## 1.1 Company Profile

### About Harbinger Group

Founded in 1990, the Harbinger Group is a global provider of software products and services. The Harbinger mission is to enhance business performance through learning technology. The two group companies are Harbinger Knowledge Products and Harbinger Systems.

Harbinger Group has made it to the top twenty lists of Specialized Learning Process Providers brought out by TrainingOutsourcing.com, a leading analyst in business strategies for learning, based in Cary, North Carolina, USA.

- **Harbinger Knowledge Products**

It is the creator of Elicitus, the globally benchmarked, award-wining rapid authoring tool and Raptivity, the world's first

rapid interactivity builder, which is based on a patent-pending technology.

The company also provides custom e-learning design and development services to clients worldwide. It offers consulting services to help clients select optimal packages of learning tools and products.

The Harbinger Knowledge Products team consists of subject experts, instructional designers, writers, graphic artists, animators and programmers who have the experience and expertise to meet e-learning demands from across the world.

The hundred-plus satisfied global clients in over twenty-two countries stand testimony to the team's professional ability.

The Harbinger philosophy is to create value for its clients through a culture of continuous learning, respect for the individual, and innovation.

## Raptivity

Raptivity, the world's first rapid interactivity builder, helps you create true learning outcomes with meaningful interactivity.

The Raptivity library of pre-build interactions is based on best practices in instructional design and allows complete customization of each interaction.

Raptivity outputs your interactivity to a single Html file, which fits right into your e-learning tool.

Raptivity tracks completion status, score and responses and provides this information to authoring tools for SCORM/AICC tracking with LMS.

Anyone can use Raptivity with minimal learning and absolutely no programming.

- **Raptivity awards:**

Raptivity wins 2012 Readers' Choice Awards.
Raptivity Wins Platinum and Gold Awards at LearnX 2011.
Raptivity among Software Satisfaction Awards 2011 Finalists

## 1.2 Existing System & Need for System

Traditional teaching methods may be also deemed restricted to some degree. Traditionally, classroom settings are teacher-centered where the teacher often talks at the students instead of encouraging them to interact, ask questions or make them understand the lesson thoroughly. Most classes involve rote learning, where students depend on memorization without having a complete understanding of the subject. Just by passing the tests, consisting of descriptions, matching and other forms of indicators are all that matter to complete the curriculum. Long lectures and dictations, rote memorization and little interaction in the classroom often leave students less attentive and less engaged. They are prone to skipping classes and missing lessons altogether. Moreover, students in a traditional class have little opportunity to interact with their classmates or their teacher.

In the Traditional Educational System, distance learning is not possible. Similarly, typical teaching methodology is not much audio-visual, so memory retention of information is less. Here comes the idea of Rapid Interactive Learning initiated by

Harbinger Group. Where the information is placed in front of learner in the form of different interactivity modules through which retention of information is more and learner can enjoy the content.

## 1.3 Scope of Work

In technological parlance, the term 'progress' is associated with technical and scientific advancement, or anything, which enhances the comfort level, provided by the product. Raptivity has made tremendous progress today.

Raptivity being a product has periodic releases and fortunately we got the chance to work on a module of Raptivity.

For this proposed system, we have usedActionscript to develop the Interactivity Modules in Flash .We can also see this output in different browsers. Similarly, “HTML5” technology is supported in major browsers, The learner can see the output onIOS devices such as IPhone and IPad.

## 1.4 Operating Environment

### Hardware requirements:

- Intel Pentium III Processor or higher
- 512 MB RAM or higher
- 200 MB free hard disk space
- 256-color monitor or better
- Mouse or compatible pointing device
- CD-ROM or DVD-ROM drive

### Software Requirements:

- Visual studio 2005 or above
- Flash Player 8 or above.
- Microsoft Windows 7 / Vista / Windows XP / Windows 2000.

## 1.5 Description of Technologies used

### 1. XML

Xml stands for Extensible Markup Language and is much like HTML.

Xml is used to describe data. Therefore its tags are not predefined, you have to define your own tags.

Converting the data to XML can greatly reduce complexity and create data that can be read by many different types of applications.

In our system Xml is used for creating storing Interaction data.

**(Unicode) Character**

By definition, an XML document is a string of characters. Almost every legal Unicode character may appear in an XML document.

**Tag**

A markup construct that begins with < and ends with >. Tags come in three flavors:

- *start-tags*; for example: <section>
- *end-tags*; for example: </section>
- *empty-element tags*; for example: <line-break />

**Element**

A logical document component either begins with a start-tag and ends with a matching end-tag or consists only of an empty-element tag. The characters between the start- and end-tags, if any, are the element's *content*, and may contain markup, including other elements, which are called *child elements*. An example of an element is <Greeting>Hello, world.</Greeting> (see hello world). Another is <line-break />.

**XML Declaration**

XML documents may begin by declaring some information about themselves, as in the following example:

<?xmlversion="1.0"encoding="UTF-8"?>

## 2. C#.Net

C# (pronounced "C-sharp") is an object-oriented programming language from Microsoft that aims to combine the computing power of C++ with the programming ease of Visual Basic. C# is based on C++ and contains features similar to those of Java.

C# is designed to work with Microsoft's .Net platform. Microsoft's aim is to facilitate the exchange of information and services over the Web, and to enable developers to build highly portable applications. C# simplifies programming through its use of Extensible Markup Language (XML) and Simple Object Access Protocol (SOAP) which allow access to a programming object or method without requiring the programmer to write additional code for each step. Because programmers can build on existing code, rather than repeatedly duplicating it, C# is expected to make it faster and less expensive to get new products and services to market.

## 3. ACTION SCRIPT

**ActionScript** 3 is an object-oriented language originally developed by **Macromedia Inc**. (now owned by Adobe Systems). It is a dialect of ECMAScript(meaning it is a superset of the syntax and semantics of the language more widely known as JavaScript), and is used primarily for the development of websites and software targeting the Adobe Flash Player platform, used on Web pages in the form of embedded SWF files.

The language itself is open-source in that its specification is offered free of charge.

Since the arrival of the Flash Player 9 alpha (in 2006) a newer version of ActionScript has been released, ActionScript 3.0. ActionScript 3.0 is anobject-oriented programming language allowing far more control and code reusability when building complex Flash applications.

Flash libraries can be used with the XML capabilities of the browser to render rich content in the browser.

## Data types

ActionScript primarily consists of "fundamental" or "simple" data types which are used to create other data types. These data types are very similar to Java data types. Since ActionScript 3 was a complete rewrite of ActionScript 2, the data types and their inheritances have changed.

## ActionScript 3 top level data types

- **String** - A list of characters such as "Hello World"
- **Number** - Any Numeric value
- **Boolean** - A simple binary storage that can only be "true" or "false".
- **Object** - Object is the data type all complex data types inherit from. It allows for the grouping of methods, functions, parameters, and other objects.

## ActionScript 3 complex data types

There are additional "complex" data types. These are more processor and memory intensive and consist of many "simple" data types. For AS3, some of these data types are:

- **MovieClip** - An ActionScript creation that allows easy usage of visible objects.
- **TextField** - A simple dynamic or input text field. Inherits the Movieclip type.
- **Button** - A simple button with 4 frames (states): Up, Over, Down and Hit. Inherits the MovieClip type.
- **Date** - Allows access to information about a specific point in time.
- **Array** - Allows linear storage of data.
- **XML** - An XML object
- **XMLNode** - An XML node
- **LoadVars** - A Load Variables object allows for the storing and send of HTTP POST and HTTP GET variables
- **Sound**
- **NetStream**
- **NetConnection**

- **MovieClipLoader**
- **EventListener**

Appeared in- 1998

Designed By- Gary Grossman

Developer- Macromedia (now Adobe systems)

Major Implementations- Adobe Flash, Apache Flex

O.S – Cross-Platform

File extension- .as

## 2.1 Proposed System

In Raptivity, learner can select interactivity, customize it as per his/her need, save it and publish it. The learner will get the flash file (.swf) as published output. In existing system, the learner can view the published output in all desktop browsers.

**MFO (Multiple file output)** creates a specific folder structure with a flash output in the form of html file. Advantage of this output type is end user can locally change images / text if needed but the disadvantage is if in the case some files are deleted then output is not visible properly. User has to republish the output**.** **SFO(single file output)** on the other hands creates only one file integrating all the images / text / naimations. End user cannot change anything locally in this case. Hence using SFO output is better to use. Harbinger systems hold copyright on this SFO publish.

**Electronic learning** (or **e-Learning** or **eLearning**) is a type of Technology supported education/learning (TSL) where the medium of instruction is through computer technology-learning is used interchangeably in a wide variety of contexts .In companies; it refers to the strategies that use the company network to deliver training courses to employees. Lately in most Universities, e-learning is used to define a specific mode to attend a course or programs of study where the students rarely, if ever, attend face-to-face for on-campus access to educational facilities, because they study online.

## Features of Raptivity 7.5-

- Single flash file output- after customization of interactivity, all the customized images, audio and other assets are merged into a single swf file.
- Multiple File output- one HTML file is created along with all the required assets.

## 2.2 Objective of System

- There is a need to give an alternative to traditional classroom teaching which will provide audio-visual learning which is easy to memorize.
- Provide distance learning.
- Create interactions quickly and easily.
- Develop interactions that can play on various devices – desktops, laptops, tablets and smart phones.
- Track learners' performance of Interactivity modules.

## 2.3 User Requirements

A Learning Management System (LMS) is a software application for the administration, documentation, tracking, reporting and delivery of education courses or training programs.

LMSs range from systems for managing training and educational records to software for distributing online or blended/hybrid college courses over the Internet with features for online collaboration. Colleges and universities use LMSs to deliver online courses and augment on-campus courses. Corporate training departments use LMSs to deliver online training, as well as automate record-keeping and employee registration.

Users require such a system that can provide some interactive audio-visual representation of data that can be useful for retention purpose as well as that can be embedded in LMS.

An LMS is the infrastructure that delivers and manages instructional content, identifies and assesses individual and organizational learning or training goals, tracks the progress towards meeting those goals, and collects and presents data

for supervising the learning process of organization as a whole. An LMS delivers content but also handles registering for courses, course administration, skills gap analysis, tracking, and reporting.

Most LMSs are Web-based to facilitate access to learning content and administration. They are also used by educational institutions to enhance and support classroom teaching and offering courses to a larger population of learners. LMSs are used by regulated industries (e.g. financial services and biopharma) for compliance training. Student self-service (e.g., self-registration on instructor-led training), training workflow (e.g., user notification, manager approval, wait-list management), the provision of on-line learning (e.g., computer-based training, read & understand), on-line assessment, management of continuous professional education (CPE), collaborative learning (e.g., application sharing, discussion threads), and training resource management (e.g., instructors, facilities, equipment), are all important dimensions of Learning Management Systems.

Some LMS providers include "performance management systems", which encompass employee appraisals, competency management, skills-gap analysis, succession planning, and multi-rater assessments (i.e., 360 degree reviews). Modern techniques now employ competency-based learning to discover learning gaps and guide training material selection.

For the commercial market, some Learning and Performance Management Systems include recruitment and reward functionality.

## Raptivity for E-learning

**Electronic learning** (or **e-Learning** or **eLearning**) is a type of Technology supported education/learning (TSL) where the medium of instruction is through computer technology-learning is used interchangeably in a wide variety of contexts .In companies; it refers to the strategies that use the company network to deliver training courses to employees. Lately in most Universities, e-learning is used to define a specific mode to attend a course or programs of study where the students rarely, if ever, attend face-to-face for on-campus access to educational facilities, because they study online.

## Tracking Support

- You can choose to publish the interactivity with tracking. To publish the interactivity with tracking, you need to select the option '**Publish with tracking**'.
- The information that is tracked is mentioned in the Output Parameters section for the interactivity. For all interactions, the completion status is tracked. For some of the interactions, score and results are tracked.

Moodle LMS is SCORM 1.2 and SCORM 2004 compliant. You need to first publish the Raptivity Interaction as SCORM 1.2 or SCORM 2004 compliant. After publishing the interaction, you can then zip the published output and host it on Moodle. Please follow the below mentioned steps to import the published output to Moodle LMS:

## I) Importing the Output:

1. Type the URL Moodle server / URL path in any browser.

2. Home page for the Moodle LMS will be displayed with the login link.

3. By clicking on the login link, the Login page for Moodle LMS will be displayed. Then enter your username and password on this page.

