

Open Education Resource

Flipping the classroom with MOODLE

Computer Network (Basics of Internet)

Created as a part of

IITBx, AICTE approved FDP 101x / FDP201x

Pedagogy for Online and Blended Teaching-Learning Process

Resource Center

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Section -I

Introduction to OER-The Internet

A brief overview of OER

An OER is a digitized materials offered freely and openly for all educators, students and self-learners to use and re-use for teaching, learning and research [4]. This OER is a collection of MOODLE Lesson activities that are useful as out-of-class activity while flipping the classroom. Currently there is one lesson created in this OER, and it deals with a topic related to ‘The Internet’ as a part of course on Computer Networks.

This course is available at OER Link:

<https://spit1229group1.moodlecloud.com/login/index.php>

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Target Audience

Second year Engineering students (Domain: Information Technology)

Tags of OER

Open Education, Resource, Internet, Networks, HTTP, IP and ARPANET

Tools used in OER creation

OER is developed in MOODLE 3.4. MOODLE cloud site is used for creating the MOODLE course. [1]

Learning objective of OER

After using this OER, learner will be able to:

1. Describe what is Internet (Recall Level)
2. Explain how does Internet work (Understand Level)
3. Identify class of the given IP address (Apply Level)
4. Explain importance of Protocols in the working of Internet (Understand Level)

Tools used for OER creation and Documentation

1. Cam Studio: For Screen casting with Audio (Open source) [2]
2. Microsoft Office (Power Point, Word): For Presentations and Documentation (Proprietary)
3. Moodle Cloud: For Course Creation including activities [1]
4. Notepad: For creation Question banks for Quizzes.

Section –II

Pedagogy/Content/Technology Design Decisions

The decisions taken for designing this OER are broadly categorized in following three categories.

1. Content Decisions
2. Pedagogic Decisions
3. Technology Decisions

❖ Content Decisions

The lesson is categorized in four topics which includes LeD (Learning Dialogues) such as videos, LbD (Learning by Doing Activities) such as quizzes, LxT (Learning extension Resources) and LxI (Learning Experiences Interactions) such as discussion forums. Students are expected to watch the video and perform the associated activity.

This OER is subdivided in four topics:

1. Introduction to Internet

The first segment consists of one LeD video with LbD activity which includes a quiz. As this is a first video of this course, the LeD is chosen to introduce concept of Internet to the students. The quiz is then designed to test the **understanding** of student after watching the video.

2. Structure of Internet

This subsection consists of one LeD video with LbD activity (quiz). This quiz is also designed to test the **understanding** of student after watching the video.

3. Addressing on Internet

The third segment includes one LeD video with LbD activities (quiz and Discussion forum). Here the quiz is designed to test the **understanding** of learner and the discussion forum question will test **apply** cognitive level of a learner.

4. Protocol of Internet

The fourth subsection includes LxI and a LeD video with LbD. LxI is added here to test the **recall** cognitive level of the learner.

5. LxT (Learning Extension Resources)

This segment of OER consist,

1. One NPTL video on ‘Introduction to Internet’ (available under CC license)
2. Two Presentations on
 - a. The Internet and the Web
 - b. Management of Network

These extended resources are provided to enhance in-depth understanding of the concept.

6. Feedback survey

The last segment of the OER is a feedback survey. It is mandatory for every learner to participate in this survey. This will ensure continuous improvement of the course.

❖ Pedagogy Decisions

This course is designed as a series of lessons on the subject “Computer Networks”. Each lesson will be based on Flipped classroom strategy. A lesson is planned to engage students for approximately 30-40 minutes in an out of-class activity. It will also prepare students for an in-class session of an hour’s duration. The course currently includes one such flipped classroom lesson.

The in-class activities include quizzes and discussion forums, which will test learner’s knowledge at **recall, understand and Apply level**.

The out of-class active learning activities that are planned as,

1. Real world problem solving using
 - Think-Pair-Share
2. Concept clarification using
 - Peer Instruction

These activities will help learners to achieve knowledge at **analyze, evaluate and create level**.

❖ Technology Decisions

Depending upon the course needs various decisions about the technological tools were taken. For seamless dissemination of the course within learners, word press site is used. Course URL is be made available on facilitator's word press site.

To create the course for flipped classroom strategy, MOODLE is considered. MOODLE is an open source learning management system (LMS). It provides very good support for uploading media files, designing quizzes and setting up discussion forums. MOODLE also has good documentation support. More information about MOODLE is available at [3].

To create presentations and documents, Microsoft office is used.

