

You are logged in as Admin User (Logout)

Send SMS

Select course: Theory of Automata

Select Role: Student

Select Message: AoA — Create Message Template

Message Body: Assalam-o-Alaikum

Show Users

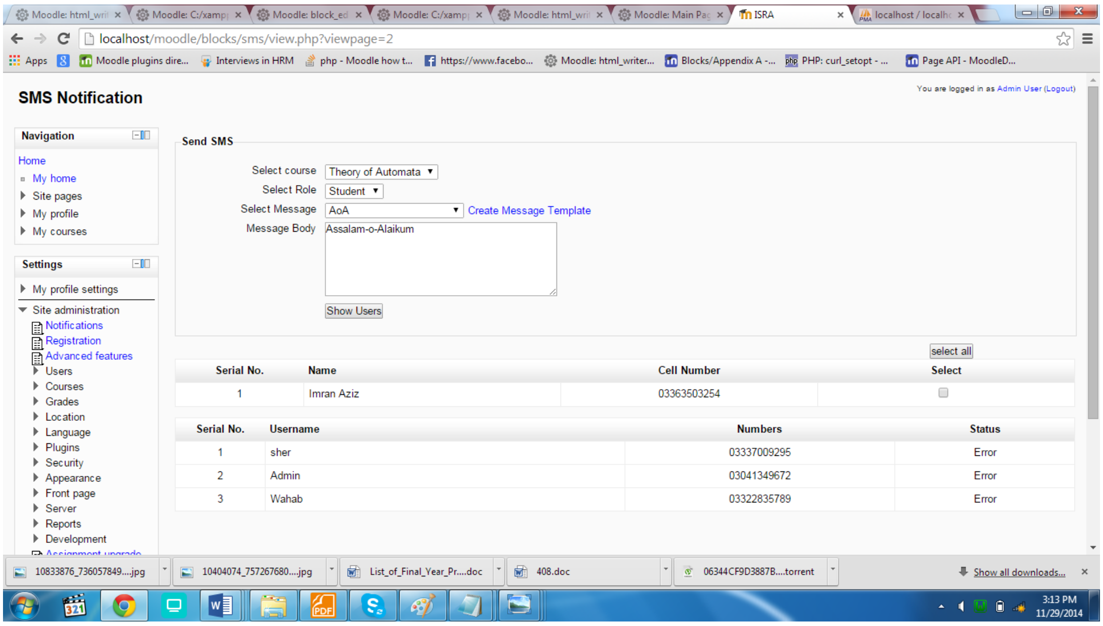
select all

Serial No.	Name	Cell Number	Select
1	Imran Aziz	03363503254	□

Serial No.	Username	Numbers	Status
1	sher	03337009295	sent
2	Admin	03041349672	sent
3	Wahab	03322835789	sent

Send sms error page

Figure 4. 8



SMS Notification

Send SMS

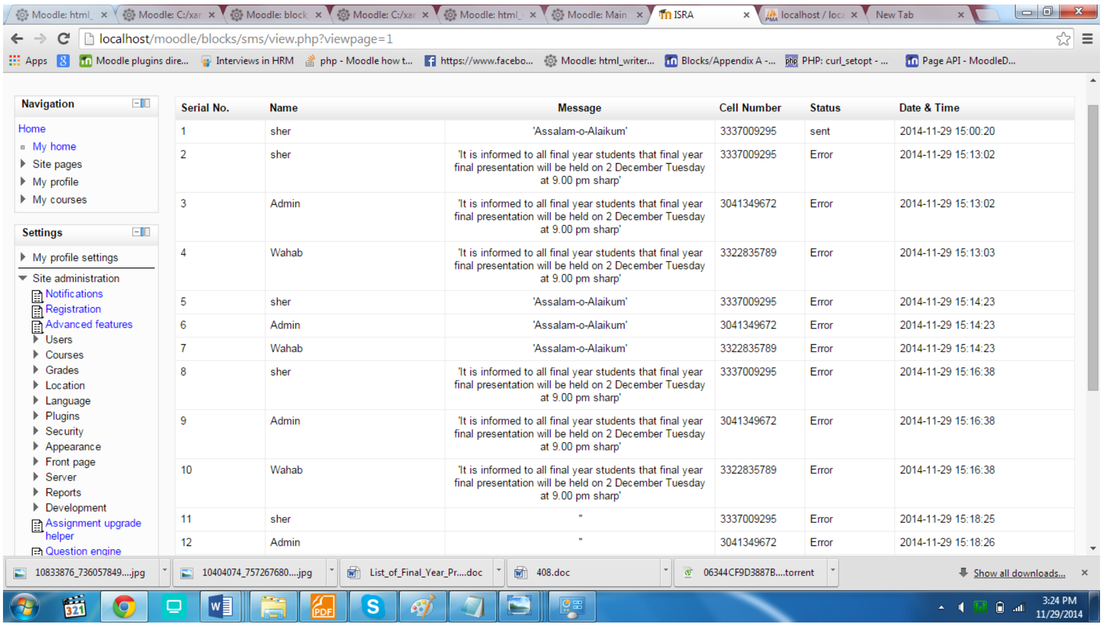
Select course: Theory of Automata
Select Role: Student
Select Message: AoA — Create Message Template
Message Body: Assalam-o-Alaikum

