Class cursa

Created on Oct 27, 2012

Author: John Roche

The cursa class the main script of the cursa application It is a facade between the cursa application and the UI layer. The cursa class should be called to implement domain logic. Domain classes should not be called directly

```
class cursa. Cursa
    Bases: object
    build(path, courseinfo)
    push(path, courseinfo)
    scaffold(config)
```

Class module

Created on Jan 16, 2013

Author: John Roche

class dom.module.Module(modulemeta=None)

Bases: object

The Module class is responsible for creating the file structure for a Module and the orchestration of a build of a Module.

A Module consists of a collection of Topics and is responsible for the management of the Topics in the Module.

```
_build_topics()
```

Orchestrates the build of each Topic in the Module.

This involves invoking the build() method of each topic.

Check the documentation for a description of the Topic.build() method

```
_copy_assets()
```

Copy CSS and JavaScript files used in the Module.

The files will be copied to the module assets folder

```
{\tt \_create\_index}()
```

Creates the index.html page that will be the

interface to the module. | This method uses the generate module to create the html page

```
_create_module_dirs(modulename)
```

Create the directories for the Module.

If the path has not been declared the path will be created

Args:

• modulename (str): The name of the module

```
_create_module_yaml_template(modulename, title)
```

Create a YAML file with a template that contains the default Topic structure

Args:

- module(str): The name of the module
- title (str): The title of the module

```
_create_topic_links()
```

Creates a HTML Hypertext link for each topic in the module.

The links will be displayed in the index.html page created in topic. create index().

```
create topic objects()
```

Creates the Topic objects from the meta data which should have been configured in the index.yaml file

Raises:

CursaException

```
push topics()
```

Orchestrates the build of each Topic in the Module.

This involves invoking the build() method of each topic.

Check the documentation for a description of the Topic.build() method

build()

Orchestrates the build of a full Module.

This involves invoking the self.create_topic_objects(), self.build_topics() and self.create_index() methods

Check the documentation for a description of these methods

push()

Orchestrates the build of a full Module.

This involves invoking the self.create_topic_objects(), self.build_topics() and self.create index() methods

Check the documentation for a description of these methods

scaffold(config)

Orchestrates the scaffolding of the Module.

This involves creating the directories for the Module, and creating a sample YAML file for the Module

Args:

 config (dict): config should have the structure:

```
{
'name':
'title':
```

}

o name: The name of the lab

o title: The title of the lab

Class topic

Created on Oct 20, 2012

Author: John Roche

class dom.topic. Topic(topicmeta=None)

Bases: object

The Topic class is responsible for creating the file structure for the topic and the orchestration of a build of a Topic

A Topic consists of a collection of Labs and is responsible for the management of the Labs in the TOPIC.

```
{\tt \_build\_labs}()
```

Orchestrates the build of each lab in the Topic.

This involves invoking the build() method of each lab. Check the documentation for a description of the Lab.build() method

Each lab object has the lab.src attribute set to point to the first html page in lab

```
_clean()
```

Delete any files from a previous build of the lab

```
_copy_assets()
```

Copy CSS and JavaScript files used in the Topic.

The files will be copied to the assets subfolder

of the Topic HTML folder.

```
_copy_pres_assets()
```

Copy CSS and JavaScript files used in the HTML presentations The files will be copied to the assets subfolder

of the presentation HTML folder.

```
create index()
```

Creates the index.html page that will be the

interface to the topic. | This method uses the generate module to create the html page

```
_create_lab_objects()
```

Creates the Lab objects from the meta data which should have been configured in the index.yaml file for this topic.

Raises:

CursaException

```
create pres info()
   Creates a Markdown string that has the links
   to the HTML presentation and the PDF presentation
   Returns:
        String containing Markdown links to the HTML presentations and the PDF
       presentations or an empty string if there are no presentations in the topic
create topic dirs(modulename, topicname, rich)
   Create the directories for the topic.
create topic md()
   Creates the index.md file that will be used
   to generate the index.html interface to the Topic | This method uses the generate
   module to create the html page
_create_topic_yaml_template(module, topic, title)
   Create a YAML file with a template that contains the default Topic structure
   Args:

    module(str): The name of the module

    topic (str): The name of the topic

           • title (str): The title of the Topic
get pres css assets()
   Creates a List of the CSS assets needed for a
   presentation
   Returns:
       List of CSS assets
_get_pres_js assets()
   Creates a List of the Javascript assets needed for a
   presentation
   Returns:
       List of Javascript assets
pres text(pres_meta)
   Creates a PDF presentation of the markdown input
   This method uses the generate module to create the PDF presentation
```

• pres meta (dict): Contains the meta data to create the

Args:

presentation text

presentation()

Creates a HTML presentation of the markdown input
This method uses the generate module to create the presentation

push index()

Sends the Topic outline to Moodle.

