Project OSCAR

Open Source Courseware Animations Repository

Digital Learning India 2008

July 29 -31 , 2008

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Project OSCAR
Open Source Courseware Animations Repository

Goals

- Create a searchable repository of
  - *Open source Web-based interactive animations for teaching various concepts and technologies*
- Provide a platform for
  - *Mentors (Teachers and experts in various domains) to suggest ideas for animation*
  - *Developers (Students) to create content based on the suggested ideas and guidance*

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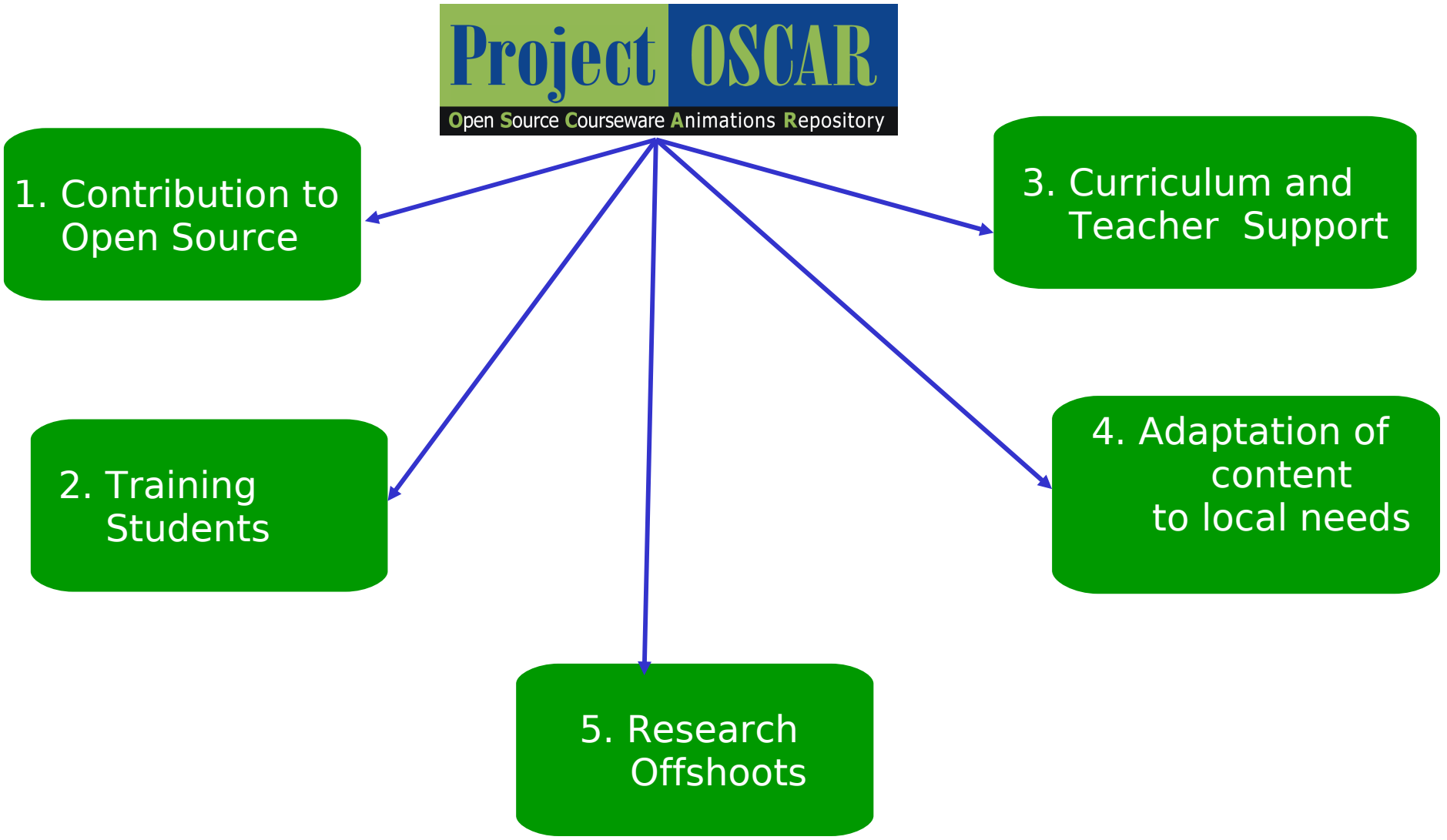
The Facets