Serial No.	Name	Cell Number	Select
1	Imran Aziz	03363503254	□

Serial No.	Username	Numbers	Status
1	sher	03337009295	Error
2	Admin	03041349672	Error
3	Wahab	03322835789	Error

History(Log view)

Figure 4. 9



Serial No.	Name	Message	Cell Number	Status	Date & Time
1	sher	'Assalam-o-Alaikum'	3337009295	sent	2014-11-29 15:00:20
2	sher	'It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp'	3337009295	Error	2014-11-29 15:13:02
3	Admin	'It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp'	3041349672	Error	2014-11-29 15:13:02
4	Wahab	'It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp'	3322835789	Error	2014-11-29 15:13:03
5	sher	'Assalam-o-Alaikum'	3337009295	Error	2014-11-29 15:14:23
6	Admin	'Assalam-o-Alaikum'	3041349672	Error	2014-11-29 15:14:23
7	Wahab	'Assalam-o-Alaikum'	3322835789	Error	2014-11-29 15:14:23
8	sher	'It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp'	3337009295	Error	2014-11-29 15:16:38
9	Admin	'It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp'	3041349672	Error	2014-11-29 15:16:38
10	Wahab	'It is informed to all final year students that final year final presentation will be held on 2 December Tuesday at 9.00 pm sharp'	3322835789	Error	2014-11-29 15:16:38
11	sher	"	3337009295	Error	2014-11-29 15:18:25
12	Admin	"	3041349672	Error	2014-11-29 15:18:26

Chapter 5

Implementation

5.1. Wamp Server

Wamp server is a windows based server for the development of websites and run PHP pages and their interaction with MySQL.Wamp can be downloaded from Wamp.com/download and Install it in C:/ Directory by extracting it in C:/Wamp, at the time of installation it needs to specify the browser you wish to use for opening php files or any of website you're going to host. As Wamp installed go to C:/Wamp/www folder and place php files and go to specified browser type in address bar "Localhost/example.php" or "Localhost/moodle " if you have installed any website template e.g joomla or wordpress.Want to see the database tables type "Localhost" in your browser go to 'PhpMyAdmin' the default username and password will be prompted User='Root' Password=' '.

5.2. Moodle

Moodle is Online e-learning platform for Students and for teachers easy to teach and provide material to students and their evaluation through quiz, survey, activities , It also provide flexibility to administrators to handle it. Moodle is web template and everyone use it according to their own needs. Wide range of configuration's are available, user database can easily be attached it also works fine with external servers. Moodle can be downloaded from Moodle.org. It is available in different versions nearly all works on same environment but sometime whenever one want to extend it then it comes to the choice that which one should be selected. Simply go to website and select version of your choice click download. It will be downloaded to your computer, it's could be 30-50 MB depend upon version you selected. Downloaded package will be in .zip extension extract it in C:/Wamp/www/moodle then come to browser and type 'localhost' it will notify you of Moodle installation. Moodle checks for all necessary requirements it needs to be installed on your server. Configure it. e.g. Database selection, Site name, Language. Admin panel password etc after that installation process starts and it may take half to one hour depend on your machine speed once its installed login through admin account, create courses, create users enrol them in different courses and give access privileges to the different user , assign roles e.g. student, teacher, manager. Everything else is Graphical User Interface configure it according to your needs. if get any problem in installation visit Moodle installation documentation Moodle.org/installation/mainpage/docs.