4. Click on the '**Courses'** on the '**Site Administration'** panel.

5. Click on the '**Add/edit courses'** link from the same panel under '**Courses'.**

6. Click on '**Add a new course'** button.

7. Enter the details about the course.

Note: The value of following parameters should be mentioned as listed below:

1**. Format** – SCORM format.

2. **Availability** – This course is available to students.

3. **Force Language** – English.

8. Assign the roles to the course.

We can assign different roles to the course such as administrator, teacher, student, etc. An access right on the course depends on the role of the user (Description for each role is mentioned on the 'Assign Role' Page).

1. To assign students to the course, click on '**student**' link.

2. Select '**name of user**' from right panel.
3. Click on left arrow to add to the students list.
4. Click on '**Assign roles in Course ID**' button to save (here actual id of course will be displayed).

9. Click on the '**Click here to enter your course**' button.

10. Click on '**continue**' to add SCORM package.

11. Enter name and summary. Then click on '**Choose or update a file**' button.

12. Click on '**upload a file**' button in the displayed window.

13. Click on '**Browse**' and search for '**SCORM.zip**' package.

14. Then click on '**upload this file**' button.

(Now you will find the message '**File uploaded successfully**' displayed on top of the window.)

15. Now, there are two ways to choose the uploaded file. Please check the below mentioned options.

**Option 1:**

Click on checkbox provided for file selection and click on '**choose**' link.

OR

**Option 2:**

a. Click on '**unzip**' link for the uploaded .zip file.

b. Click '**OK**' at the bottom of the window.

c. Click on unzipped folder and click on '**choose**' link for '**imsmanifest.xml**' file.

18. Click on '**Save and return to course**' button (If you need to apply other settings, apply before clicking this button).

## II) To Access the course from admin side:

1. To view the course, click on the course name link under the course structure.

2. Attend the course.

3. Click on '**Exit activity**' link on top right corner to exit from the course.

## III) To view reports of the attempted course by the student:

After attempting one or more time, you can find the '**view reports for 1 attempts** (number of attempt)' link on the top right corner of the course page.

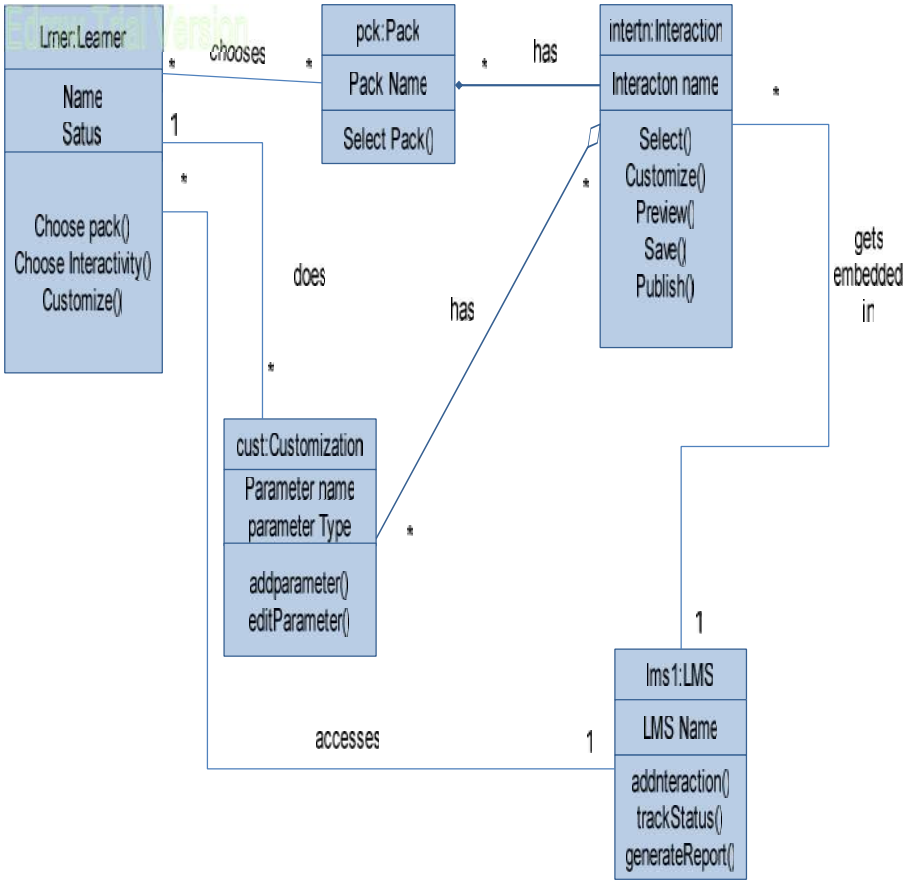
1. Click on '**view reports for 1 attempts**' link

2. You can find the name, attempt, start and end date and score on the displayed page.

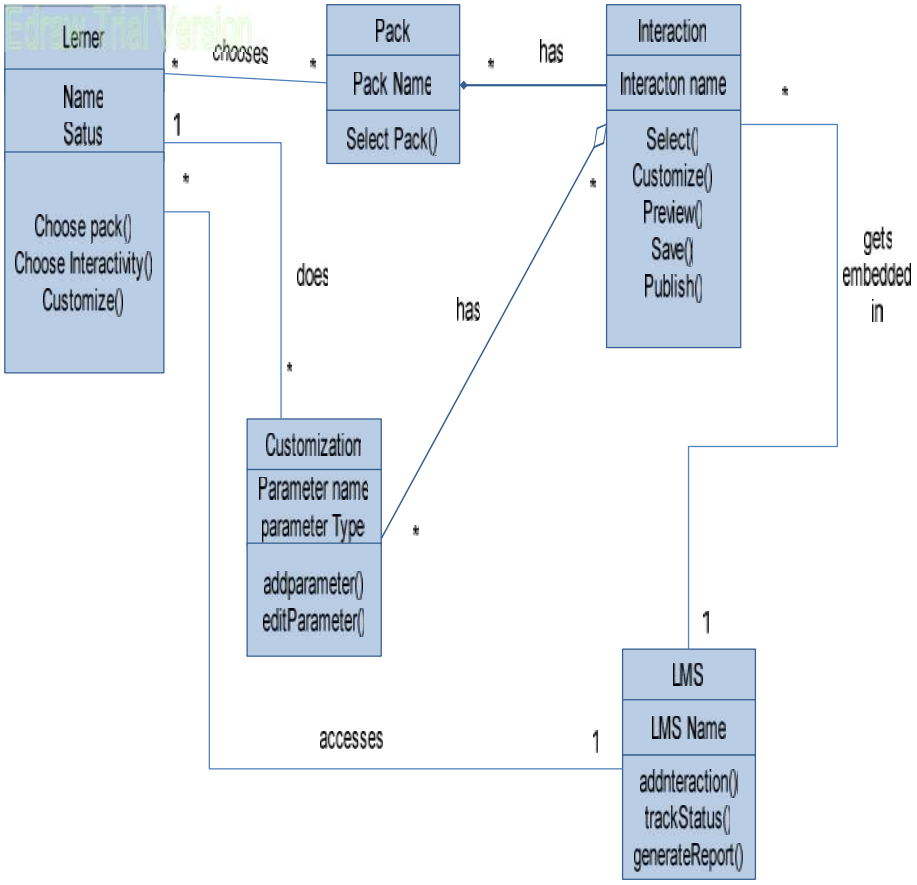
3. Click on '**attempt number**' under attempt header.

4. Now, you will find the name, status, total time, score and '**track details**' link. By clicking on the '**track details'** link, you can find all the other details.