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Contribution to Open Source -1

- **Existing Open Source Courseware**

  Course web pages:

  - Made available by instructors in most universities
  - Content may be text , web pages, slides etc.

  Class videos:

  - Made available for streaming and off - line access
  - Example: IIT Bombay - www.cdeep.iitb.ac.in/

OUR FOCUS

ANIMATION WITH USER INTERACTION

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Contribution to Open Source -1

Applet Implementation

- Evolution of content
  - Mentors, Developers, Topic
- Implementation Strategy of applets
  - Design of Explanations, explorations, interactions
- Software development
- Evaluation and acceptance
- Inclusion in repository

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Contribution to Open Source -1

Applet Features

- Animations – Six bar linkage, ATP synthesis
  - Base technology – Java
    - Platform independent
  - Interface with various types of media
    - Text, graphics, animations, multimedia
  - User interactions with exploration element
  - Self assessment

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Contribution to Open Source -2

Scalable Collaborative Mechanism

- **Project OSCAR provides a portal for :**
  - Users who can be either Developers , Mentors
  - Collaborative animation development
  - Easy, cost effective and scalable solution
  - Collaboration with other institutes developing similar Open Source content

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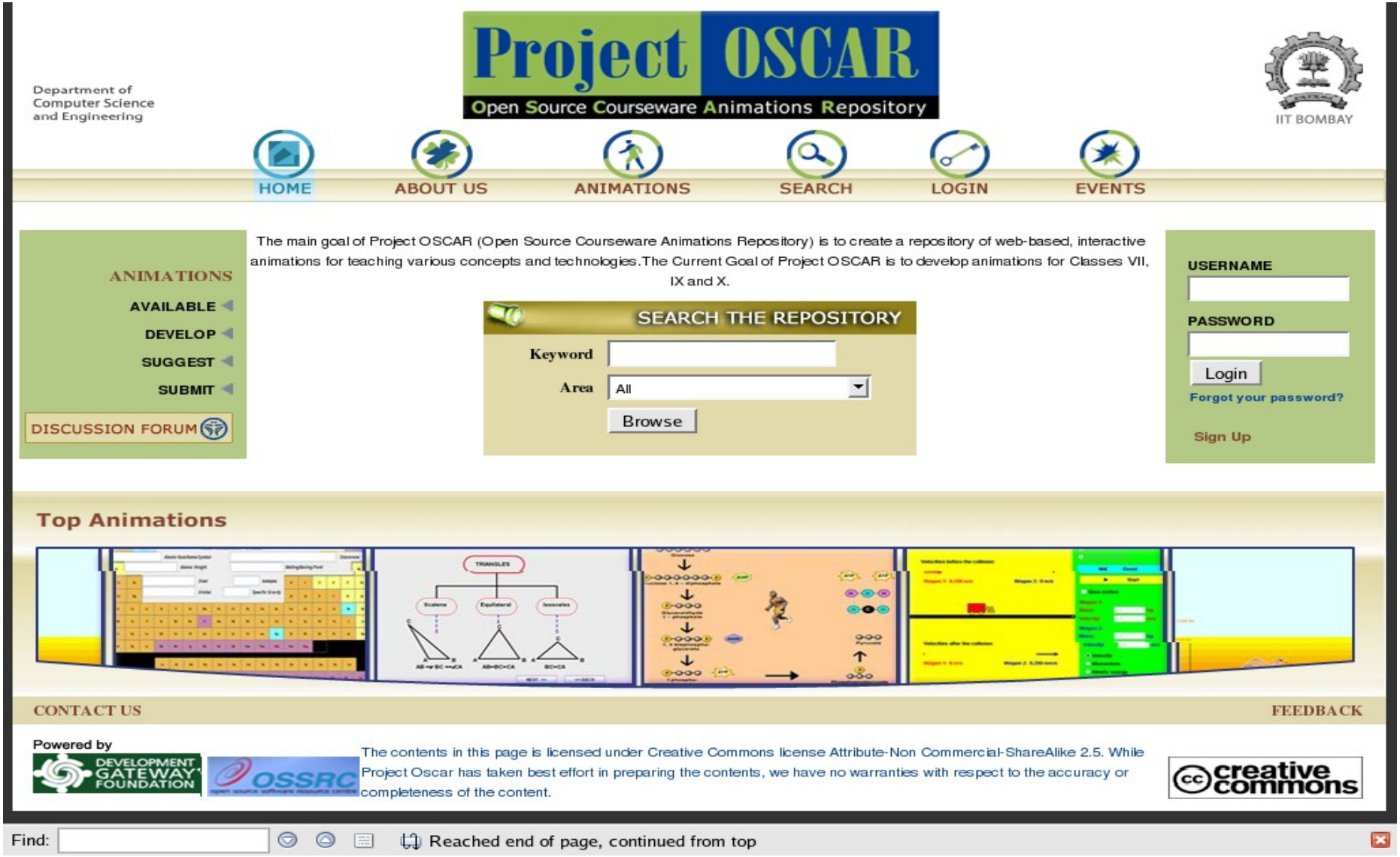
Contribution to Open Source -2