5.3. Plugin Installation

As Moodle made up of plugins so there is standard Moodle plugin directory you may choose further plugin from there, plugin can be activity module, block or may belong some else category so we chose block and to install them by downloading from moodle.org/plugin directory/list/blocks. They contain .zip format extract the plugin at C:/Wamp/www/moodle/blocks folder and then go to browser login as admin go to Site Administration→ Notification's click upgrade the database, Moodle database will be upgrade and block will be installed. We made a choice to pick already built-in block as template. So we chose SMS Notification Block which has already had capability to send message only to any number by choosing the subject from a list all subjects and write the message. The message then will be sent to the users saved in Moodle database via a SMS API of clickatell which could be use internationally on trial bases but on trial someone cannot modify the contents of the message as specified by API vendor.

5.4. Extended to ISRA Moodle SMS notification

As we needed a well suited Plugin for our use here at Isra and must have possess the functionalities that's are of your benefit. So we understand the whole plug-in edited it, made many changes as per our need. As we live in Pakistan so we searched for API which could be easily available at Pakistan and within budget. And in trial base we can change the contents of our message. We chose SendSms.pk leading Pakistan's web to mobile message sender service, downloaded the API code integrated it with our Plug-in it worked fine on daily basis 5 messages as trail to any network in Pakistan. After that it was our need to put template in it. Created a separate form and back-end database via MySQL through php my admin in Moodle database successfully added the template. So till here some work had been done but security is essential, in fact block shows the list of all subjects stored in database by default we made it a change so that only teacher can send Notification to their own students by showing the only subjects when a teacher is logged in . Although there was a difficulty to select all students one by one so we placed a button name "Select All" after the displaying user list. All is good but what to do when admin want to send a notification to all students and teachers too, so we created a 'Role' named 'All' and a subject 'General Notification' and enrolled all user's in 'General Notification' assigned the role of 'All' hence admin can send message to all user's.

Another requirement that must be fulfilled is the history. So we created history of sent messages weather they are sent or not, content of the message date and time

5.5. Folder & Files

5.5.1. db

- Access.php
- Install.xml

5.5.2. Lang

- En
  - Block_sms

5.5.3. Sms_api

- Index.php
- Sms.php

5.5.4. Block_sms.php
5.5.5. Lib.php
5.5.6. Load_message.php
5.5.7. Module.js(JavaScript)
5.5.8. Settings.php
5.5.9. Sms_form.php
5.5.10. User_list.php
5.5.11. Version.php
5.5.12. View.php

5.5.1. Db

- **Access.php**

The Access.php gives you functions so you can determine what the current user is allowed to do. It also allows modules to extend Moodle with new capabilities.

➢ defined('MOODLE_INTERNAL') || die()

This is a safety precaution, indeed, some scripts should not be triggered by a direct appeal of the script in a browser. The “entrance doors" Moodle define this constant, any script " included” can test this variable to be sure we do not use ONLY by inclusion.

```
$capabilities = array(
'mod/folder:managefiles' => array(
 'riskbitmask' => RISK_SPAM,
'captype' => 'write',
'contextlevel' => CONTEXT_MODULE,
'archetypes' => array(
 'edi tingteacher' => CAP_ALLOW
            ); ); );
```

Capabilities are defined by $capabilities array defined in db/access.php files. The name of the capability consists of "plugintype/pluginname: capability name".

Where the meaning of array keys is:

- **Risk bitmask** - associated risks. These are explained on hardening new Roles system.
- **cap type** - *read* or *write* capability type, for security reasons system prevents all write capabilities for guest account and not-logged-in users
- **context level** - specified as context level constant, the lowest level where is this capability usable, plugins may hardcode exceptions if they use capability in more contexts
- **Archetypes** - specifies defaults for roles with standard archetypes, this is used in installs, upgrades and when resetting roles (it is recommended to use only CAP_ALLOW here).

  - 'clonepermissionsfrom' => 'moodle/my:manageblocks'

- **clonepermissionsfrom** - when you are adding a new capability, you can tell Moodle to copy the permissions for each role from the current settings for another capability. This may give better defaults than just using archetypes for administrators who have heavily customized their roles configuration. The full syntax is: 'clonepermissionsfrom' => 'moodle/quiz:attempt',

- In releases before May 2012 ‘clone permissions from’ works only inside individual plugins or only in core, in later releases plugins may also clone permissions from core, success of other cloning operations depends on upgrade order.