The outline is sent as a label resource.

The label content is specified the Topic index.md file

_push_labs()

Orchestrates the push of each lab in the Topic.

This involves invoking the push() method of each lab.

Check the documentation for a description of the Lab.push() method

_push_pdf_presentation(pres)

Sends a PDF presentation as a resource to Moodle

_push_presentation(pres)

Sends a HTML presentation as a resource to Moodle

_scaffold_labs()

Orchestrates the scaffolding of each lab in the Topic.

This involves invoking the scaffold() method of each lab.

Check the documentation for a description of the Lab.scaffold() method

build()

Orchestrates the build of a full Topic.

This involves invoking the self. create lab objects(),

self._build_labs(), self._create_index() and self._presentation methods Check the documentation for a description of these methods

push()

Sends the Topic to a Moodle LMS using a Web service.

The HTML presentation, the PDF version of the presentation and all the labs are sent.

To use this functionality the clarity plugin for Moodle must be installed in your Moodle site

Raises:

ValueError

scaffold(config)

Orchestrates the scaffolding of the Topic.

This involves creating the directories for the Topic, and creating a sample YAML file for the Topic

Args:

• config (dict): config should have the structure:

- o name: The name of the lab
- o title: The title of the lab
- o module: Which module the lab belongs to
- rich: Whether the topic index.html will have images and multimedia content

Class Lab

Created on Oct 20, 2012

Author: John Roche

class dom.lab. Lab(labmeta=None)

Bases: object

The Lab class is responsible for creating the file structure for a Lab and the orchestration of a build of a Lab.

A Lab consists of a collection of Steps and is responsible for the management of the Steps in the Lab.

```
_build_steps(css)
```

Builds each step in the lab.

The outcome of a call to this method should result in HTML output from the Markdown files

Args:

• css (list): The css to use in the step

```
_{\tt clean()}
```

Delete any files from a previous build of the lab

```
_copy_assets()
```

Copy CSS and JavaScript files used in the Lab. The files will be copied to the assets subfolder

of the Lab HTML folder.

```
_copy_steps_to_path(path)
```

Copies all the steps in the lab to a new path, along with all CSS,

JS, archives, and images

```
_create_lab_dirs(modulename, topicname, labname)
```

Create the directories for the Lab.

If the path has not been declared the path will be created

Args:

- modulename (str): The name of the module
- topicname (str): The name of the topic
- labname (str): The name of the lab

```
_create_lab_info()
```

Creates the lab info

Returns (dict):

Lab info containing:

- Markdown from the first step
- Markdown link to the first step
- Markdown link to the pdf

_create_lab_yaml_template(module, topic, lab, title)

Create a YAML file with a template that contains the default Lab structure

Args:

- module(str): The name of the module
- topic (str): The name of the topic
- lab (str): The name of the lab
- title (str): The title of the lab

_create_md_templates()

Create sample markdown files for the Lab.

Files will contain the default template used.

The markdown files will take the names - Exercises.md - Objectives.md - RENAME-STEP.md

and will be stored in the md folder of the Lab directory structure

_create_nav_bar()

Creates the HTML Navigation Bar for the Lab. Polls each Step in the Lab for the step list element.

Returns:

String representation of the Navigation Bar or empty string on fail

${\tt _create_steps}()$

Creates the Step objects

```
_create_text(css)
```

Creates a PDF file that contains the combined content

of all the steps in a lab | This method uses the generate module to create the PDF file

_get_mdfile_names()

Gathers markdown files in the md directory and uses the meta data from the files to create the Step meta data

Note: Method only to be used when creating output using the prefix approach.