Section –III

OER Description

Link to OER

To access this OER use following Moodle cloud link,

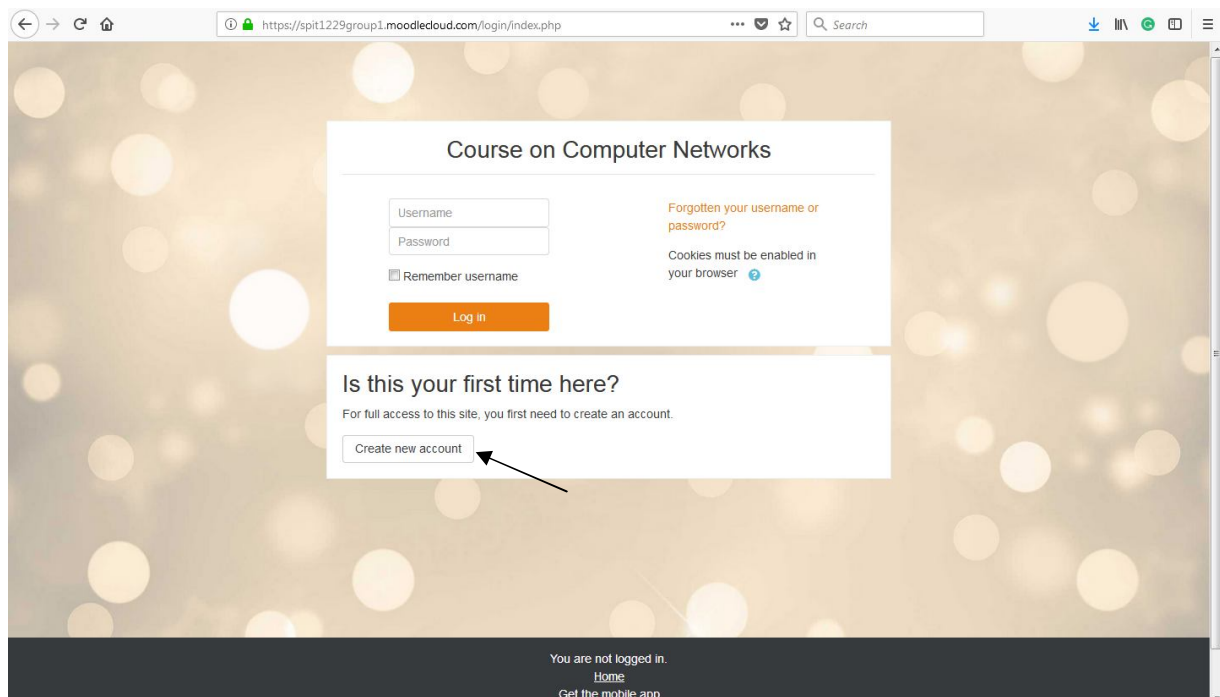
<https://spit1229group1.moodlecloud.com/login/index.php>

Course Enrollment

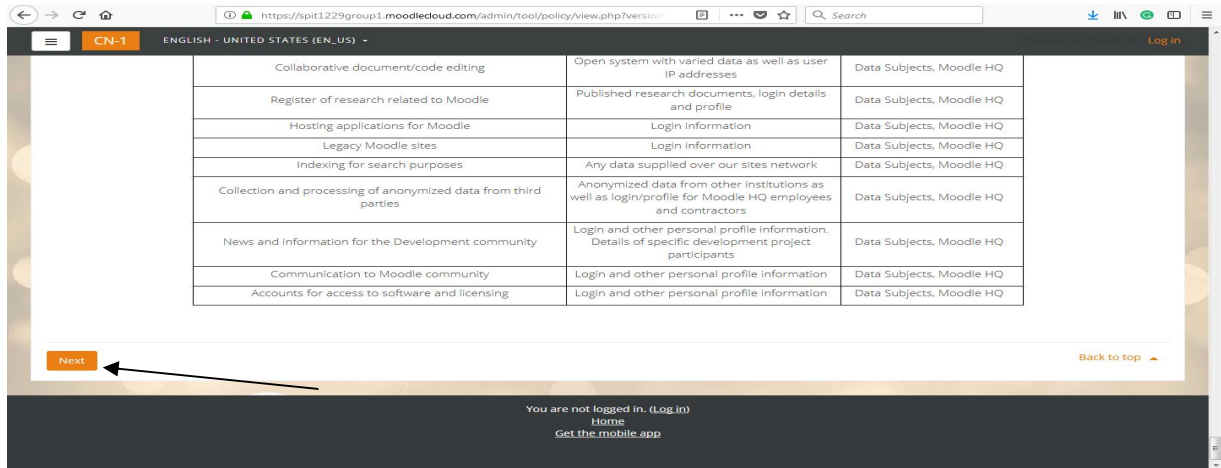
The access to this course is through email registration. Learner will be prompted to set USER ID and PASSWORD for accessing the course. The steps are as follows:

Email Registration steps for student

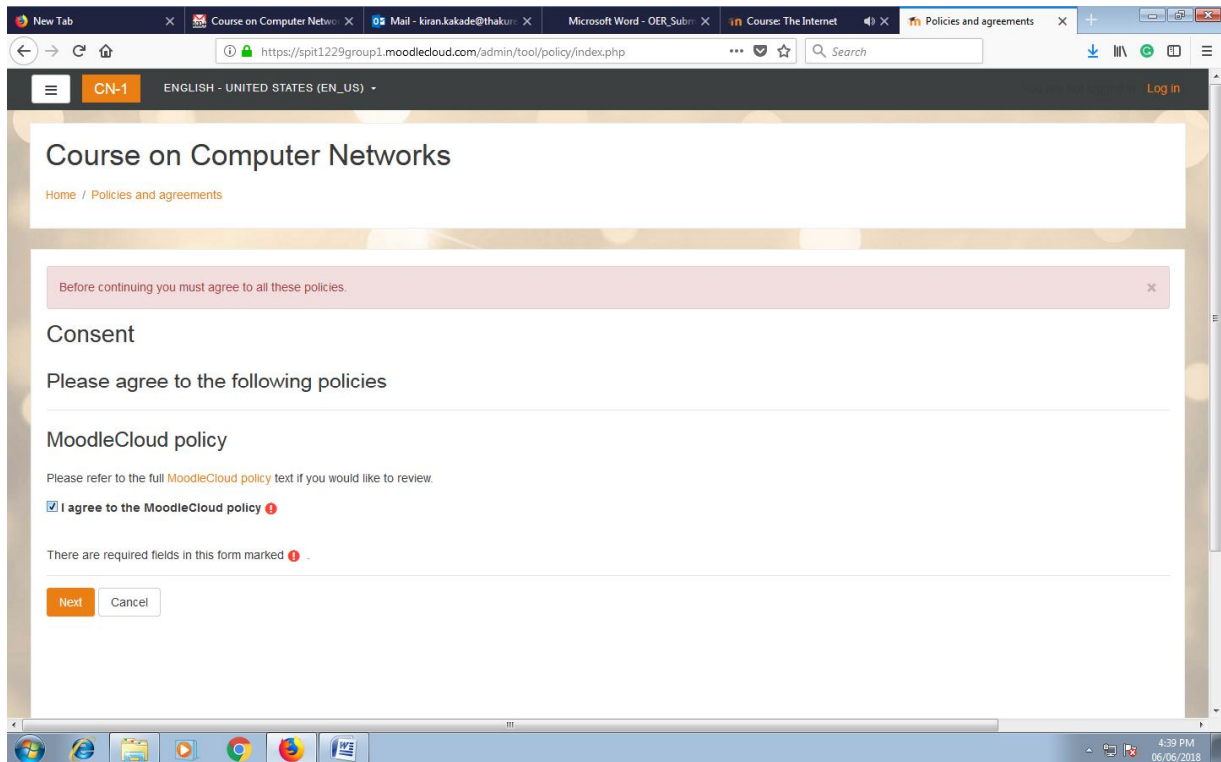
Step1: Click on link or paste it in browser. The following screen will appear.



Step 2: Click on Create New Account button and click on Next button as shown in following screen.



Step 3: Check the box of Agree the Moodle Cloud Policy and click on next.



Step 4: Fill the following form for registration of the course.

Course on Computer Networks

New account

Choose your username and password

Username

Password

More details

Email address

Email (again)

First name

Last name

City/town

Country

There are required fields in this form marked [red error icon].

Step 5: The above screen shows the link for course registration is send to the registered email-id.