'block/sms:addinstance'

Who can add instances of this block, in which context and what is capability type e.g. read, write

View page who can view the page which role have access, who has been prevent who have to be allowed

'block/sms:managepages' => array(valus,values);

Who can manage pages, prevent, allowed or prohibit.

In to Moodle as administrator, navigate to the site home page, and follow the instructions. (If you need to test the upgrade script without changing the plugin version, it is also possible to set back the version number in the mdl_block or mdl_modules table in the database.

- Install.xml
  XMLDB definition of the DB schema, generated with the XMLDB Editor.

5.5.2. lang

Language support for plugin(s) is added by creating a **lang** subdirectory in the plugin directory. The structure of the **lang** directory is then the same as the "main" language directory

- **block_sms.php**

Adding name of string in language file

Name of the string is added to a pre-defined array $string. If you want to a string "Editing Quiz" with string name "editingquiz" in Drag & Drop plugin then add the following in qtype_dragdrop.php language file.
This is for ease because someone wants to add any language he can make it easily
By just changing in language file no need change the plugin inside
e.g want to add urdu language
$string[‘editingquiz’] = ‘سوال والے پہے رکھ ھن ’;
It would be changed in urdu.

```
<?php
//string name added for 'Editing Quiz'
$string['editingquiz'] = 'Editing Quiz';
//Help string for 'Editing Quiz' (optional)
$string['editingquiz_help'] = 'Help for editing quiz';
?>
```

5.5.3. sms_api

It is provided by API service provider to put SMS functionalities in our plugin or it can be used separately anywhere or standalone.We changed it according to our needs.

- **Index.php**
  It mainly contains only the API key for validation.
  Object of API service provider which validates the key.

- **Sms.php**
  It makes a class in it defines a variable and assigns it a url also defines constructer which accepts a argument API key

  - Function isValid
    Checks the validity of API key
  - Function getOutbox
    Get status from outbox weather message is paced in queue for sending or have any error and the message sent.
  - Function sendsms
    Takes two arguments Phone number and the message and send it to website also with a if condition it checks weather the number is a valid 11 digit number or not.
  - curl_setopt — Set an option for a cURL transfer

  - CURLOPT_URL : The URL to fetch. This can also be set when initializing a session with curl_init().

  - CURLOPT_FAILONERROR: TRUE to fail verbosely if the HTTP code returned is greater than or equal to 400. The default behavior is to return the page normally, ignoring the code.

  - CURLOPT_FOLLOWLOCATION : TRUE to follow any "Location: " header that the server sends as part of the HTTP header (note this is recursive, PHP will follow as many "Location: " headers that it is sent, unless CURLOPT_MAXREDIRS is set).

  - CURLOPT_RETURNTRANSFER: TRUE to return the transfer as a string of the return value of curl_exec() instead of outputting it out directly.

  - CURLOPT_POST : TRUE to do a regular HTTP POST. This POST is the normal application/x-www-form-urlencoded kind, most commonly used by HTML forms.

- CURLOPT_POSTFIELDS : The full data to post in a HTTP "POST" operation. To post a file, prepend a filename with @ and use the full path. The filetype can be explicitly specified by following the filename with the type in the format ';type=mimetype'. This parameter can either be passed as a urlencoded string like 'para1=val1&para2=val2&...' or as an array with the field name as key and field data as value. If value is an array, the Content-Type header will be set to multipart/form-data. As of PHP 5.2.0, value must be an array if files are passed to this option with the @ prefix. As of PHP 5.5.0, the @ prefix is deprecated and files can be sent using CURLFile. The @ prefix can be disabled for safe passing of values beginning with @ by setting the CURLOPT_SAFE_UPLOAD option to TRUE.

- curl_exec : Execute the given cURL session.

  This function should be called after initializing a cURL session and all the options for the session are set. Returns TRUE on success or FALSE on failure. However, if the

5.5.4. block_sms.php

Basic and First File to Initialize the block and put all required basic functions a Block need.

- public function init()
  Initialize the block and insert's the title of block by using get_string function from language file

- public function get_content()

  Parent class version of this function simply returns NULL This should be implemented by the derived class to return the content object..