Scalable Collaborative Mechanism - Developers/Mento



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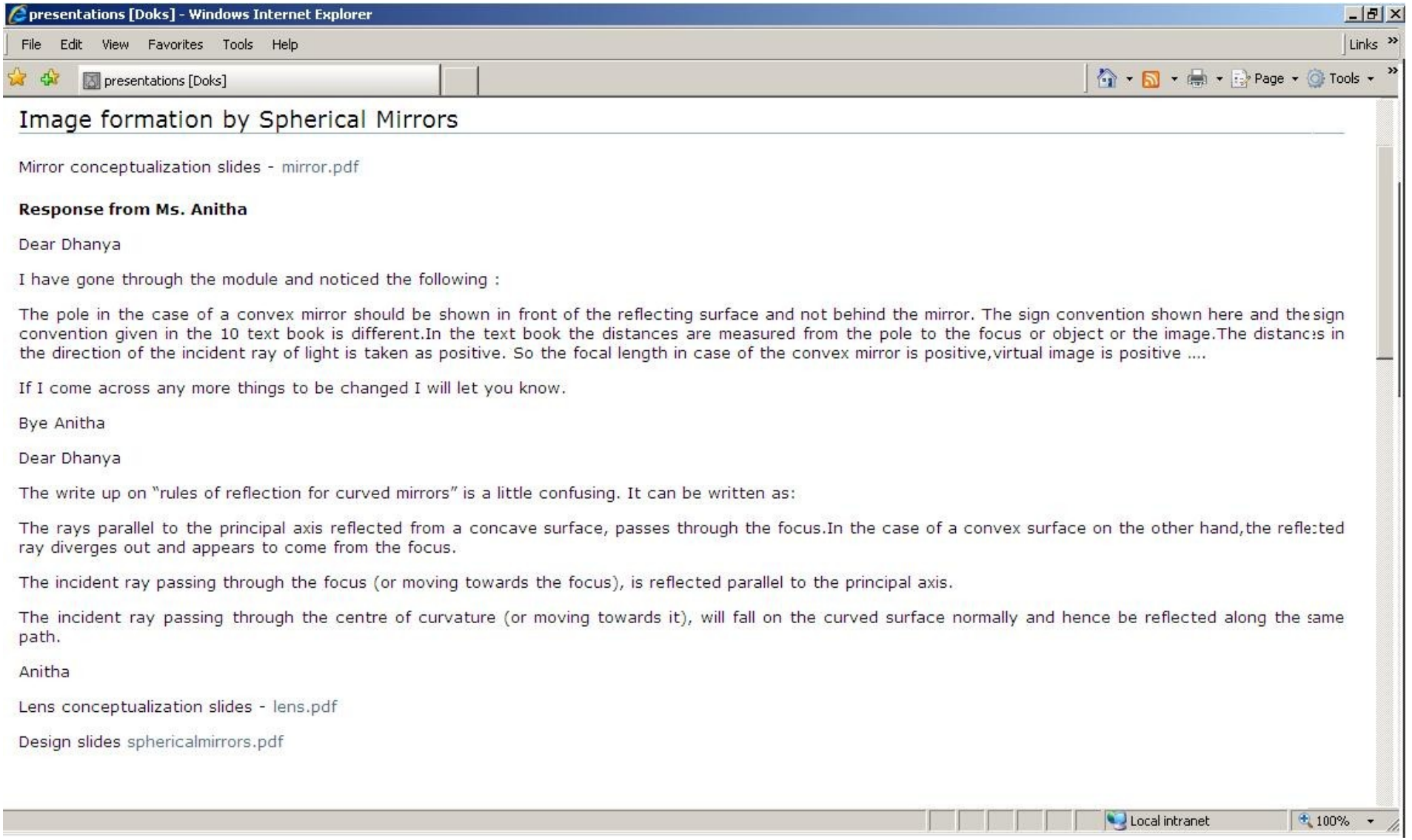
Contribution to Open source - 2