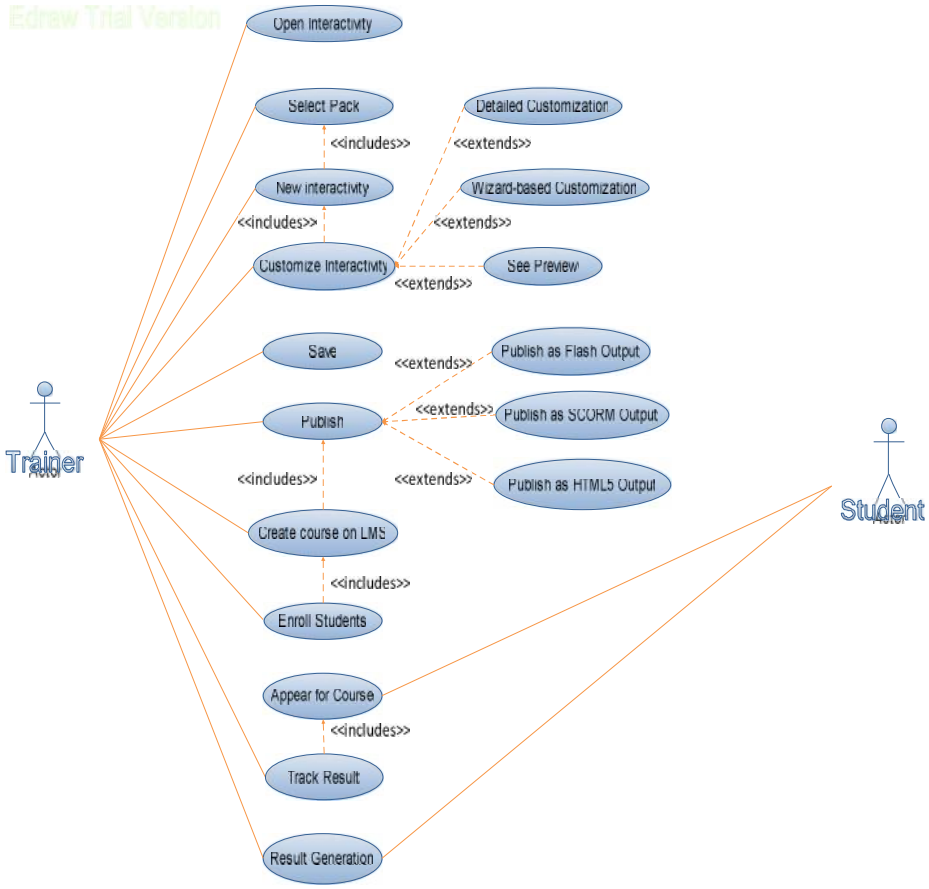
## 3.1 Object Diagram



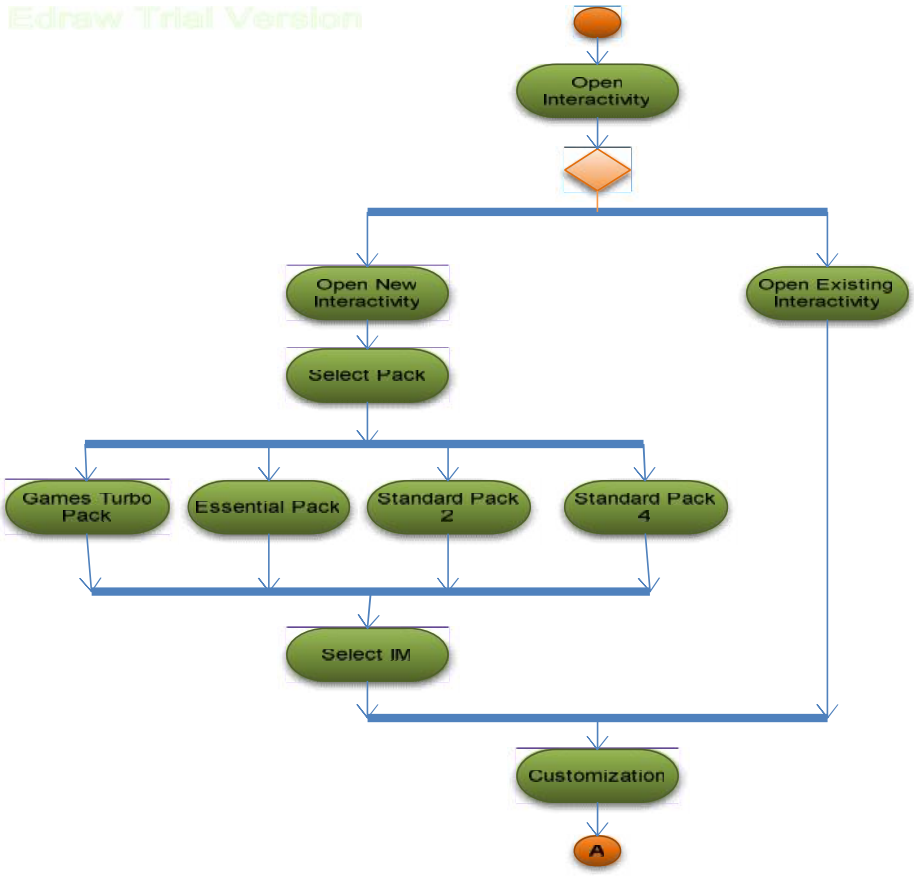
## 3.2 Class Diagram

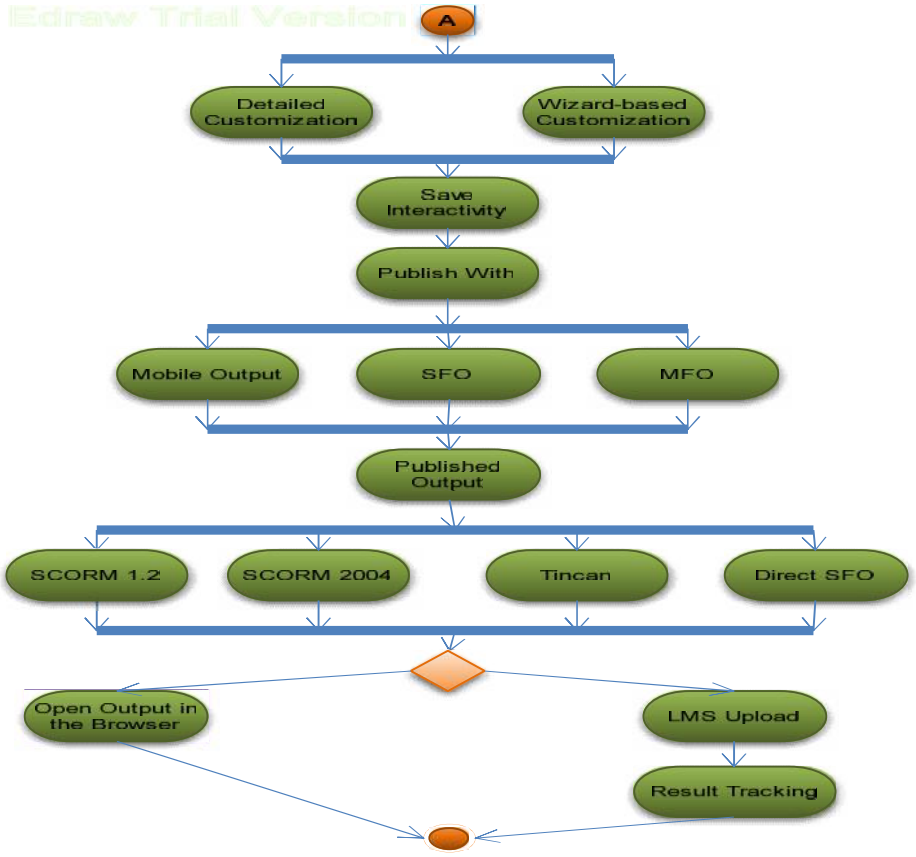


## 3.3 Use Case Diagram

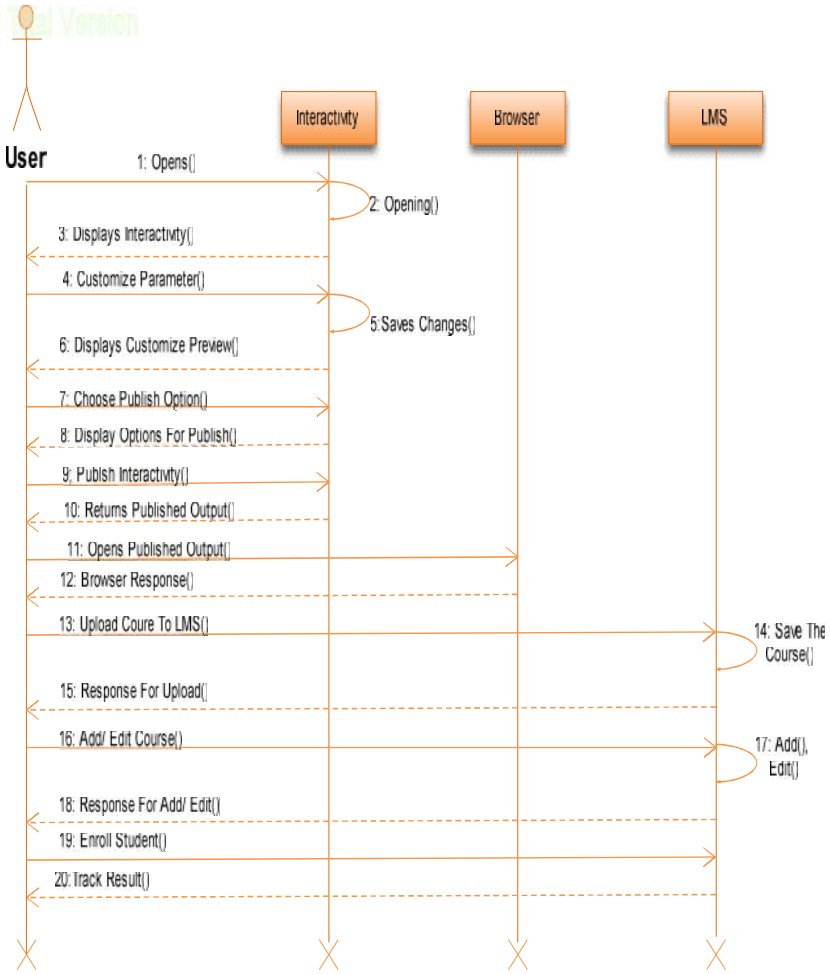


## 3.4 Activity Diagram

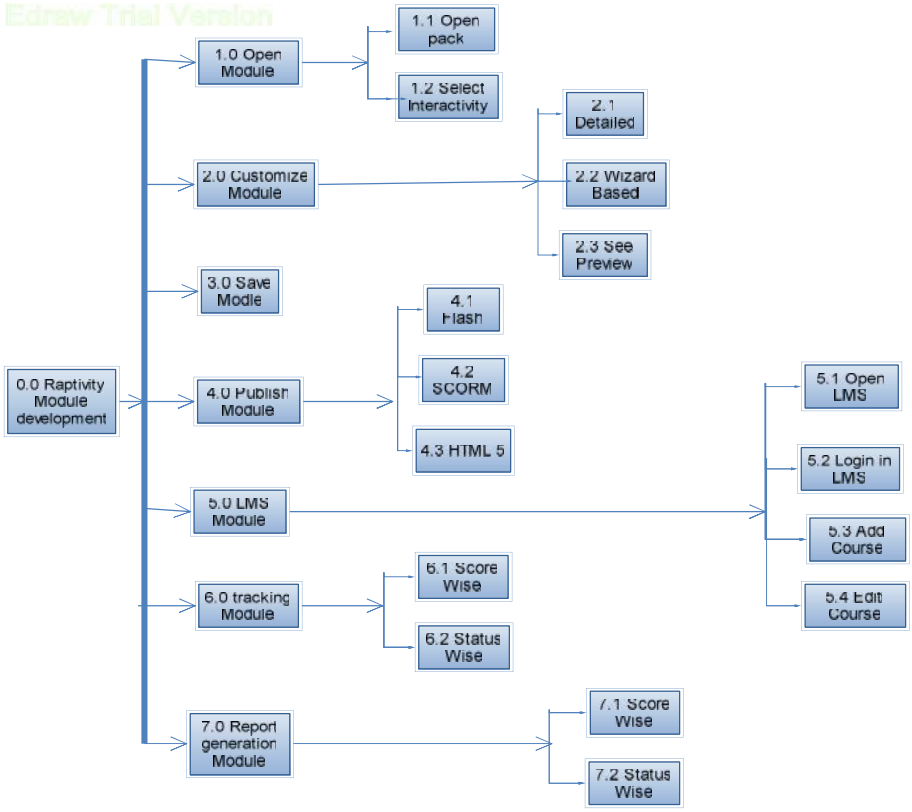



Edraw Trial Version
A
Detailed Customization
Wizard-based Customization
Save Interactivity
Publish With
Mobile Output
SFO
MFO
Published Output
SCORM 1.2
SCORM 2004
Tincan
Direct SFO
Open Output in the Browser
LMS Upload
Result Tracking

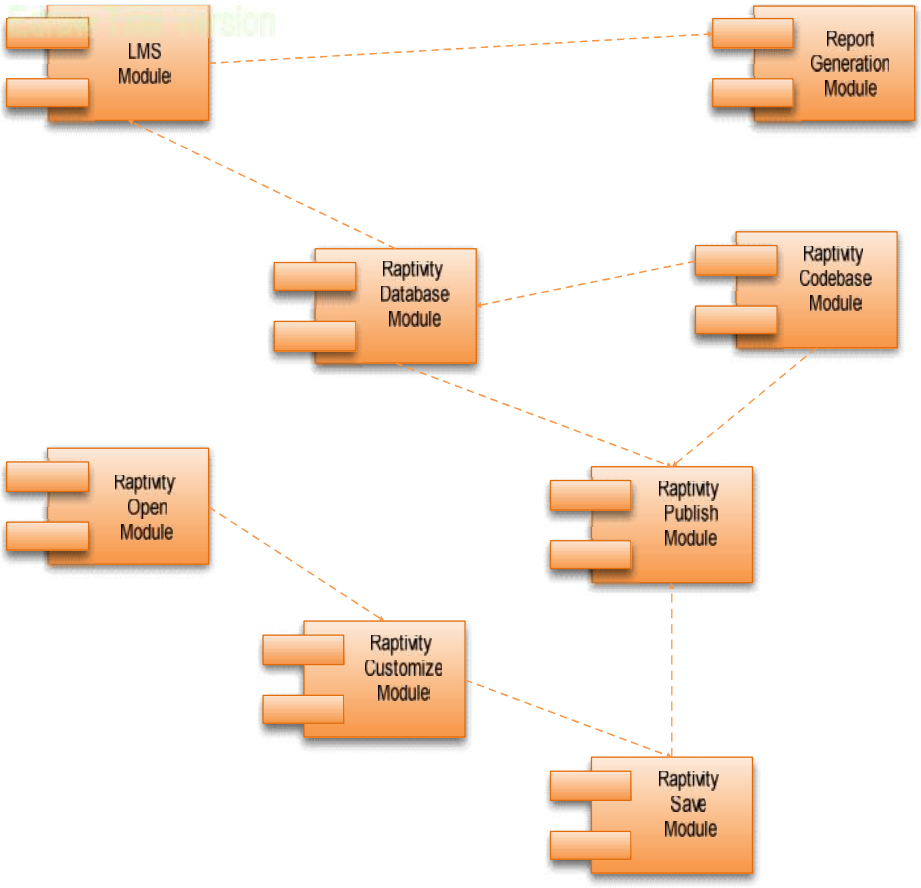
## 3.5 Sequence Diagram



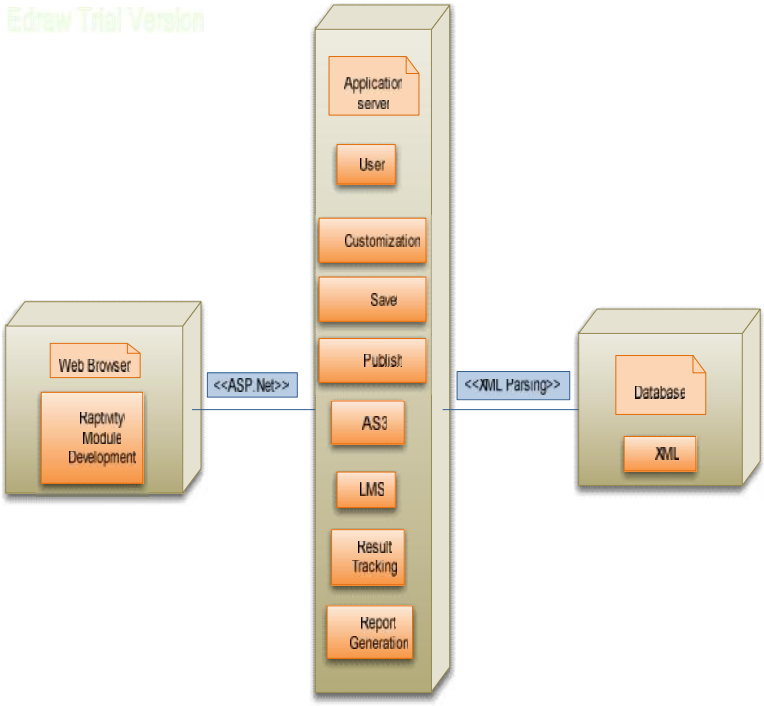
# 3.6 Module Hierarchy Diagram



## 3.7 Component Diagram



## 3.8 Deployment Diagram



## 3.9 Module Specification

### Zoom lens : Raptivity Essential pack - Miscellneous

This interaction model helps present an image that can be studied by zooming on the image parts.