- $this->content->text .= html_writer::link(url page)
  Link function of html_writer class is called here to create links to any file or pages

- public function has_config()
  does our block has global configuration settings and to basic access all Moodle config's. e.g move block, edit or delete block from moodle front page

- public function applicable_formats()
  Where this plugin will be used in modules, courses, tags if we place all then it can be used anywhere .

- public function instance_allow_config()

If more then one instances of plugin is created the this function defines that there is separate configuration settings for every instance or allowed or not by putting this function it allows to have separate configuration for every instance of plugin.

- public function specialization()
  This function initialize immediately after an instance of block has been created put its title and headings

- public function instance_config_save($data)
  Stores the data of every instance of block separately so that every instance has separate configuration settings.

5.5.5. lib.php

This File imports a File form folder sms_api/sms.php and makes the send_sms function to send message and also Validates the API key and generates the responses to show weather API key is valid or not

- function send_sms($number, $message)

  In this $number is user phone number in $message the message text sends sms to the student by taking information from parameters if message is sent then return sent otherwise error.

- $sms = new sendsmsdotpk($apikey);

  Creates the object and checks for API key fetch the API key from sms.php , assigns it to a variable to show error message.

5.5.6. Load_message.php

It simply runs a query to fetch messages saved in template.

$DB->get_record_sql('SELECT template FROM {block_sms_template}

5.5.7. Module.js

The official JavaScript library for Moodle is the Yahoo! User Interface framework. Although lesser known, it is an extremely capable, powerful, fast, and well-documented library.

- Moodle also includes a number of its own YUI modules to extend the core YUI library.

- all JS stored in one global M namespace

- all plugins support module.js files

- most JS is initialized through $PAGE->requires->js_init_call()

- Y.one

  Creating objects for elements eg button
- use Y.one(`'#elementId'`)
- JSON

  JSON: JavaScript Object Notation.
  JSON is a syntax for storing and exchanging data.
  JSON is an easier to use alternative to XML.

- Console.log

  Writes a message to the console. You may pass as many arguments as you'd like, and they will be joined together in a space-delimited line.

5.5.8. Settings.php

Settings of the block not ordinary settings as Moodle define for all blocks but the specific settings by checking weather user is admin , these are admin settings it includes API key, API password, User name of account created at API service provider site

5.5.9. Sms_form.php

This file includes the all forms required for plugin, what elements are included in form buttons, text area, drop down list, image etc.

It extends moodleform class to make forms, what settings and data does form use from moodle, what is included in form, their display reports, related queries to fill form elements from database. Creates tables to show these data in proper form.

<u>It Contains three forms</u>

a. sms send which is the main page where courses, roles, message is selected
b. template form which displays the templates from database
c. history form which displays the history of sent messages, their related date, time etc

- public function definition()

  Defines the definition of form what is included in form elements, buttons, queries, validation, condition, loops all are defined in this function for individual form.

- $DB->get_records_sql_menu("SELECT c.id, c.fullname FROM {course} c JOIN {context} ctx ON c.id = ctx.instanceid JOIN {role_assignments} ra ON ra.contextid = ctx.id JOIN {user} u ON u.id = ra.userid where u.id='$var' and c.fullname != 'project'", array($params=null), $limitfrom=0, $limitnum=$courses);

  This a function in Moodle can bu used to fetch databse from MySQL , in parameters the required query is given , this query get courses of the current logged in user if the role of user is teacher.
- $mform->addElement('text', 'message body', name of element)
  $Form means in this form , add element then pass parameters what kind of element your are going to put in your form.

- $DB->get_records_sql_menu (SELECT id , name FROM role)
  This query fetches the all roles id their names.

- $DB->get_records_sql_menu('SELECT id, name FROM block_sms_template)
  Gets the name and id of templates from database.

- $sql="SELECT user. First name, usr.id, user. Last name, user. Email, user. phone2, c. full name FROM (course) c INNER JOIN (context) cx ON c.id = cx. instanceid AND cx.contextlevel = '50' and c.id=$c_id INNER JOIN (role-assignments) ra ON cx.id = ra.contextid INNER JOIN (role) r ON ra. Role id = r.id INNER JOIN (user) user ON ra. user id = user.id.

  This query returns all the user’s enrolled in specific course in a specific context where the role of user must be student.