Returns:

List (String) containing the markdown file names in the md folder of this lab

moodleify lab(path)

Configures each step in the Lab for being pushed to Moodle

This involves changing local navigation links to navigation links that will work in the Moodle environment

The moodlyify() method of each step in the lab is invoked

Check the documentation for a description of this method

$_{ t pushlabel}()$

Sends the label resource to Moodle for this lab

The label is usually the first step in the lab - the objectives.md - which outlines the lab

Raises:

CursaException

pushpdf()

Sends the PDF version of this lab as a resource to Moodle

_pushsteps()

Sends the steps (HTML) version of this lab as a resource to Moodle

including all accompanying files

build()

Orchestrates the build of the Lab.

This involves invoking the self._create_steps(), and self._build_steps() methods Check the documentation for a description of these methods

Returns (dict):

Lab info containing:

- Markdown from the first step
- Markdown link to the first step
- Markdown link to the pdf

push()

Sends the lab to a Moodle LMS using a Web service.

The lab is sent as three resources.

The HTML steps, the PDF and a Label consisting of the objectives Markdown.

To use this functionality the clarity plugin for Moodle must be installed in your Moodle site

Raises:

ValueError

scaffold(config)

Orchestrates the scaffolding of the Lab.

This involves creating the directories for the Lab, creating sample markdown files for

the Lab and creating a sample YAML file for the Lab

Args:

 config (dict): config should have the structure:

o name: The name of the lab

• title: The title of the lab

o module: Which module the lab belongs to

• topic: Which topic the lab belongs to

Class step

Created on Nov 20, 2012

Author: John Roche

class dom.step. Step(stepmeta=None, filename=None, labpath=None)

Bases: object

The Step Class models a step in a Lab.

A Step object models a Markdown file in the Cursa system.

The Step class is responsible for calling the generator module to create the output format.

```
mark active(navBar)
```

Changes the class name on the this steps list element to active. This will activate CSS in the HTML output.

args:

navBar (String): Contains the Navigation Bar for the Lab

Returns:

String representation of the Navigation Bar with the list element in the navbar marked as active

build(navBar, css)

The build method uses the generator module to produce the HTML output from the Markdown file that this step models

args:

- navBar (String): Contains the Navigation Bar for the Lab
- css (list): The css to use in the step

moodleify(path, topicpath, topic, courseid, sectionid)

Configures the step for being pushed to Moodle

This involves changing local navigation links to navigation links that will work in the Moodle environment

args:

path (str): The base folder of the lab. This is a temp folder being used for preparing the steps

topicpath (str): The topic path of the containing Topic

topic (str): The topic name

courseid (str): The course id number

sectionid (str): The section id number

Module generator

Created on Nov 29, 2012

Author: John Roche

The generator module is a facade between the cursa application and the output generation modules, tools and applications that cursa uses to create the output from the content files

```
dom.generator. create lab html(steps, labpath)
```

Parses the content from each step in the list steps into HTML

and combines the HTML into one String

Args:

- steps (List): Contains the meta data about all steps in the lab
- labpath (str): file path to Lab

Returns:

 (str): Generated HTML from Markdown of the combined steps in the lab

```
dom.generator._create_pdf(args, data)
```

Creates a PDF from a string containing HTML

Args:

- args (List): The list of arguments to the wkhtmltopdf application
- data (str): The HTML string

```
dom.generator._do_lab_text(labparams)
```

Creates a PDF file that contains the combined content

of all the steps in a lab

Args:

 labparams (dict): labparams should have the structure:

```
{
    'title':
    'steps':
    'labpath':
    'css':
```

```
}
                      o title (str): Name of the PDF file
                      o steps (List): Contains the meta data about all steps in
                             the lab

    labpath (str): file path to Lab

                      o css (List): List of CSS assets for the lab
dom.generator. do module(moduleparams)
    Creates a HTML file, index.html, that is the
    interface to the module.
    Args:
            • moduleparams (dict): moduleparams should have the structure:
                          {
                               'title':
                               'modulepath':
                               'topiclinks':
                          }
                        o title: Title of the module

    modulepath: Path to Module

    topiclinks: Hypertext links to each topic in the

                               module
dom.generator._do_pres(topicparams)
    Creates a HTML presentation
    Args:
            • topicparams (dict): topicparams should have the structure:
                          {
                               'title':
                               'content':
                               'prespath':
                               'css':
                          }

    title of the topic

    content: The content file name

    prespath: Path to presentations folder

    css: The CSS for the presentation
```

```
dom.generator._do_pres_text(topicparams)
    Creates a PDF version of a HTML presentation
    Args:
            • topicparams (dict): topicparams should have the structure:
                          {
                               'title':
                               'content':
                               'prespath'
                          }

    title of the topic

                        o content: The content file name

    prespath: Path to presentations folder

    css: The CSS for the presentation text

dom.generator._do_step(stepparams)
    Creates a HTML file that contains the content
    stored in the Markdown file
    Args:

    stepparams (dict): stepparams should have the

                         structure:
                                   'title':
                                   'labpath':
                                   'navbar':
                                   'css':
                               }

    title: Name of Markdown file

    labpath: Path to Lab containing step

    navbar: Navigation bar for the Lab

                      o css: The css for the step
dom.generator. do topic(topicparams)
    Creates a HTML file - index.html - that is the
    interface to the topic.
    Args:

    topicparams (dict): topicparams should have the structure:

                          {
                               'title':
```

```
'content':
'topicpath':
'topicinfo':
}

title: Title of the topic,

content: The content file name,

topicpath: Path to topic,

topicinfo: markdown with info about the labs and presenations in the topic
```

```
dom.generator._generate_html(content)
```