### Name Me- Raptivity Games Turbo Pack- Television Games

This interaction model helps reinforce the learner's cognitive association of concepts and visuals. It is easy to play and has a positive impact in the clarity of retention of the image-concept.

### Venn Diagram - Raptivity Standard Pack 2 - Interactive Diagrams

This interaction model allows you represent relationships among various objects by showing them in form of intersecting circles appearing one after the other. The intersecting portion displays their common features. The circles in the Venn diagram are shown with text. It helps the learner understand the interrelationships between the various sets of information.

## Sticky notes - Raptivity Standard Pack 4 -

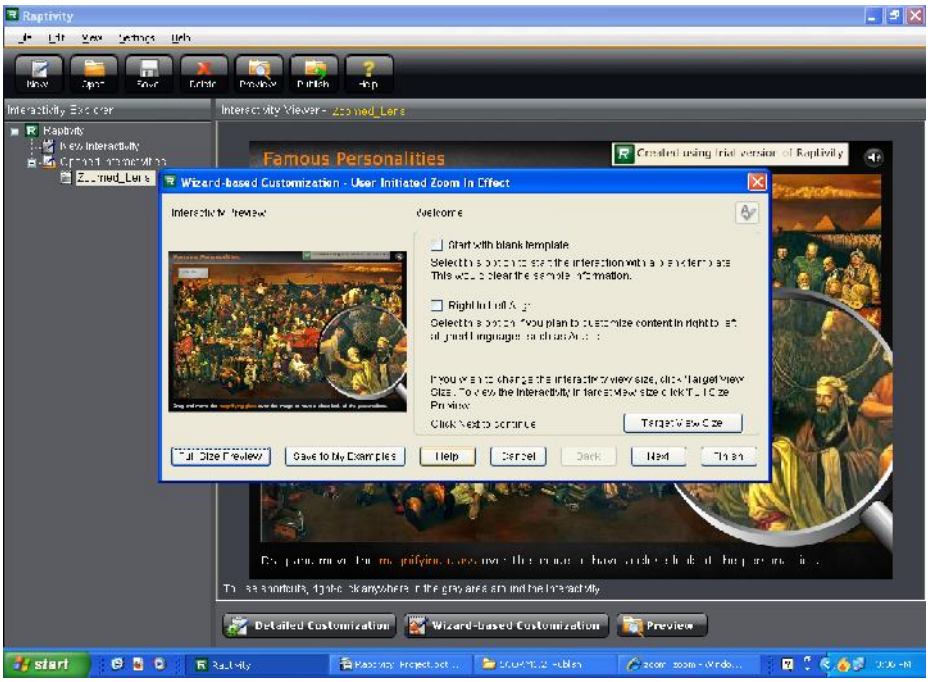
## Presentation Aid

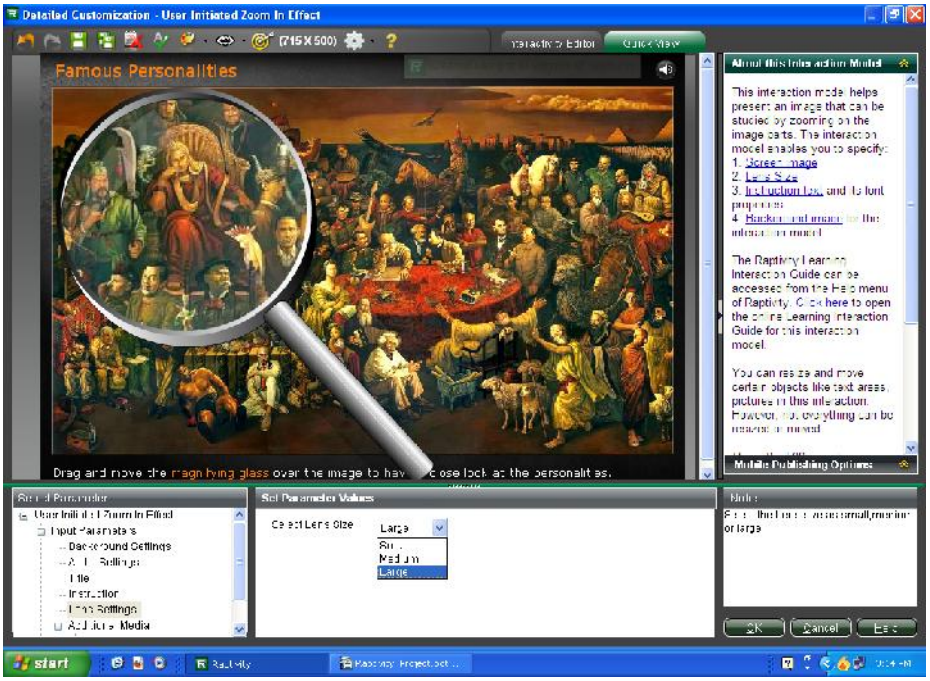
Sticky Note interaction model serves as a unique way to display information in a short, precise and snappy manner for presentations. Add bullet points, notes and diagrams on individual post-its and arrange them as per your preference.

## Relationship Diagram- Raptivity Standard Pack 4 - Interactive Diagrams

Relationship diagram interaction model helps a learner understand the various key points and their relationship with each other in a visual way. The interaction helps to bring focus on the key components and the manner in which they are closely related to each other. It helps the learner understand the importance of each component in an audio-visual way with the help of text, image and video.