Course on Computer Networks

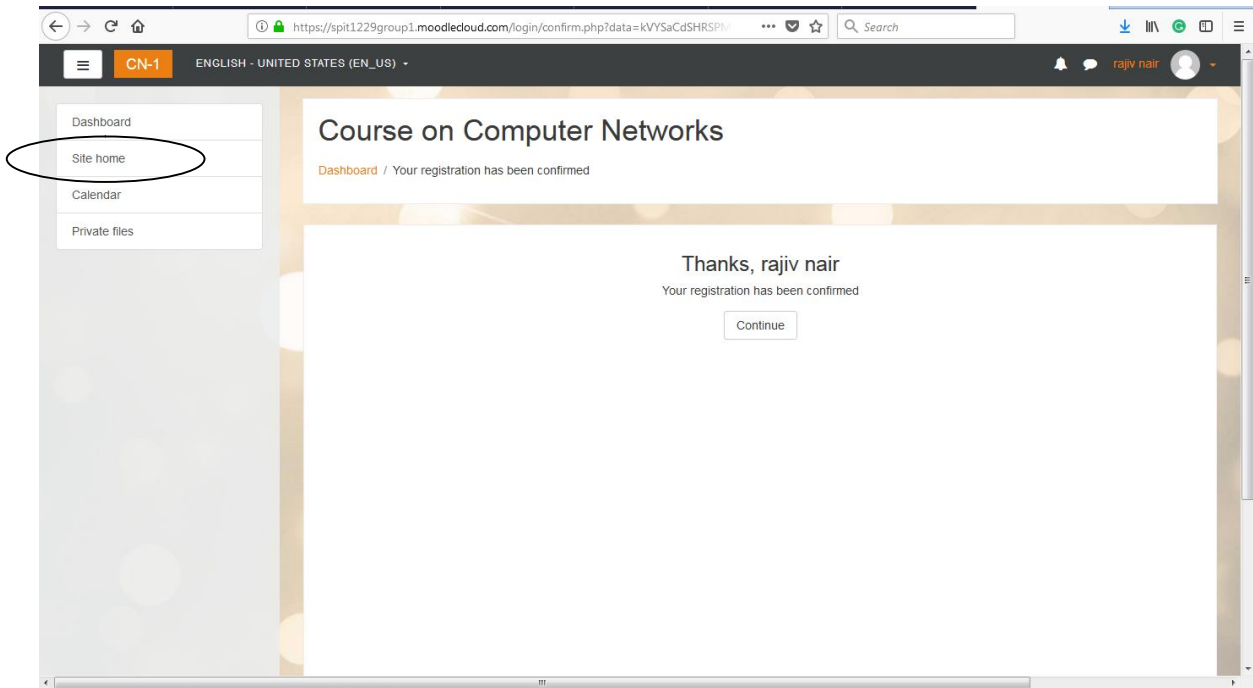
Home / Confirm your account

An email should have been sent to your address at kiran.kakade@thakureducation.org

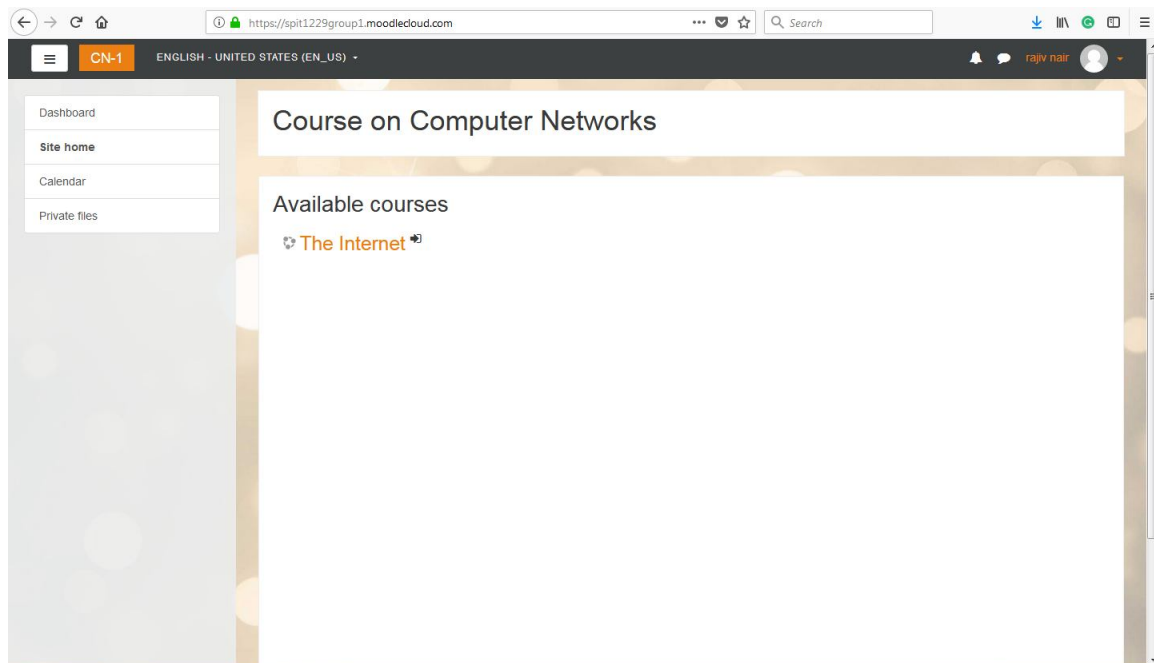
It contains easy instructions to complete your registration.

If you continue to have difficulty, contact the site administrator.