Generates a HTML string from a Markdown string

Args:

• content (Unicode str): Markdown content

Returns:

• (Unicode str): HTML form of the Markdown content

```
dom.generator._make_imageurls_absolute(content, labpath)
```

Changes any Markdown image syntax with a relative src

to an absolute src

Note:

e.g.

will be replaced with

Args:

content (str): The Markdown content

Returns:

• (str): The content with img src set to absolute path

```
dom.generator._parse_markdown(md_location)
```

Parses Markdown that will be converted to HTML

Args:

 md_location (str): File name with file path to location of the Markdown file

Returns:

• (str): Generated HTML from Markdown

```
dom.generator. parse pres markdown (md)
```

Parses Markdown that will be converted to a HTML Presentation

Note:

Cursa Presentation Markdown has new syntax delimiting the start and end of a presentation slide.

The new delimiting syntax is 3 equal signs, e.g. ===

```
##Standard Markdown here
```

===

Equal signs are replaced with HTML section tags, e.g.

```
<section class="slide">
```

<h2>Standard Markdown here</h2>

</section>

Args:

• md (str): The markdown content

Returns:

• (str): Generated HTML from Markdown

```
dom.generator._remove_output_dest(output_dest)
```

Remove the file at the path

```
dom.generator._untar_macosx_directory()
```

Before a call to wkhtmltopdf on OSX can be made,

some dependencies need to be extracted from archive. | This is becuse Pylnstaller does not allow directories to be bundled

into the executable so an archive of the directory was bundled

```
dom.generator._write_view_to_file(file_to_create, data)
```

Creates a file and writes data to that file.

This function uses codecs.open() and ensures unicode compatability. | data must be a string, not Binary data

Args:

- file to create (str): File name with file path
- data (str): The data to write to the file

Raises:

CursaException

dom.generator.generate(stepparams=None, labparams=None, topicparams=None,
moduleparams=None)

This function is the single public method that the system can use to interact the output generation modules.

generate will decide what action to take based on the parameters passed and create the output.

args:

- stepparams (Dict): A dictionary object containing the params for the Step.
- labparams (Dict): A dictionary object containing the params for the Lab.
- topicparams (Dict): A dictionary object containing the
 params for the Topic. topicparams should have a key named
 'category' which indicates which output to create valid entries
 for category are;
 - 'index'
 - 'text'
 - 'pres_text'
 - 'label'
- moduleparams (Dict): A dictionary object containing the params for the Topic.

Module utils

```
Created on Oct 20, 2012
```

Author: John Roche

The utils module contains a set of utility functions used in the system.

```
dom.utils.clean(path)
```

Delete all the files in the directory

Args:

• path (Str): The file path to the directory

Raises:

CursaException

```
dom.utils.clean directories (directories)
```

Delete all the files in the list of directories

Args:

• directories (List): A list containing paths to the directories

```
dom.utils.copy files(fileArray, dest)
```

Creates each file in the filearray to dest

Args:

- fileArray (List): List of files to copy
- dest (str): The destination path to copy the files to

Raises:

CursaException

```
dom.utils.create_course_info(path)
```

Create the course info for a Module, Topic or Lab,

from the given path | The course info defines what Module, Topic or Lab the current course section being built belongs to.