## 3.10 User Interface Design

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Famous Personalities
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Large
Medium
Large
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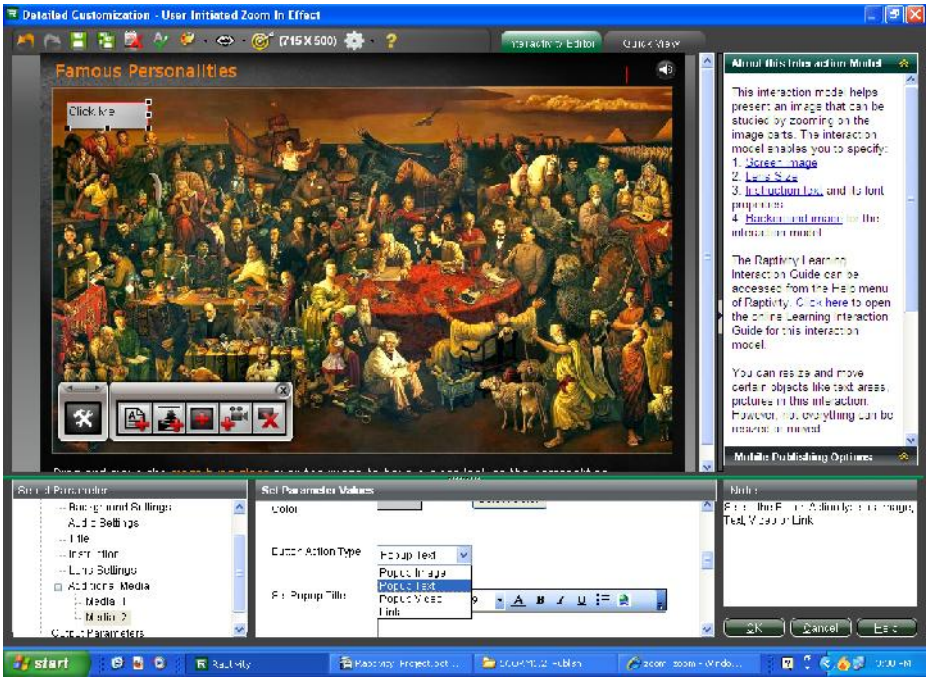
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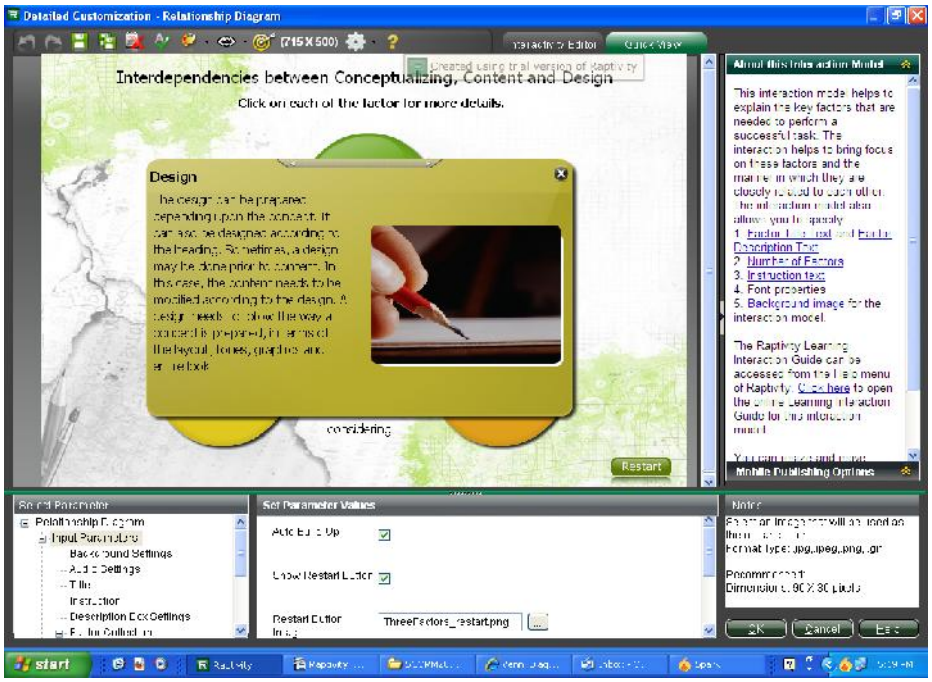
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Interdependencies between Conceptualizing, Content and Design
Click on each of the factor for more details.
Design
Restart
Set Parameter Values
Notes
OK
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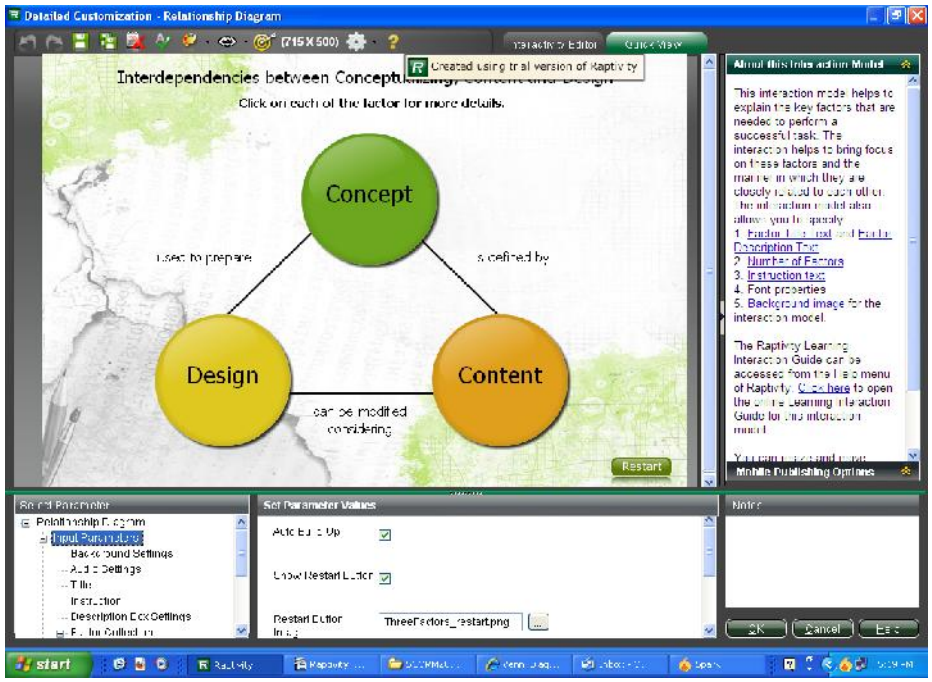
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Click on each of the factor for more details.
Concept
Design
Content
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Set Parameter Values
Notes
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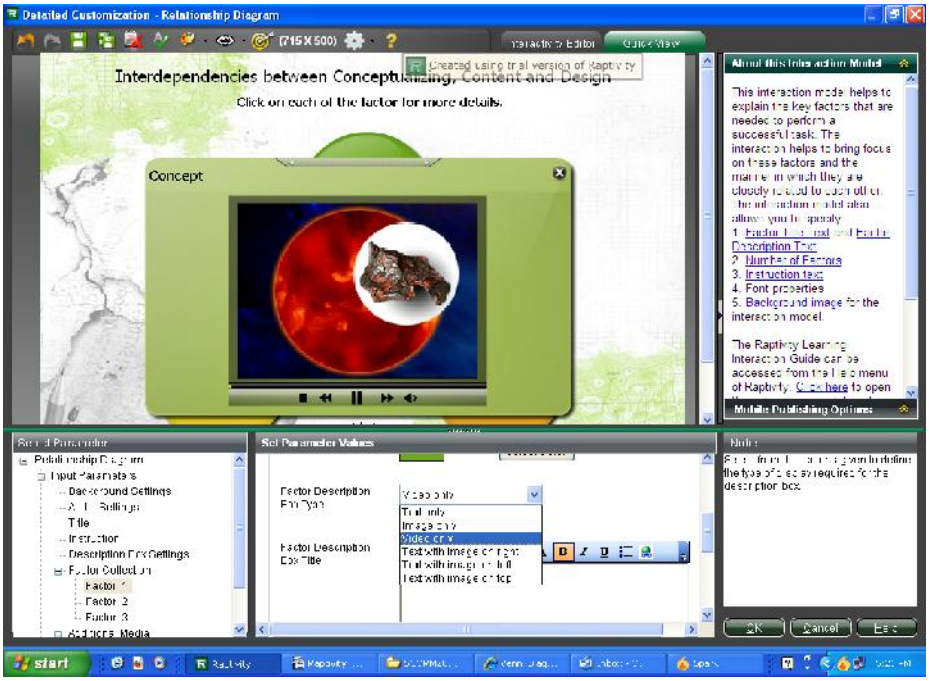
Detailed Customization - Relationship Diagram
Interdependencies between Conceptualizing, Content and Design
Click on each of the factor for more details.
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Factor Description Box Title
Text with image on right
Text with image on top
Multiple Publishing Options
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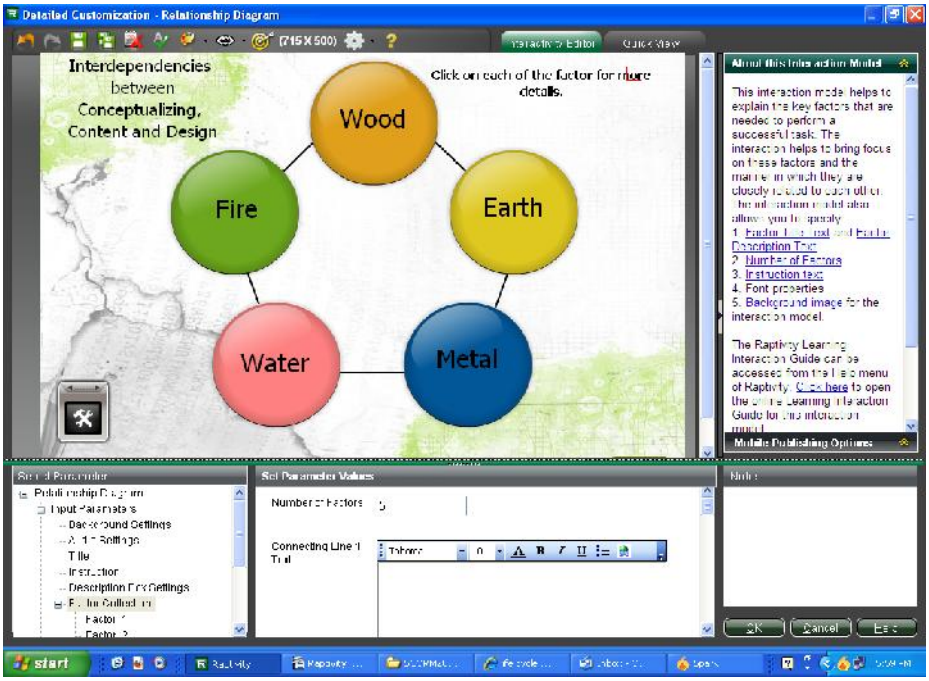
Detailed Customization - Relationship Diagram
Interdependencies between Conceptualizing, Content and Design
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Wood
Fire
Earth
Water
Metal
Set Parameter Values
Number of Factors
Connecting Line 1
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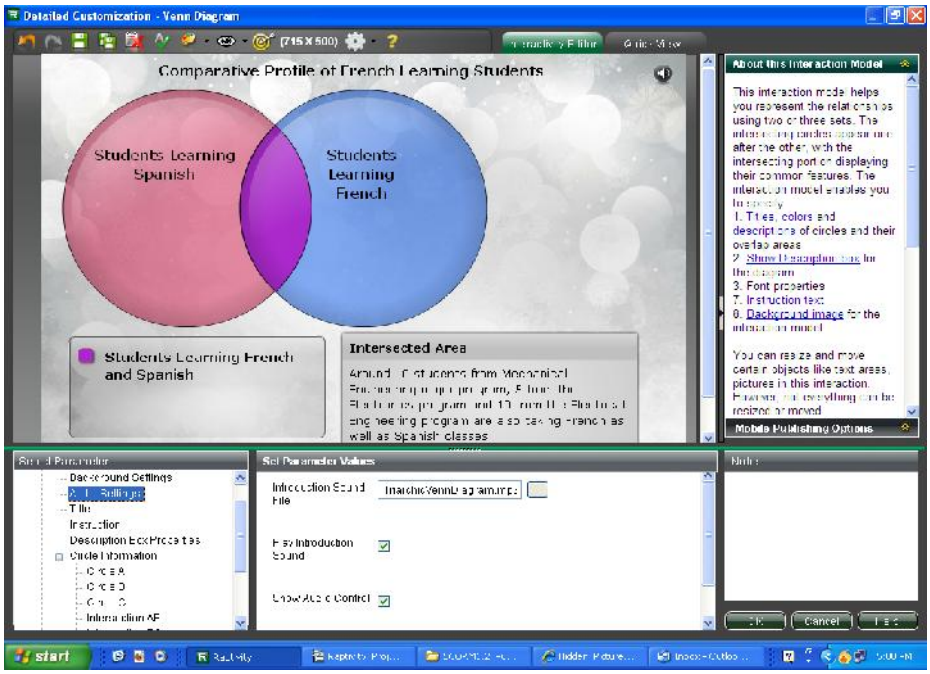
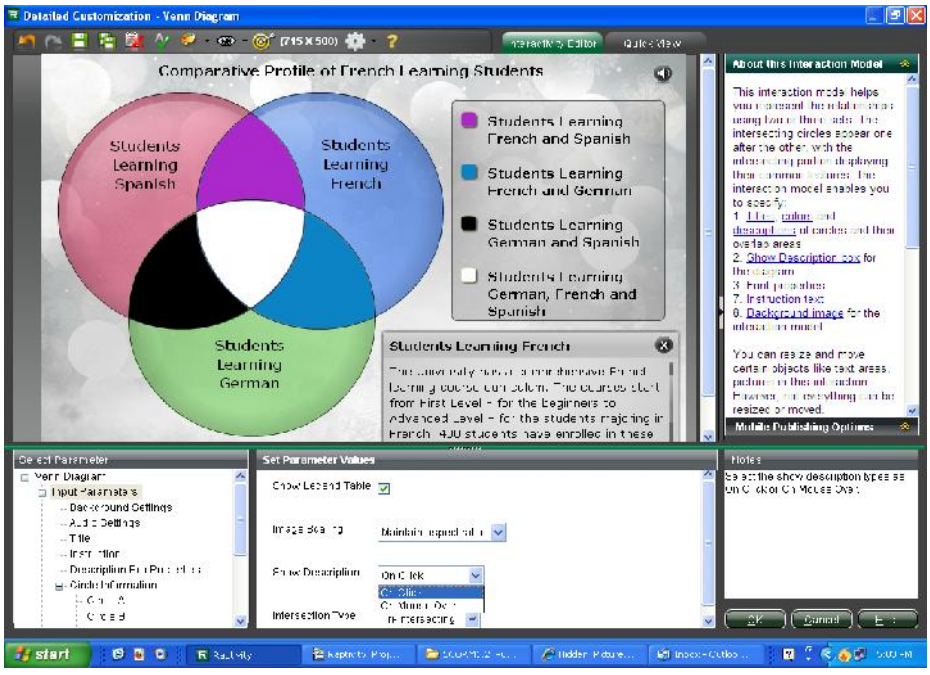
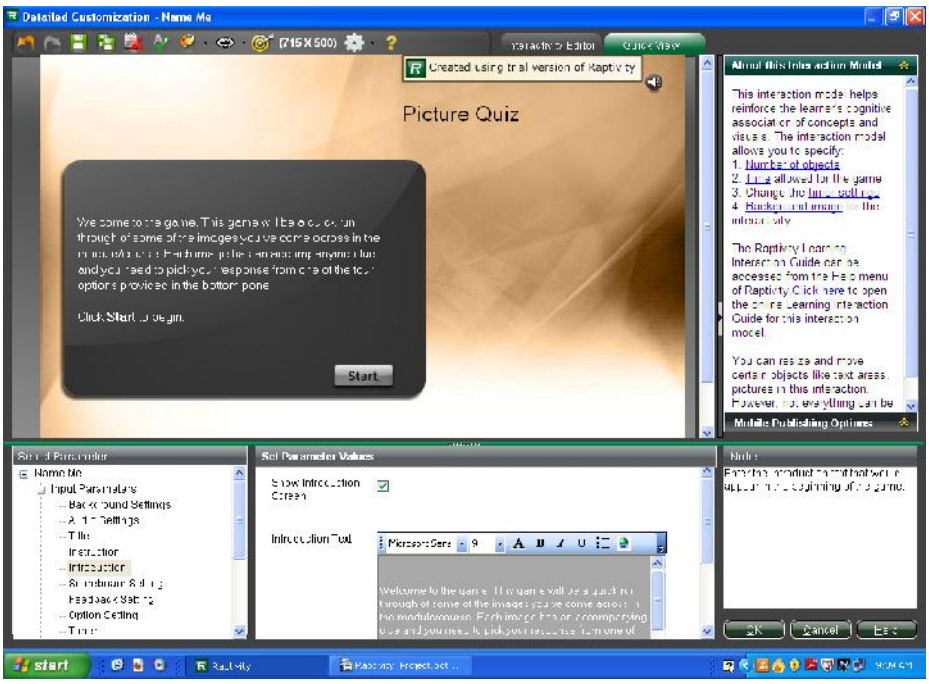
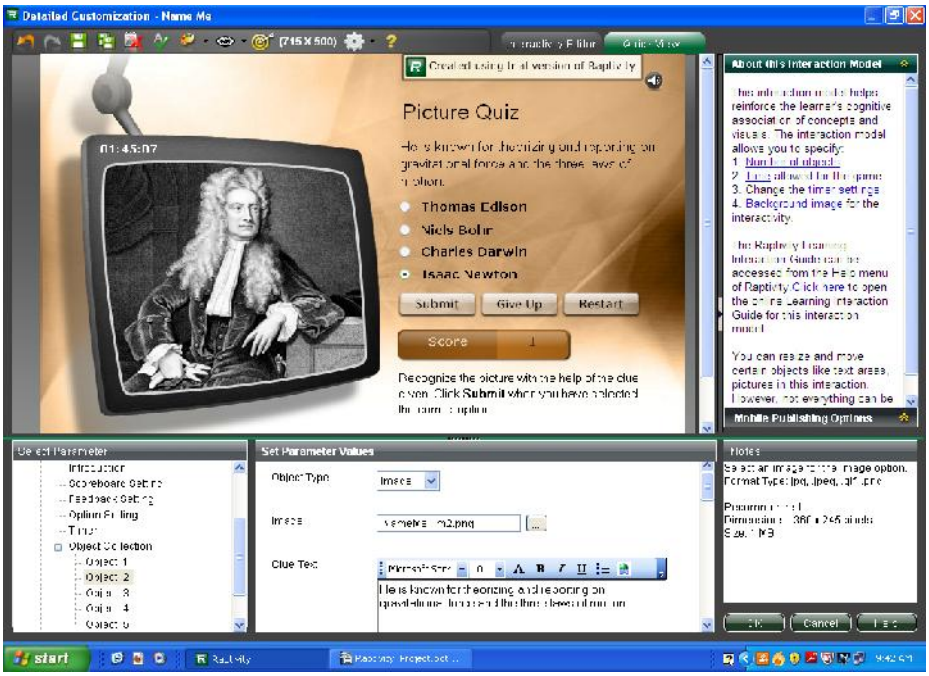
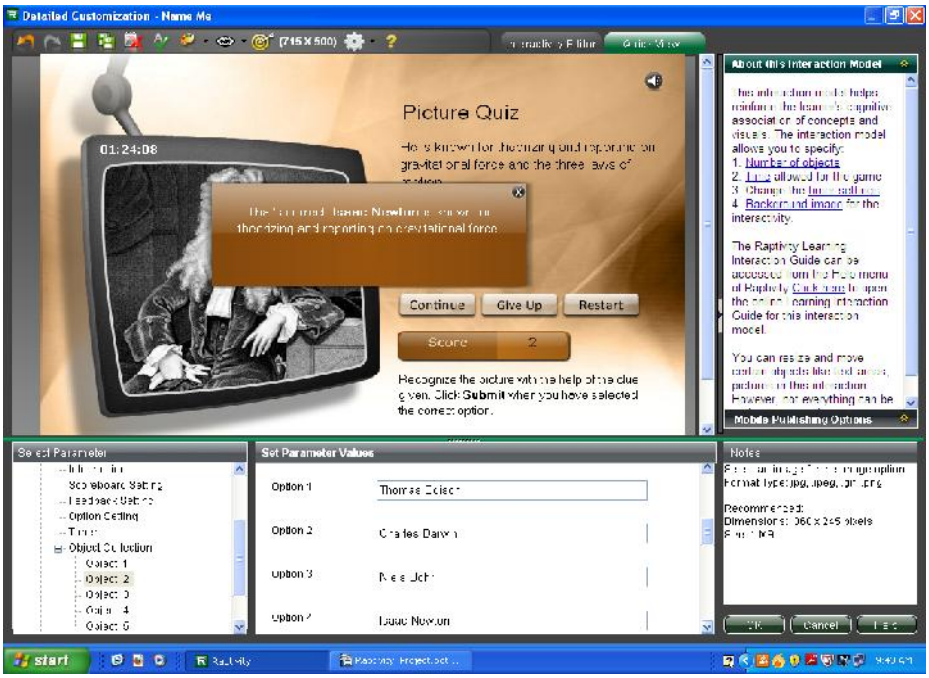
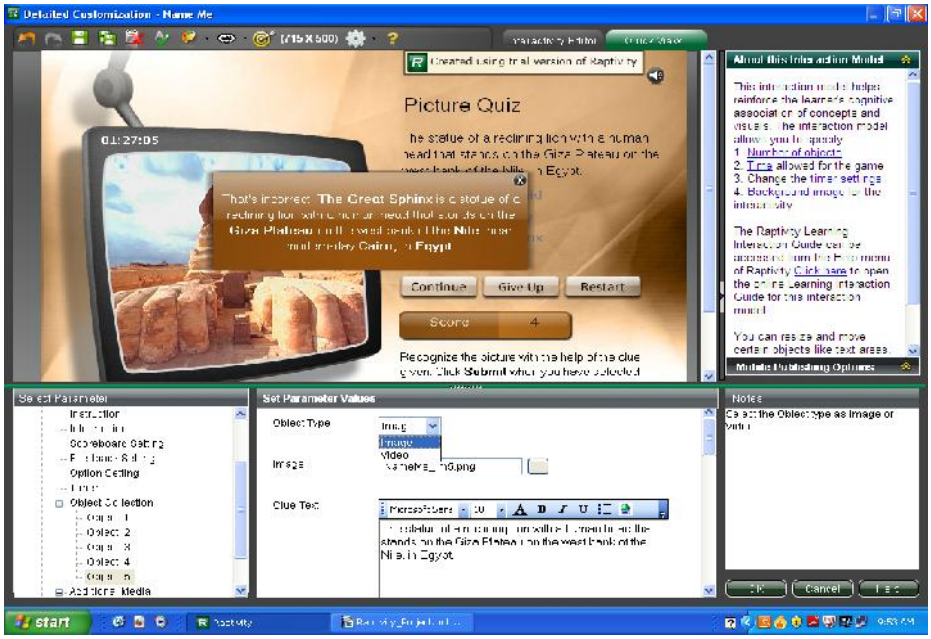