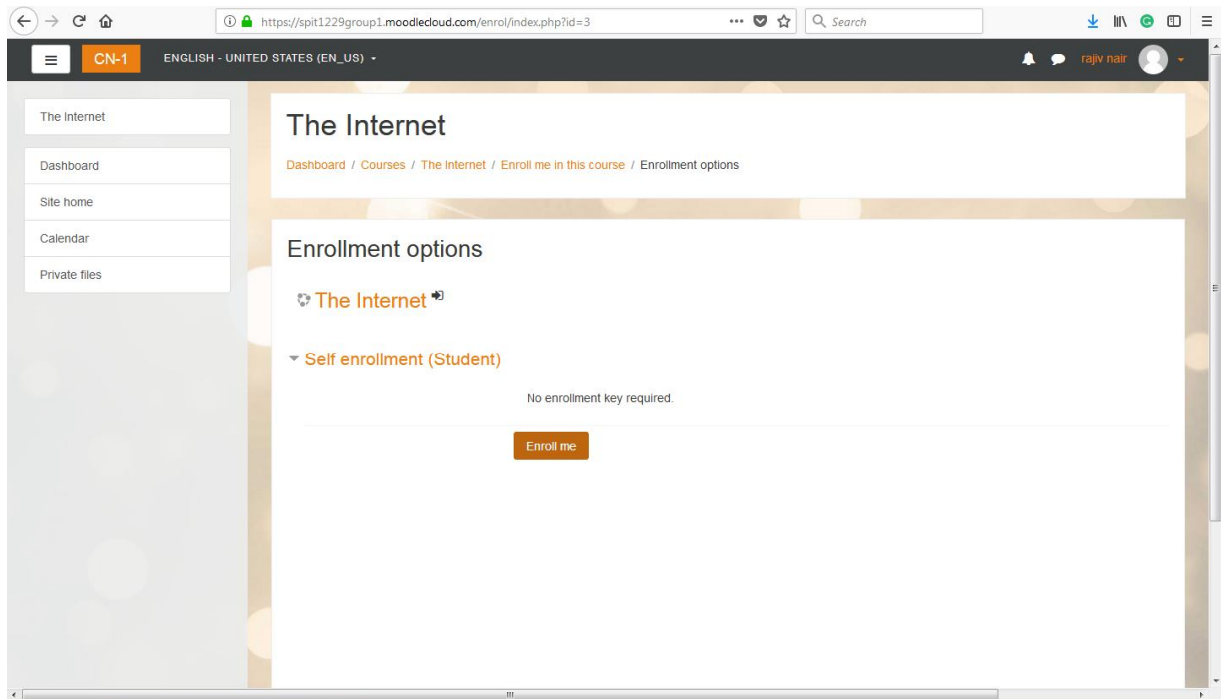
Step 6: Home screen for student login. Click on Continue button.



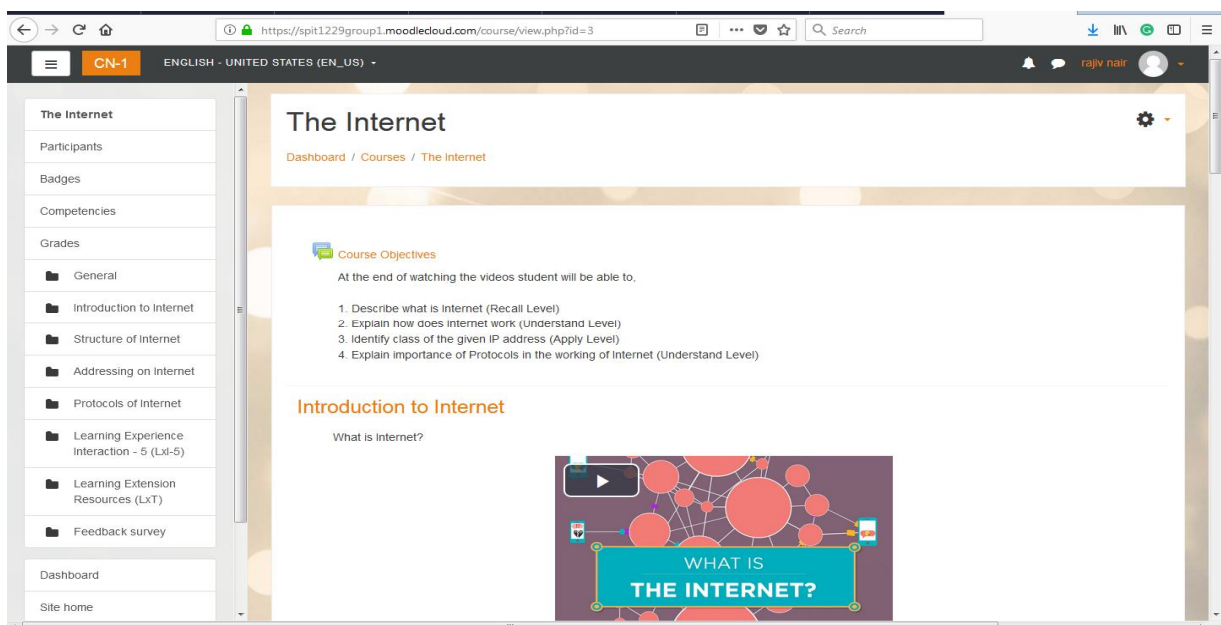
Step 7: Click on [Site Home option](#) on right side of the screen. Following screen will appear with the course details.



Step 8: Click on the course title. Following screen will appear giving full access of the course.