- $count = $DB->record_exists_sql ($sql);
  Checks against any query that weather record exists or not,
  get sql query as argument.

- function toggleBoxes()
  a JavaScript button to check all boxes or uncheck them , this button is added so that if a teacher or admin wants to select all it can easily select these with just one click.

- public function validation($data)
  This custom made function is used for validation weather duplicate values exists in template or required fields are left empty.

- public function display_report()
  This is the main function which displays all the form elements, create table for them, html tags all decoration proper set up of data to be shown in a proper way all is done inside this function.

- table = new html_table()

table creates the new table object of html table class , set attributes related to table alignment, width, height, spacing table border etc .

- $sql="SELECT id, name, phone, status, time, message FROM (history)"
  This query selects the particular fields from history table .

- For each ($rs as $log) {$log->name}
  For each loop is used to display records

5.5.10. Userlist.php

This file list out users on send sms form page by conforming that course and role has been selected , of not then do not show the users.
It imports sms-form.php

- $form = new sms-send()
  This calls the sms-send form here to be displayed.
  Whatever defined in sms-send form pulls it here.

- $table= $form->display-report($c-id, $r-id)
  Display the contents of sms-send form as defined per conditions in that form if course id (c-id) and (r-id) as passed as argument, they are required parameters otherwise form wouldn't be shown .

- Html-writer::table($table)
  Call to the table function of html-writer class, it takes table as argument to display the particular table on any page.

5.5.11. Version.php

In this file as suggested by name , the version of current plugin is stored and
what version it requires. So that which plugin is compatible with which version of moodle , it must would be installed with specific moodle version to function properly.
Moodle version's are in fact the date of release or development two variables are defined in this file defined below

- $plugin->version = 2014072104
  (YYYYMMDDXX)
  Format of particular version. This is the current version of plugin.

- $plugin->requires = 2011070100
  Required version of moodle means it would released in specific date.

5.5.12. View.php

As suggested by name view , so that's the file where we import all forms , print these on our actual Moodle pages with certain conditions , place extra condition for forms , import sms-form.php , set the page layout's how many forms should be displayed at one form, page heading , titles etc.

We created three forms sms_send, template_form and history.

Displayed these with if conditions if viewpage=1 then this form and so on, also placed conditions that who can access these forms, extra decoration , tables related all these.

- require_login()
  This function is used at first of this page , if the block is displayed on moodle page , no user is logged in then user must login to access the page.

- echo $OUTPUT->header()
  Display header of the moodle , OUTPUT se moodle's global variable set by moodle display that on our page.

- $form = new simplehtml_form()
  $form->set_data($toform)
  $form->display()
  $table=$form->display_report()
  echo html_writer :: table($table)

  This all first call the form then set form data , after that call display function , assign these data to a variable , display these in a html table.

- (isset($_REQUEST['submit'])
  This checks that specific button has been preset or not , submit is the button name here , I can be a form data or anything.

- count($user)
  This is count function , takes an argument as numeric eg array or list and counts them.

- $DB->insert_record('table name', 'dataobjects)
  This is the insert query for inserting records in any table , for moodle, first parameter is the table name, second is the data objects wish to insert.

- $DB->delete_records('table name','records want to delete')
  This Query is for deleting records by accepting two parameters , specified .

- redirect($pageurl)
  this function is used to redirect the page to any specified url at a given place in form or after any specified action.

- $DB->update_record('block_sms_template', $fromform)
  This query is for updating records in moodle accepts two parameters first the table name, and second the data objects to be updated or you can place these in any array.

- $PAGE->requires->js_init_call('M. block name. init', $params)
  Calls a java script function to Initialize the block by accepting block name and any other required parameters if any.

- echo $OUTPUT->footer()
  insert the footer of moodle defined by OUTPUT global variable.

Chapter 6

Innovation

This Plugin can be more enhanced, when system will send the following information to students by making their separate functions like, Timetable alert, 10 minutes before commencing of class, Course content covered within class, Attendance status to the student on daily basis, Exam date sheet, Exam result, Workshop / seminars alerts, Alert of admission information to new comers, Any curricular or extracurricular event alert, Any urgent information from University admission.

Further it can be extended to work outside of Pakistan, by using any other API service, history page further can be changed so that every teacher can see log of his own subject. Also could be upgraded to use with latest moodle releases.

Appendix – A

References

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