Detailed Customization - Venn Diagram
Comparative Profile of French Learning Students
Students Learning Spanish
Students Learning French
Students Learning French and Spanish
Intersected Area
About this Interaction Model
Mobile Publishing Options
Select Parameter
Set Parameter Values
Notes
Introduction Sound File
Play Introduction Sound
Show Audio Control
OK
Cancel

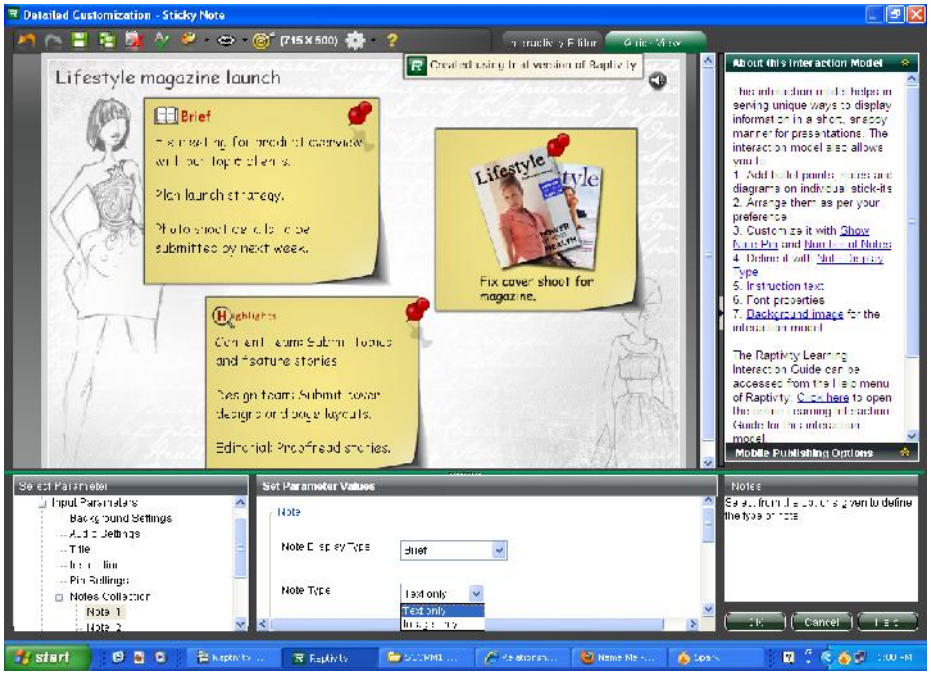

Detailed Customization - Venn Diagram
Comparative Profile of French Learning Students
Students Learning Spanish
Students Learning French
Students Learning German
Students Learning French and Spanish
Students Learning French and German
Students Learning German and Spanish
Students Learning German, French and Spanish
Students Learning French
About this Interaction Model
Mobile Publishing Options
Select Parameter
Set Parameter Values
Notes
Show Legend Table
Show Description
Intersection Type
OK
Cancel

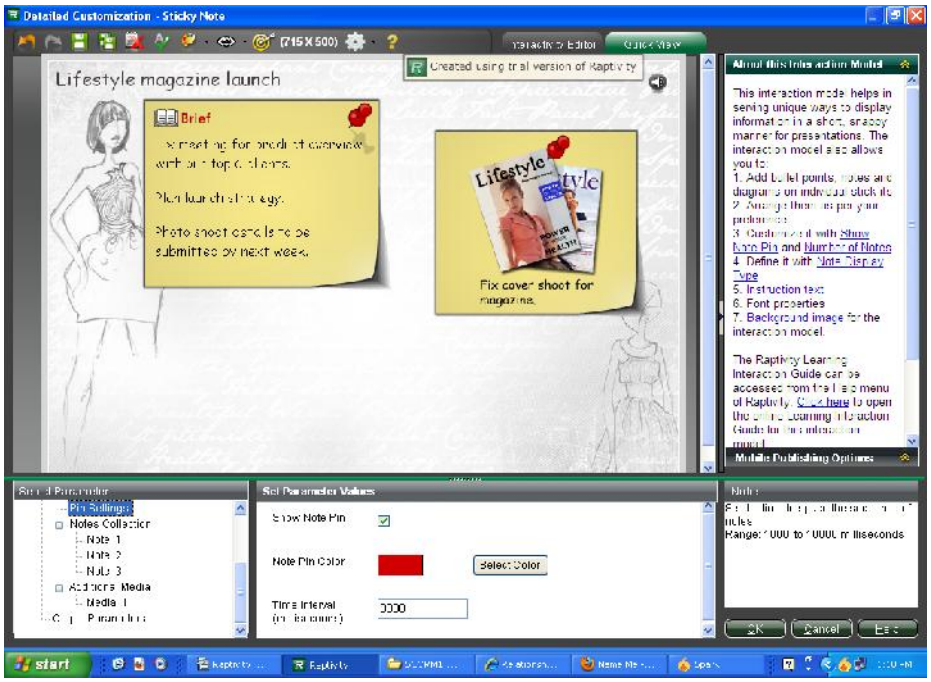

Detailed Customization - Name Me
Picture Quiz
Start
About this Interaction Model
Mobile Publishing Options
Select Parameter
Set Parameter Values
Notes
OK
Cancel


Detailed Customization - Name Me
Picture Quiz
Thomas Edison
Niels Bohr
Charles Darwin
Isaac Newton
Submit
Give Up
Restart
Score
About this Interaction Model
Mobile Publishing Options
Select Parameter
Set Parameter Values
Notes
OK
Cancel


Detailed Customization - Name Me
Picture Quiz
01:24:08
Continue
Give Up
Restart
Score
2
Recognize the picture with the help of the clue given. Click Submit when you have selected the correct option.
About this Interaction Model
Mobile Publishing Options
Select Parameter
Set Parameter Values
Option 1
Option 2
Option 3
Option 4
Notes
start


Detailed Customization - Name Me
Picture Quiz
01:27:05
Continue
Give Up
Restart
Score
4
Recognize the picture with the help of the clue given. Click Submit when you have selected
About this Interaction Model
Mobile Publishing Options
Select Parameter
Set Parameter Values
Object Type
Image
Video
Clue Text
Notes
start


Detailed Customization - Sticky Note
Lifestyle magazine launch
Brief
Plan launch strategy.
Photo shoot details to be submitted by next week.
Fix cover shoot for magazine.
Highlights
Design team: Submit cover design and body layouts.
Editorial: Proofread stories.
About this Interaction Model
Mobile Publishing Options
Select Parameter
Input Parameters
Background Settings
Audio Settings
Title
Pin Settings
Notes Collection
Note 1
Note 2
Note 3
Set Parameter Values
Note
Note Display Type
Brief
Note Type
Text only
Notes
OK
Cancel
start


Detailed Customization - Sticky Note
Lifestyle magazine launch
Brief
Plan launch strategy.
Photo shoot details to be submitted by next week.
Fix cover shoot for magazine.
About this Interaction Model
This interaction model helps in serving unique ways to display information in a short, snappy manner for presentations. The interaction model also allows you to:
1. Add bullet points, notes and diagrams on individual stick-its
2. Arrange them as per your preference
3. Customize it with Show Note Pin and Number of Notes
4. Define it with Note Display Type
5. Instruction text
6. Font properties
7. Background image for the interaction model.
The Raptivity Learning Interaction Guide can be accessed from the Help menu of Raptivity. Click here to open the online learning interaction Guide for this interaction model.
Mobile Publishing Options
Pin Settings
Notes Collection
Note 1
Note 2
Note 3
Add-ons: Media
Media 1
Set Parameter Values
Show Note Pin
Note Pin Color
Select Color
Time Interval (in seconds)
0000
Notes
Range: 0000 to 9999 milliseconds
OK
Cancel
start

## 3.11 Test Procedures and Implementation

### Testing Strategies:

- First the Screen Approval Document is sent to all the developers and the test engineer. In this document the features that are to be developed are mentioned along with its functionality. Using this document the developers start developing the feature whereas the test engineer starts the test case design for the features.