The cursa path convention can be used to compute this info

```
e.g.
```

Given a path;

/cursahome/modulename/topics/topicname/labs/labname

The course info;

{

```
module: modulename, topic: topicname, lab:
                              labname
                          }
                    can be computed from the path
          Args:

    path (str): current working directory

          Returns:
                 • (dict): The course info
dom.utils.create file(filePath)
    utilty function for creating a file.
    args:
        filePath (String):
             String indicating the file path to create.
    Raises:
        CursaException
dom.utils.create files(filePathArray)
    utilty function for creating multiple files.
    args:
        filePathArray (Array):
             String Array containing files paths to create.
    Raises:
        CursaException
dom.utils.create push params(ob, resourcetype, displayname=", mainfile=",
mainfilepath=", labeltext=", labeltextformat=")
    prepares the params for a push to the Moodle web service
    Args:
           • ob (Object): The calling object, Module, Topic or Lab

    resourcetype (str): file or label

           • displayname (str): The name beside the resource in Moodle

    mainfile (str): The file that will be linked to in Moodle

                  This is usually the first step in the lab or the presentation HTML file
           • labeltext (str): The content for the label

    labelformat (str): HTML or markdown
```

Returns:

```
Dict of params
```

```
dom.utils.create yaml template(path, template)
    utilty function for writing YAML template to a file
    args:
        path (str):
            Path to create the YAML file
        template (str):
            Template to write to the YAML file
    Raises:
        CursaException
dom.utils.delete files(filelist, path)
    Delete all the filenames in filelist
    Args:
           • filelist (List): List containing the names of the files

    path (Str): The file path to the directory

    Raises:
        CursaException
dom.utils.delete tmpdir and archive(archiveinfo)
    Deletes a temporary directory and an zip archive
    Args:
           • archiveinfo (Dict): Containing the zip path and temporary directory
                  path
dom.utils.gather file names(path)
    Gather all the file names in the given path directory
    Args:
           • path (str): The file path to the directory
    Returns:

    (List): List of file names

dom.utils.get css assets(extra_css=None)
    Creates a List of the basic CSS assets needed in a HTML page
    Args:

    extra_css (List): List of extra css to add to the page
```

List of CSS assets

Returns:

```
dom.utils.get img assets(extra_css)
dom.utils.get js assets()
    Creates a List of the basic CSS assets needed in a HTML page
    Returns:
        List of Javascript assets
dom.utils. log(msg)
    Stub message for logging
    Prints to stdout for now
    Args:

    msg (str): A string to print to the user interface

dom.utils.make dir(directory)
    utilty function for creating a directory
    args:
        directory (String):
            String indicating the directory path to create.
    Raises:
        CursaException
dom.utils.make dirs(directoryArray)
    utilty function for creating multiple directories
    args:
        directoryArray (Array):
            String Array containing the directory paths to create.
    Raises:
        CursaException
dom.utils.make_tmpdir with archive(path)
    Creates a temporary directory and an zip archive of the temporary directory
    Args:

    path (str): The file path to the directory

    Returns:

    (Dict): Containing the zip path and temporary directory path

dom.utils.read data from file(file_location)
```

Reads data from a file.

This function uses codecs open() and ensures unicode

This function uses codecs.open() and ensures unicode compatability. | Function will only read from text files

```
Args:
    • file_location (str): File name with file path

Returns:
    • (str): The data from the file

Raises:
    CursaException

dom.utils.write_to_file(path, data)
    utilty function for creating a file and writing data to the file

args:
    path (str):
    Path to create the file

data (str):
    Data to write to the YAML file

Raises:
    CursaException
```

Class Build

Created on 18 Jan 2013

Author: John Roche

class ui.build. Build

Bases: object

The Build class is an implementation of a command line interface command in the cursa application.

A command class is responsible for defining the command e.g. which switches and arguments the command can receive from the command line interface.

As a command class it has implemented a static setup(namespace) method and a call(namespace) method. The call(namespace) method must implement the functionality of the command from the command line interface.

The class attributes title (str) and help (str) must also be implemented

call(namespace)

Implements the functionality of the command from the command line interface. This is the public method that the CommandLine class invokes when instructed to perform a command.

help = 'Build from YAML file'

classmethod setup(command parser)

Defines the command. This method should define which switches and arguments the command can receive from the command line interface Registers the class with the CommandLine class by setting an attribute in the namespace returned from the parse_args method.

title = 'build'

Class CommandLine

Created on 14 Jan 2013

Author: John Roche

class ui.cli. CommandLine(namespace=None, args=None)

Bases: object

The CommandLine class is the class that controls the command line interface which the user interacts with when using the cursa application.