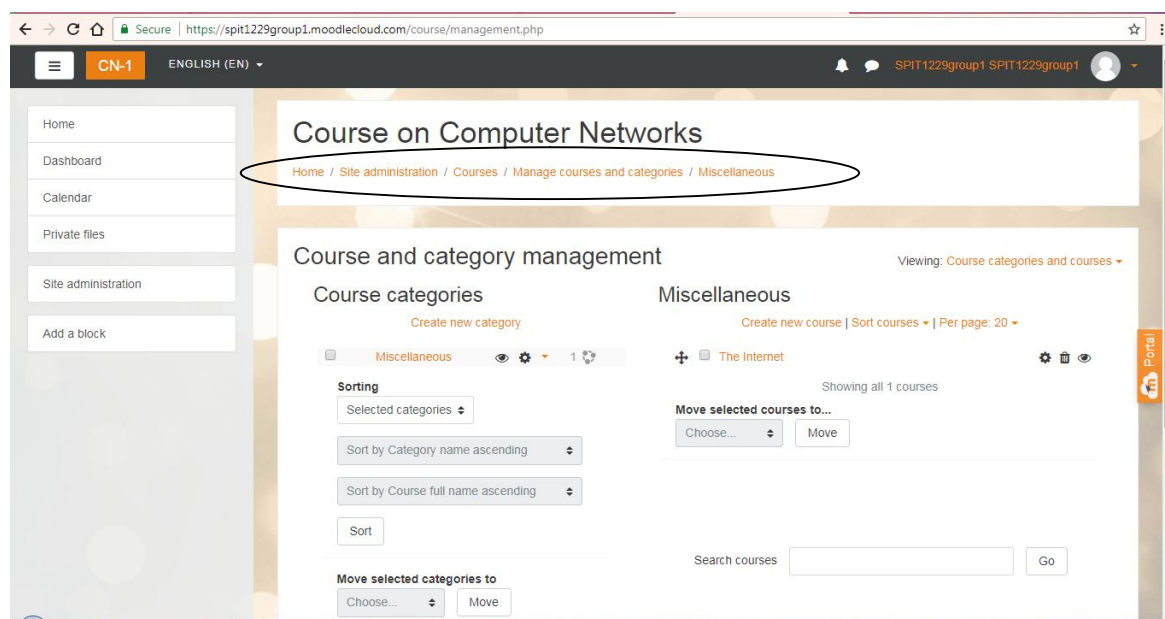
Step 9: Click on Enroll me. Learner will get enroll for the course and following screen will appear on desktop.




Various Aspects of OER

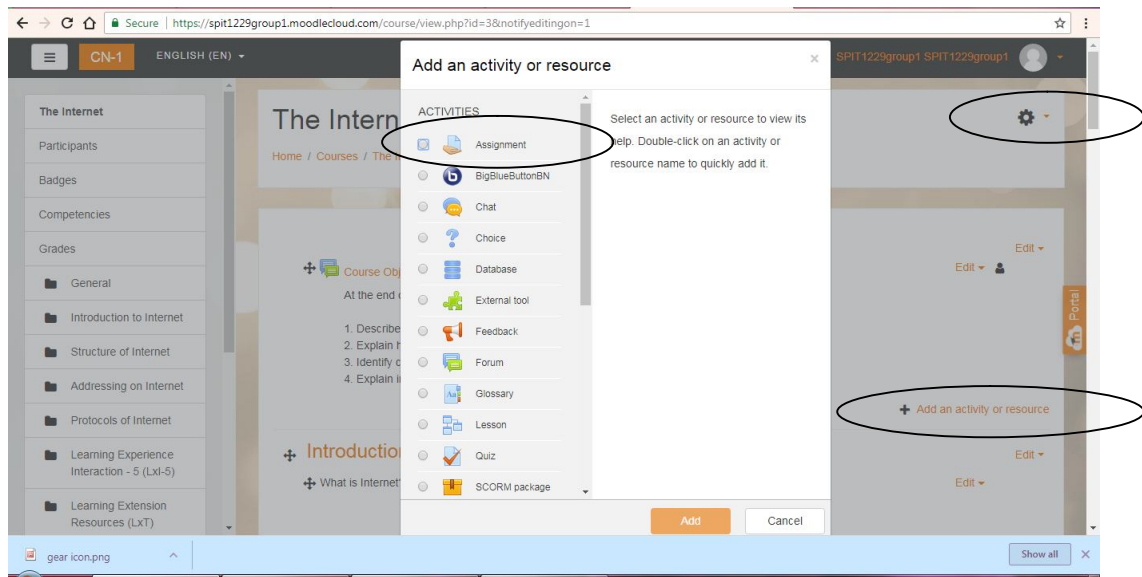
To create this flipped classroom activity, it is required to add lessons to the course. Following steps can be used to add lessons and activities to the course.

Step1: Use encircled path to access the 'create new course' option. You can add new lessons to the course from here.