Scalable Collaborative Mechanism – Interactions on wiki



eIndia 2008:
C.Vijayalakshmi

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Students as developers

- **A win win situation**
  - Short and Long term training for students
  - Projects ideal for undergraduate students
  - Suitable for B.E./M.C.A final year and non-Computer Science majors also

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Curriculum and Teacher support

- **Curriculum**
  - Concepts from middle school to undergraduate level
  - Concepts suggested by teachers
  - Current focus eighth to tenth standard Maths, Physics, Chemistry, Biology
- **Teacher Support**
  - Explain the concepts effectively
  - Value addition to text book content
  - Can be used in class room teaching and for experiments in labs
  - Relevant applets can be sequenced to generate courseware

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Adaptation of content

- Local language translation
- Adapt content for resource constrained areas

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Research Offshoots

- Building animation authoring tools
- Developing courseware authoring tools
- Developing effective search engines
- Tool for translating content to local languages
- Developing an independent learning system for students

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Conclusions

- *Students (200) – Responses to conversant and non-conversant concepts*

  Concepts more clear,

  Enables self-study and revision of topics,

  Increase interest in subject

  Exploring concepts and gaining more insight

Unanimous: Teacher's should include these tools to enrich

learning and enhance our understanding

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Conclusions ..contd

- *Teachers (100) – Reflection on the usability and integration issues of the concept*

Motivates and attracts students

Virtual effect helps in visualizing and understanding the concepts

Encourage exploration and inquisitiveness

Applets and related resources

Improve the design and delivery of lessons

Increase student interest in the Subject

Increase aspiration to learn and achieve

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Conclusions ..contd

- Student developers
  - Absorbed by renowned software industries
  - Higher studies
- Statistics on the portal
  - 110 animations
  - 14529 hits since January, 08
  - More than 3000 downloads of applets

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The Team

Prof-In-Charge

Web Development Team

Content team

Communications team

Developers

Mentors

Administration team

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OSCAR Statistics

Area	Level	No. of animations	Avg. no. of downloads
Biology	UG	2	354
Chemistry	8-10	1	77
Data structures and algorithms	11-12	1	8
Maths	8-12	31	1231
Mechanical simulations	UG	5	544
Networking	UG/PG	28	1169
Physics	8-12	65	3120