### Test Case Design:

1. Using the Screen Approval Document the test engineer designs the test cases.
2. The test cases are designed by considering the 3 points:
    - User Interface level test cases.
    - Functionality level test cases.
    - Integration level test cases.
3. These test cases are reviewed and enhanced for every cycle of testing.
4. For user interface level test cases the engineer also

considers the developer level testing because the developer carries out the user interface level testing. Then the test engineer just sees to it whether everything is proper.

## Developer level testing (Unit Testing):

- Developer level testing is also called as 'Unit testing'. It is carried out by each developer in the team. The features that are developed by the developer are tested by considering the functionality of the feature and for the user interface how how the interface looks like. This user interface level testing points are listed into a checklist called as “Pre QA Checklist” or "Dev Checklist" This checklist consists of the points that the developer has to test for the features developed.

## Testing Environment:

- The testing is for Raptivity output is carried out on different Operating Systems.
- For Raptivity output, the operating system on which testing is carried are Win XP, Win 2K, and Windows

Vista, IOS, Windows 7 Then the further testing on each platform is done and if any specific bug is found then it is solved and again further testing is carried out.

- The output also depends upon the browser versions also especially audio / video support. For example .mp3 files are not supported in mozilla but they do play in chrome. Hence apart from the operating system browser support testing is also carried out.

## Test Case Execution:

- After the development is complete, the features are given to the test engineer so that he may test out the features.
- The testing is carried out in cycles. The cycles of testing depends upon the number of bugs the test engineer finds in each cycle of testing. If the test engineer is not able find any further bugs then the testing cycle completes.

## The testing is carried out as following:

- **UI level testing:** First the testing is carried out

considering only the user interface.

- **Functionality level testing:** In this testing the features are tested considering the functionality of the features. It is tested whether the feature works properly as per definition in the approval document.
- **Integration level testing:** This testing is carried out when two different features are integrated or when all the different features are integrated into one. So this testing is carried out to see whether one feature affects the other.

If any bugs are found while the above three testing phases then those bugs are added into the "Happen", which is an In-House system, developed for communication between developers and test engineer.

## Prerequisites:

Raptivity should be installed.

.net framework should be present before installing Raptivity

Flash should be installed.

| ***Sr. No.*** | ***Test Case Scenario*** | ***Expected Output*** | ***Actual Output*** | ***Status*** |
|---|---|---|---|---|
| 1. | If "Show Introduction Screen" check box is selected | Introduction Screen Should be displayed on Screen with the Start Button | Introduction Screen is displaying on the screen with Start Button. | Pass |
| 2 | If No. Of Objects are given in between maximum and minimum limit | All the objects should be present on the screen at specified position | All the objects are displayed on the screen at specified position. | Pass |
| 3 | If stage width is given beyond actual limit | Alertbox should be displayed giving error message | Alertbox is displaying with the error message that "Interactivity width should be less than or equal to 1024" | Pass |
| 4 | If text for particular textbox is more than its size. | Scrollbar should appear for that textbox and it should be visible to user | Scrollbar is appearing on screen for that particular textbox. | Pass |
| 5 | If user selects blank template option | The blank screen should appear on stage allowing user to customize as per his/her | The blank screen is appearing on stage where user can customize according to their requirements. | Pass |

| | | | | |
|---|---|---|---|---|
| | | requirements | | |
| 6 | If user selects RtoL option | This option should lead to all the text on stage to be displayed from Right to Left (specially for arebic text) | All the text on stage is displaying fro Right to Left. | Pass |
| 7 | If user drags GTB(Global Tool Box) component on screen | That component should be placed where user wants to place it and should work with proper functionality | The user is able to place the component at desired location and it is working properly. | Pass |
| 8 | If user adds video on GTB popup and clicks on popup button | Current functionality of IM should stop and video should run smoothly | The current functionality of IM gets stopped and GTB popup video starts running. | Pass |
| 9 | If user gives any link to GTB button | The given link should get opened in appropriate manner | The Given link is getting opened once user clicks on the GTB button. | Pass |
| 10 | If user wants to track the user interaction with the given | The completion status and score(if applicable) | The completion status(not attempted, not completed, completed,pass, | Pass |

| | | | | |
|---|---|---|---|---|
| | interactivity | should get reflected in LMS | fail) and score if applicable are getting displayed on LMS. | |
| 11 | If user wants to publish the interactivity in SFO | The interactivity should get published containing all data into one File | The interactivity is getting puplished and only one SFO gets generated. | Pass |
| 12 | If user wants to publish the interactivityin MFO | The interactivity should get published with Multiple File Output | The interactivity is getting published with all sound files, pictures, html files separately | Pass |
| 13 | If user want to publish interactivity in Mobile | The published interactivity should get adjusted in mobile window | The published output is getting displayed on mobile screen and it got adjusted appropriately. | Pass |
| | | Name Me | | |
| 14 | If user selects the answer and clicks on submit button | Then other options should not be clickable | Other options are not clickable. | Pass |
| 15 | If Timer is selected then once time is up | The Time Up Feedback should come on the screen and the whole IM should get | The Time Up Feedback is coming and all other functionalities are not | Pass |

| | | | | |
|---|---|---|---|---|
| | | locked | accessible. | |
| 16 | If Introduction Screen checkbox is unchecked | Direct main screen should appear instead of Introduction Screen | Main screen is coming directly. | Pass |
| 17 | If the button size is more or less than the recommended size | The button image should get properly scaled in provided size | The button image is getting scaled properly. | Pass |
| 18 | If user sets correct answer through customization | Appropriate message should come on the screen when one chooses the answer | The customization settings are reflecting on the screen with appropriate feedback for right answer and wrong answer | Pass |
| 19 | If user chooses right answers | The score should increase with every right answer | The score is getting increased with every right answer & remains static with every wrong answer. | Pass |
| 20 | If user clicks on GiveUp Button & then on Check Answer Button | he questions wed by your er & correct er should come e form of list | The list is getting generated describing all questions followed by your answer & correct answer. | Pass |

| | | | | |
|---|---|---|---|---|
| 21 | If user clicks on Restart button | The whole IM should get loaded from the start | The IM is getting loaded newly. | Pass |
| 22 | If user clicks on mute audio icon | The currently running background sound should get stop | The background sound is getting stopped immediately. | Pass |
| 23 | If user changes font type,color of any option | The changed font type, color should appear on screen for that specified option | The changes made through customization are getting reflected on the screen. | Pass |
| 24 | If user select background type as image | Selected image should get properly applied for the background | Selected image is getting properly applied for the background | Pass |
| 25 | If user adds video in IM | It should work properly | All the buttons-play, stop, forward, reverse are working properly. | Pass |
| | | | | |

## 4.1 UserManual

1. **Instructional Use**: It provides you the information about how to use the selected Interativity.

2. **Your Material**: It provides you the information about what all data is required to customize the Interactivity.

3. **Creation process**: It provides you the information about the navigation throughout the Interactivity.

4. **Customizing the Interactivity**:It provides you the information about what all fields are available to customize and the meaning of each and every option.

## 4.2OperationManual/Menu Explanation

### Name Me

### Instructional Use

This interaction model helps reinforce the learner's cognitive association of concepts and visuals. It is easy to play and has a positive impact in the clarity of retention of the image-concept. The game provides a quick run through of some of the images covered in the course content. Along with each image you can provide your learners with clues and have them select their response from multiple choices.

### Your Materials

Before you begin you need to be prepared with the following:

Questions, options, and hints that you would like to include in this interactivity.

Images you would like to include in the presentation. The images can be in .jpg, .gif or .png format. The

recommended dimension of the images is 400X300 pixels. You can also use pictures with greater dimensions in 4:3 proportion.

Sound you would like to include in the interactivity.

The sound files must be in .mp3 format.

Video you would like to include in the presentation. The videos need to be in .flv format. The recommended size of the videos is 10MB.

## Creation Process

To create a *Name Me* interactivity, you need to:

- Go to the Detailed Customization view
- From the Select Parameter tree, go to the Input Parameters and from the Title branch, enter the title for the interactivity.
- In the Introduction Branch fill in an introduction for the interactivity.
- Then from the Image Collection branch, enter your preferred settings in the following fields:
    - Image (ensure each image is of size 360x245

pixels)

*Under Set Parameter Values use the (…) button to select images from your local machine*

- Clue Text (for each image)
- Option (text for each option that the learner can select from in each image)
- Correct Answer – set the correct answer from a dropdown list containing the options you have included for the particular image. Do this for each image
- Correct Feedback (for each image question)
- Incorrect Feedback (for each image question)

- Once you're done with the settings, click OK. From the File menu, select Save As to save the interactivity, and then Publish to use it where you like.

## Customizing the Interactivity

To customize this interactivity, go to the Detailed Customization View. Customizations will be possible through the Select Parameter section on your screen.

5. Parameters you can customize:

5.1 Show Restart Button – Select the checkbox if you want to have the Restart button appear at the end of every complete or incomplete attempt in the game

5.2 Show Give Up Button - Select the checkbox if you want to have the Give Up button appear at the end of every complete or incomplete attempt in the game

5.3 Images

5.3.1 Restart, Start, Check answer, Submit, and Continue Button images (Recommeded size given in Notes section)

5.3.2 Game Background image (ensure the image is of size 680x370 pixels)

5.3.3 Background image (ensure the image is of size 715x500 pixels) *Under Set Parameter Values use the (…) button to select images from your local machine*

5.4 Max Score – Set the maximum score for the

interactivity

5.5 Audio Settings

5.5.1 Play Introduction Sound (on/off)

5.5.2 Show audio control (on/off)

5.5.3 Introduction Sound File (browse and attach an audio file in .mp3 format)

5.5.4 Audio icon - Default or image (Image - 25X25)

5.6 Title of the Interactivity (The title appears at the top of the interactivity window)

5.7 Instruction (The instruction appears at the bottom of the interactivity window)

5.8 Introduction (The introduction appears at the beginning of the interactivity)

5.9 Scoreboard Settings (Scoreboard font and color settings)

5.10 Answer Feedback Settings

5.10.1 Answer Feedback Background Color

5.11 End of Game Feedback Settings

5.11.1 End of Game Feedback Text

5.11.2 Give Up Feedback Text

5.11.3 Check Answer Text

5.11.4 Check Answer Font and Color

5.11.5 End of Game Feedback Background Color

5.11.6 Correct Answer Text (Label in Check Answer feedback box)

5.11.7 Your Answer Text (Label in Check Answer feedback box)

5.12 Option Settings

5.12.1 Option Font and Color settings

5.13 Timer Settings

5.13.1 Show Timer – Select this option if you would like a timer displayed on screen

5.13.2 Time Interval – Enter the length of time you would like to you give your learners for completing the exercise

5.13.3 Start Timer Downwards/Upwards

5.13.4 Timeout Feedback – Enter the text that appears when the allotted time runs out

5.13.5 Timer Font and Color settings

5.14 Image Collection

5.14.1 Number of Images (you can have up to 30 images)

5.14.2 Image (ensure each image is of size 360x245 pixels)or-Video

*Under Set Parameter Values use the (…) button to select images from your local machine*

5.14.3 Clue Text (for each image)

5.14.4 Option (text for each option that the learner can select from in each image)

5.14.5 Correct Answer – set the correct answer from a dropdown list containing the options you have included for the particular image. Do this for each image

5.14.6 Correct Feedback (for each image question)

5.14.7 Incorrect Feedback (for each image question)

## Relationship Diagram

## Instructional Use

This interaction model helps to explain the key factors that are needed to perform a successful task. The interaction helps to bring focus on these factors and the manner in which they are closely related to each other.

## Your Materials

Before you begin creating the interactivity you will need to be prepared with the following:

- Content that you would like to include in this interactivity.
- Image (jpg, .jpeg, .gif, .png) that you would like to include in this interactivity .
- Sound you would like to include in the interactivity. The sound files must be in .mp3 format.
- Video you would like to include in the interactivity. The videos need to be in .flv, .f4v, .mp4 format. The recommended size of the videos is 10MB.