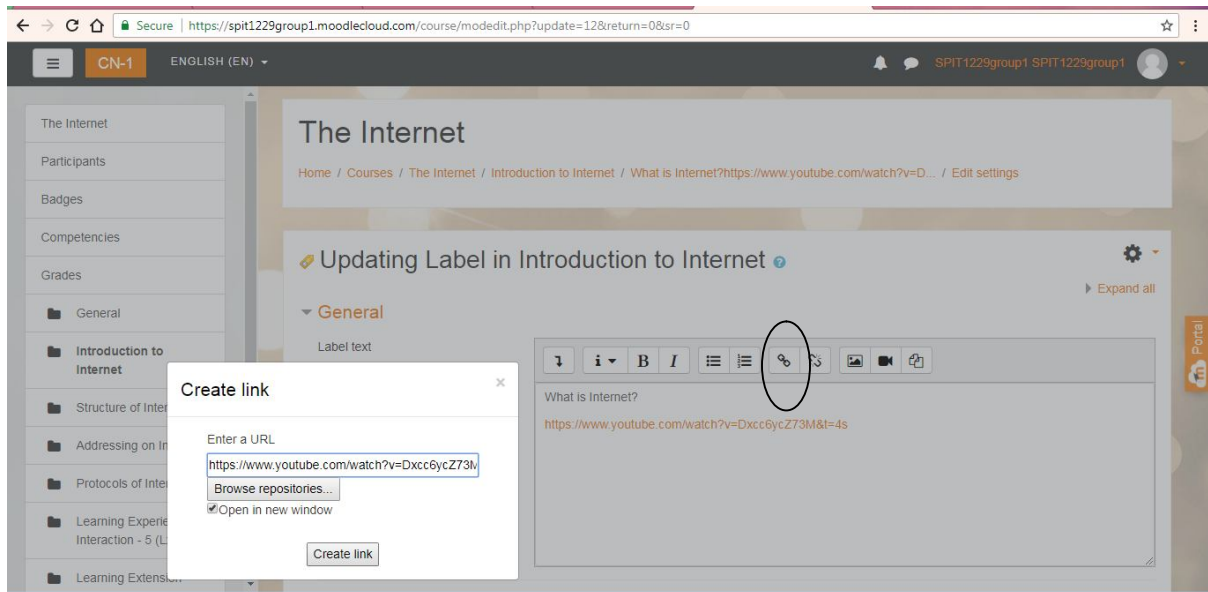
Step 2: Adding Course Information/ Objectives/Overview

1. Select newly created course.
2. Turn editing on (right-hand side top corner )
3. Add an Activity or resource (right hand side bottom corner + icon)
4. Select Assignment.





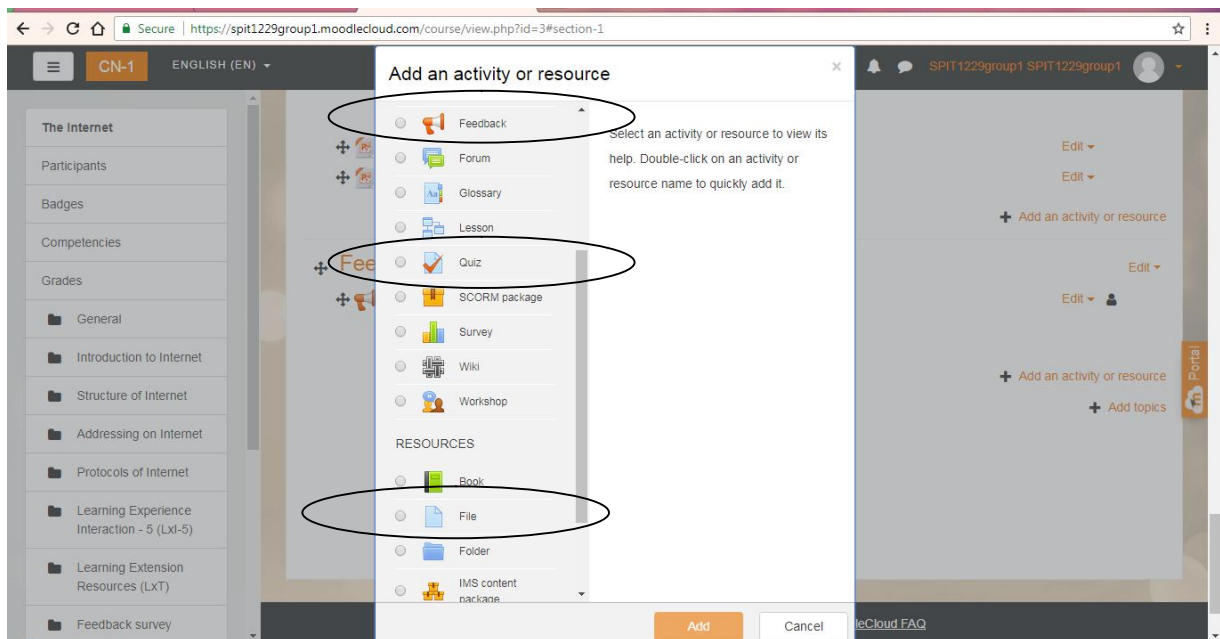
Step 3: Adding Media Contents

1. Select newly created course.
2. Turn editing on (right-hand side top corner )
3. Add topics/lectures depending on your course needs.
4. Select any topic/lecture where you want to add an activity and click on 'Add an activity or resource' (right hand side bottom corner + icon)
5. Select Label
6. In Label text, select Link. Copy your resource video URL and create link.