Each command is modelled as a separate class in the cursa application.

The CommandLine class is responsible for registering each command class with the command line instruction and for invoking the call() method of each command class when called from the command line interface.

Each command class must implement a static setup(namespace) method and a call(namespace) method.

do command(namespace)

Invokes the call(namespace) method of the class responsible for handling the command. The call(namespace) method should implement the required actions for the command.

args:

namespace (object): namespace object containing the information about the command entered at the command line interface. The command attribute contains the class that is responsible for managing that command.

_setup_commands()

Registers the command classes with the command line object. Invokes the setup static method of each command class passing a parser object as an argument. The command class can use the parser object to define the command and command arguments.

commands = [<class 'ui.build.Build'>, <class 'ui.scaffold.Scaffold'>, <class
'ui.push.Push'>]

Class Push

Created on 11 Apr 2013

Author: John Roche

class ui.push. Push

Bases: object

The Push class is an implementation of a command line interface command in the cursa application.

As a command class it has implemented a static setup(namespace) method and a call(namespace) method. The call(namespace) method must implement the functionality of the command from the command line interface.

As a command class it has implemented a static setup(namespace) method and a call(namespace) method.

The class attributes title (str) and help (str) must also be implemented

call(namespace)

Implements the functionality of the command from the command line interface. This is the public method that the CommandLine class invokes when instructed to perform a command.

help = 'Push a Lab, Topic, or Module to Moodle'

classmethod setup(command_parser)

Defines the command. This method should define which switches and arguments the command can receive from the command line interface Registers the class with the CommandLine class by setting an attribute in the namespace returned from the parse_args method.

title = 'push'

Class Scaffold

Created on 19 Jan 2013

Author: John Roche

class ui.scaffold. Scaffold

Bases: object

The Scaffold class is an implementation of a command line interface command in the cursa application.

As a command class it has implemented a static setup(namespace) method and a call(namespace) method. The call(namespace) method must implement the functionality of the command from the command line interface.

As a command class it has implemented a static setup(namespace) method and a call(namespace) method.

The class attributes title (str) and help (str) must also be implemented

call(namespace)

Implements the functionality of the command from the command line interface. This is the public method that the CommandLine class invokes when instructed to perform a command.

help = 'Create file structure and templates\n for the specified module, topic or lab'

classmethod setup(command parser)

Defines the command. This method should define which switches and arguments the command can receive from the command line interface Registers the class with the CommandLine class by setting an attribute in the namespace returned from the parse_args method.

title = 'scaffold'

Module view

Created on 2 Feb 2013

```
Author: John Roche
dom.view. create bottom()
dom.view._create_content(content)
dom.view. create step text bottom()
dom.view. create top(title)
dom.view. modulecss()
dom.view._modulejs()
dom.view._pres_text view(sections, css)
dom.view. pres view(title, content, css)
dom.view._step_text_css(CSS)
dom.view._step_text_js()
dom.view._stepcss(CSS)
dom.view._stepjs()
dom.view. topiccss()
dom.view._topicjs()
dom.view.get lab text view(content, css)
dom.view.get module view(title, content)
dom.view.get_pres_text_view(sections, css)
dom.view.get pres view(title, content, css)
dom.view.get_step_view(title, content, navbar, css)
```

dom.view.get topic view(title, content)

Class WebServiceClient

CursaException

```
Created on 11 Apr 2013
Author: John Roche
class dom.webserviceclient. WebServiceClient
    Bases: object
    classdocs
    moodleaddress = 'http://127.0.0.1:8080/moodle/'
    send resource(webservice params, filepath=None)
        Sends a resource to Moodle.
        This function uses the custom clarity plugin
        Args:
               webservice_params (dict):
                  {
                            'courseid': The course id,
                            'sectionid': The section id,
                            'type': file, label,
                            'displayname': The name beside the resource,
                            'mainfile': The main file. To be used with folder to
                            create lab or presentation,
                            'mainfilepath': The path to the main file from the root
                            of the folder. Must start and end with /,
                            'labeltext': The label text,
                            'labeltextformat': The label text format, markdown or
                            html,
                      }
        Raises:
```