## Creation Process

To create a *Relationship Diagram* interactivity, you need to:

- Go to the Detailed Customization view
- From the Select Parameter tree, go to the Input Parameters branch and from the Title branch, enter the title for the interactivity.
- Then from Factor Collection branch enter your preferred settings in the following fields:
    - Number of Factors (you can have a maximum of 6 factors and minimum 3 factors)
    - Factor Title Text – for each factor
    - Factor Description Box Title – enter the description title for factor
- Once you're done with the settings, click OK. From the File menu, select Save As to save the interactivity, and then Publish to use it where you like.

## Customizing the Interactivity

To customize this interactivity, go to the Detailed Customization View. Customizations will be possible through the Select Parameter section on your screen.

- Parameters you can customize:
  - Input Parameters
    - Auto Build Up
    - Show Restart Button (on/off)
    - Restart-Button-Image

      *Under Set Parameter Values use the (…) button to select images from your local machine*
    - Image Scaling– Select whether you want image scaling type as 'Stretch' or 'Maintain Aspect Ratio'.
  - Background Settings
    - Background Type– Select whether you want the note type as background image or background color or none.

- Background Image

  *Under Set Parameter Values use the (…) button to select images from your local machine*

  - Background Color – select a color for background

- Audio Settings
  - Play Introduction Sound (on/off)
  - Show audio control (on/off)
  - Introduction Sound File (browse and attach an audio file in .mp3 format)
  - Audio icon - Default or image (Image - 25X25)
- Title of the Interactivity (Name of the interactivity and font settings)
- Instruction (Instruction Text and Font settings)
- Description Box Setting [Show Description Box, Appearance of Description Box(On Click, On Rollover)]
- Factor Collection
  - Number of Factors (you can have a 3- 6 factors)
  - Connecting Line Text – Enter text with the line

to explain the relation between the connecting factors.

- Connecting Line Color – Select from the given options to define the color for this Connecting Line.
- Factor Title Text – Enter the title text for the Factor.
- Factor Circle Color – Select from the given options to define the circle color for this Factor.
- Description Box Details:-
    - Factor Description Box Type – Select the description type from given options.

      *Available Options:- Text only, Image only, Text with image on right, Text with image on left, Text with image on top, Video only*
    - Factor Description Box Title – Enter the title text for description box.
    - Factor Description Text – Enter the

text for description box.

- Factor Description Image – Select an image file for the description box. *Under Set Parameter Values use the (…) button to select images from your local machine*
- Factor Description Video – Select a video file for the description box.
- Factor Description Audio – Select a sound file for the description box.

- Factor Description Box Color –Select a background color for the description box.

## Venn Diagram

## Instructional Use

This interaction model helps you present content revolving around the relationship between different components through a

Venn diagram. This interaction model will help your learners understand the interrelationships between several sets of

## Your Materials

Before you begin creating the interactivity you will need to be prepared with the following:

- Textual content (terms and explanations) of the system you would like to present in the interactivity
- Sound you would like to include in the interactivity. The sound files must be in .mp3 format.

## Creation Process

To create a *Venn Diagram* interactivity, you need to:

- Go to the Detailed Customization view
- From the Select Parameter tree, go to Input Parameters branch and specify the Number of Circles you would like in this interactivity (you can have a maximum of 3 circles).
- From the Title branch enter the title of the interactivity.

- Then from the Circle Information branch enter your preferred settings in the following fields:
    - Circle Heading (for each circle)
    - Circle Text – enter the text for all options for each circle
    - Circle Description – enter a description for each circle
    - Circle Background Color (for each circle)
    - Intersections of Circles
        - Intersection Text
        - Intersection Background Color
        - Intersection Description Title
        - Intersection Description Type
- **Once you're done with the settings, click OK. From the File menu, select Save As to save the interactivity, and then Publish to use it where you like.**

## Customizing the Interactivity

To customize this interactivity, go to the Detailed Customization View. Customizations will be possible through the Select Parameter section on your screen.

- Parameters you can customize:
    - Number of Circles (you can have a maximum of 3 circles)
    - Background-image

      Under Set Parameter Values use the (…) button to select images from your local machine
    - Audio Settings
        - Play Introduction Sound (on/off)
        - Show audio control (on/off)
        - Introduction Sound File (browse and attach an audio file in .mp3 format)
        - Audio icon - Default or image (Image - 25X25)
    - Title of the Interactivity (Name of the interactivity)
    - Instruction (Instruction Text)
    - Description Box Properties
        - Show Description Box – select this checkbox if

you would like your learners to see a box around the description

- Description Box Header Background Color
- Description Text Background Color
- Set Whether you want to play video on load of description box or not
- Set video skin color

- Circle Information
  - Circle Heading (for each circle)
  - Circle Text – enter the text for all options for each circle
  - Circle Description Title (for each circle)
  - Circle Description Box Type ( Text or Video)
  - Circle Description – enter a description for each circle
  - Circle Background Color (for each circle)
  - Intersection of Circle One and Two
    - Intersection Text
    - Intersection Description Title

- Intersection Description
- Intersection Background Color

- Fixed parameters:
    - Shapes, sizes, and positioning of the circles in the interaction model Circle Position

## Sticky Note

## Instructional Use

This interaction model helps in serving unique ways to display information in a short, snappy manner for presentations. Learner can add bullet points, notes and diagrams on individual post-its and arrange them as per your preference. Importance of the points can be shared by using post-it's which are embossed with different keywords.

## Your Materials

Before you begin creating the interactivity you will need to be prepared with the following:

- Content that you would like to include in this interactivity.
- Image (jpg, .jpeg, .gif, .png) that you would like to include in this interactivity .
- Sound you would like to include in the interactivity. The sound files must be in .mp3 format.

## Creation Process

To create a *Sticky Note* interactivity, you need to:

- Go to the Detailed Customization view
- From the Select Parameter tree, go to the Input Parameters branch and from the Title branch, enter the title for the interactivity.
- Then from Notes Collection branch enter your preferred settings in the following fields:
    - Number of Notes (you can have a maximum of 10 notes and minimum 1 notes)
    - Note Text – enter the text for each note

- Note Type and Note Display Type – for each step

- Once you're done with the settings, click OK. From the File menu, select Save As to save the interactivity, and then Publish to use it where you like.

## Customizing the Interactivity

To customize this interactivity, go to the Detailed Customization View. Customizations will be possible through the Select Parameter section on your screen.

- Parameters you can customize:
    - Input Parameters
        - Show Restart Button (on/off)
        - Restart-Button-Image

          *Under Set Parameter Values use the (…) button to select images from your local machine*
        - Image Scaling– Select whether you want image scaling type as 'Stretch' or 'Maintain Aspect Ratio'.

- Background Settings
  - Background Type– Select whether you want the note type as background image or background color or none.
  - Background-Image

    Under Set Parameter Values use the (…) button to select images from your local machine
  - Background Color – select a color for background
- Audio Settings
  - Play Introduction Sound (on/off)
  - Show audio control (on/off)
  - Introduction Sound File (browse and attach an audio file in .mp3 format)
  - Audio icon - Default or image (Image - 25X25)
- Title of the Interactivity (Name of the interactivity and font settings)
- Instruction (Instruction Text and Font settings)
- Pin Settings (Show Note Pin (Yes/No) ,Note Pin

Color, Time interval)

- Notes Collection
  - Number of Notes (you can have a 1- 10 notes)
  - Note Display Type – Select the display style for the Note. Available options are - Urgent, To Do, Exclamation, Normal. Selected option will get displayed as note heading.
  - Note Type – Select whether you want the note type as text only or image only.
  - Note Text – enter the text for each note
  - Note Image – Select an image for each note Under Set Parameter Values use the *(…) button to select images from your local machine*

➢ Note Background Color – select a background color for each note

**User Initiated Zoom in Effect**

**Instructional Use**

This interaction model is useful if you have a very detailed image that you would like your learner to take a look at more closely. A zoom lens enables the learner to view a part in the image in greater detail.

## Your Materials

Before you begin creating the interactivity you will need to be prepared with the following:

1. Image you would like to include in this interactivity. The image can be in .jpg, .gif or .png format. The recommended size of the image is 750 X 450 pixels.
2. Sound you would like to include in the interactivity. The sound files must be in .mp3 format

## Creation Process

To create User Initiated Zoom in Effect interactivity, you need to:

- Go to the Detailed Customization view
- From the Select Parameter tree, go to Input Parameters

enter your preferred settings for the following: Screen Image (The recommended size of the image is 698 X 419 pixels) Under Set Parameter Values use the () button to select images from your local machine

- Once you are done with the settings, click OK. From the File menu, select Save As to save the interactivity, and then Publish to use it where you like

## Customizing the Interactivity

To customize this interactivity, go to the Detailed Customization View. Customizations will be possible through the Select Parameter section on your screen.

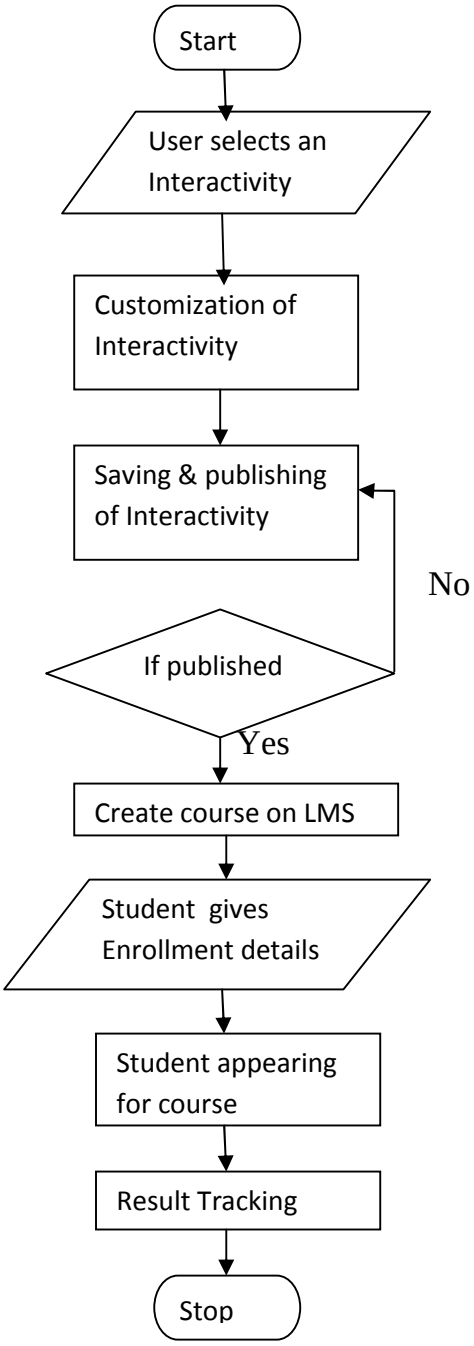
5. Parameters you can customize:
    1. Images
        1. Screen Image (size of the image should be 698 X 419 pixels)
        2. Background-Image

           Under Set Parameter Values use the () button to select images from your local machine

2. Audio Settings
    1. Play Introduction Sound (on/off)
    2. Show audio control (on/off)
    3. Introduction Sound File (browse and attach an audio file in .mp3 format)
    4. Audio icon - Default or image (Image - 25X25)
3. Title of the Interactivity: The title appears at the top of the interactivity window
4. Instruction: The instruction appears at the bottom of the interactivity window
5. Lens Settings: Select Lens Size (Small, Meduim, Large)

6. Fixed parameters:
    1. Shapes and sizes of graphic elements in the interaction model

## 4.3 Flowchart



## Drawbacks And Limitations

1. Raptivity requires more RAM for better performance.

2. Only on Mozilla and Internet Explorer browsers, all the interactivities run smoothly.Some problems may occur while running interactivities on other browsers.

## Proposed Enhancements

1. Better performance
2. All browsers compatibility
3. IOS, Android, and all latest Mobile devices compatibility

# Conclusion

- Raptivity, the world's first rapid interactivity builder, helps you create true learning outcomes with meaningful interactivity.
- The Raptivity library of pre-build interactions is based on best practices in instructional design and allows complete customization of each interaction.
- Raptivity outputs your interactivity to a single Html file, which fits right into your e-learning tool.
- Raptivity tracks completion status, score and responses and provides this information to authoring tools for SCORM/AICC tracking with LMS.
- Anyone can use Raptivity with minimal learning and absolutely no programming.