Step 4: Adding Quiz/Discussion Forum/Feedback

1. Select the course.
2. Turn editing on (right-hand side top corner  icon)
3. Select any topic/lecture where you want to add an activity and click on 'Add an activity or resource' (right hand side bottom corner  icon)
4. Select required activity or resource from the list.



How to use OER (Screen-cast Video)

As a Learner:

A screen cast video is provided in the starting of the course to aid learners navigate this course. The video is available under creative commons license at following link:

<https://youtu.be/ykm-AZPS8mE>

As a Facilitator:

Any faculty, who wants to use this course, needs to execute following steps.

Step 1: Ensure that you have admin permissions of your Moodle course. It is mandatory for importing any course in your own Moodle site. In case you are using a private MOODLE server, you may ask your administrator to restore the backup course in your course page.

Step 2: Please download the backup of this course from following link. (File name: OER Backup) <https://minalopes.wordpress.com/2018/06/07/oer-activity/>

Step3: Watch following video created by our fellow colleague under creative commons. This will guide you to import courses into your Moodle course.

<https://youtu.be/wfGnWWYfSd8>

Best Practices with this Lesson Activity

Few best practices on using this Lesson Activity in the classroom:

1. Provide this activity at least 1 week in advance.
2. Provide minor incentive (marks) for completion of the activity.
3. Ensure that there is a concrete output at the end of out-of-class activity to ensure learners are interested.
4. It would be good if the screencasts and resources are available in the MOODLE course itself. This will take care of common cribs related to “website not available”, “resources not accessible” etc.

Section IV

Evaluation of Effectiveness of OER

The OER effectiveness can be assessed at two levels:

1. at the student level
2. at the consumer level

Effectiveness at the student level

Effectiveness at the student level involves metrics related to student access of the resource and student learning. The Moodle lesson report can be used to evaluate this effectiveness, with the report showing the total number of students who accessed the reports (along with time) and their marks (based on their answers to MCQs). Additionally there is an option for teacher to grade essays and these marks also will be calculated if needed.

Student feedback survey is also implemented with following questions.

1. With how many peers did you interacted?
2. Did the Course content and activities contributed towards enhancing your knowledge?
3. Suggestions/ Improvements (essay question)
4. What according to you are the best practices of this course? (essay question)

Effectiveness at consumer level

OER consumers are typically faculties who want their students to learn 'Basics of Internet'. Linking a survey on three main constructs – Ease of Use, Concept Coverage and Concept Complexity, can help in identifying the effectiveness of this OER at consumer level. This has to be done as a follow-up activity.

Implementing Survey

Every user who downloads this resource will be asked to download the feedback form and email it on the prescribed email address. The feedback form is available at:

<https://minallopes.wordpress.com/2018/06/07/oer-activity/>

Download 'OER Consumer Feedback' from this link.

Section V

Consolidated log of Teamwork

The consolidated log of team work is as shown below:

Activity	Team Member	Amount of Time
Discussion on Topic	Ms. Minal Lopes	1 Hour
	Dr. Kiran Kakade	1 Hour
Tool Exploration	Ms. Minal Lopes	2 Hours
	Dr. Kiran Kakade	2 Hours
Planning for Moodle course on 'The Internet'	Ms. Minal Lopes	2 Hours
	Dr. Kiran Kakade	2 Hours
OER Creation on 'The Internet'	Ms. Minal Lopes	6 Hours
	Dr. Kiran Kakade	6 Hours
OER documentation	Ms. Minal Lopes	8 Hours
	Dr. Kiran Kakade	8 Hours
OER Evaluation	Ms. Minal Lopes	3 Hours
	Dr. Kiran Kakade	3 Hours

Section VI

Building Community with OERs

Possible Sources for Community Building

Some of the viable sources for building a community are:

1. Teachers who are using MOODLE
2. Teachers who plan to use Flipped Classroom Strategies

Plans for Community Building

The resource is already available in the webpage (<https://spit1229group1.moodlecloud.com/login/index.php>) and word press site (<https://minallopes.wordpress.com/2018/06/07/oer-acitivity>) and its access require the users to provide their email id. Thus there will be a list of interested users whom we can follow up using Email. All the interested users can then be connected using a local word press or Moodle website.

Works Cited

- [1]. <https://moodlecloud.com/>
- [2]. <http://camstudio.org/>
- [3]. https://docs.moodle.org/35/en/Main_page/
- [4]. https://en.wikipedia.org/wiki/Open_educational_resources