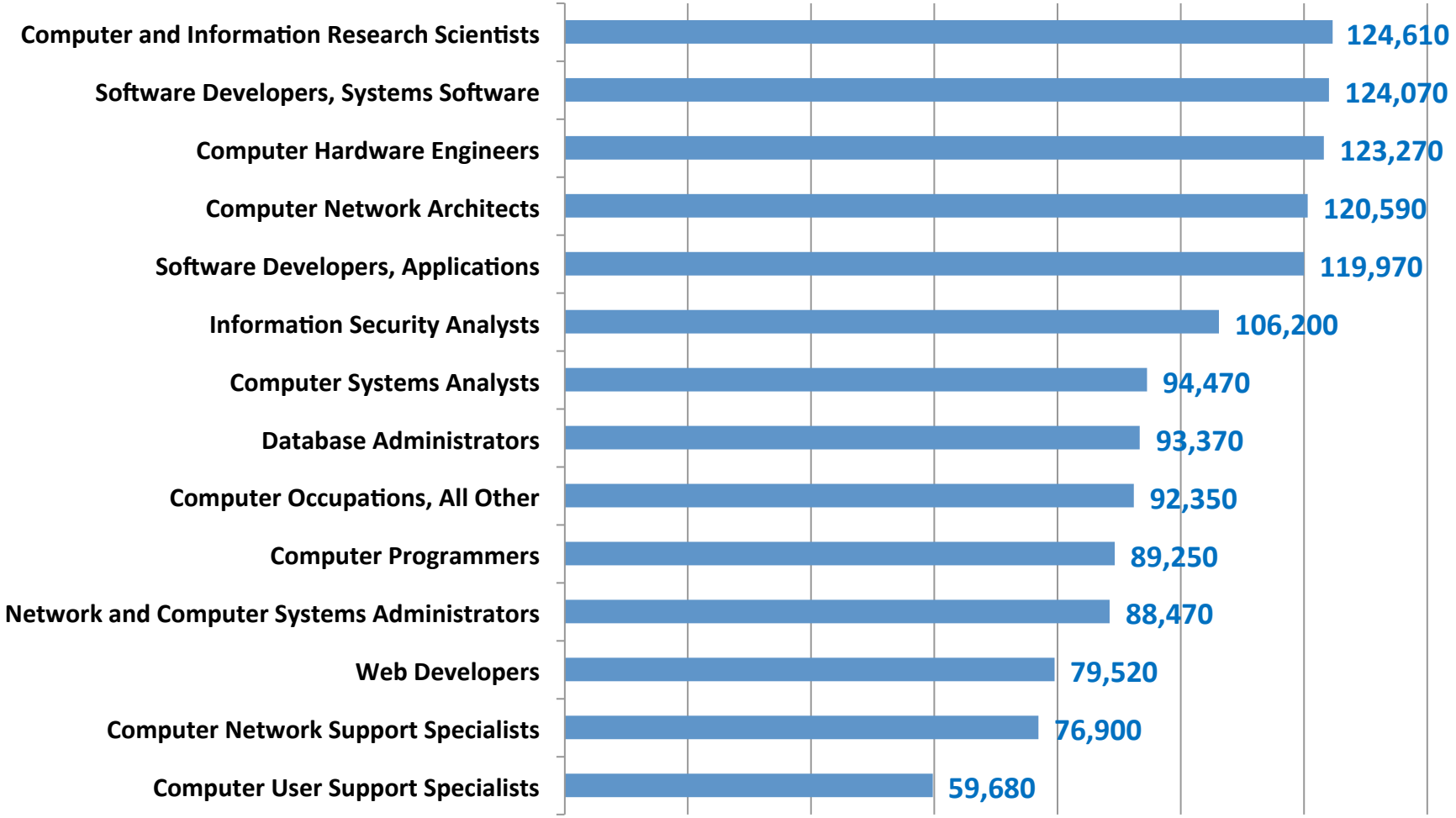
Major in Web Design and Engineering

Major in Web Design and Engineering

- Students may choose to major in Web Design and Engineering.
- They take courses in the following categories:
  - Web Design and Engineering
  - Arts, Humanities and Social Sciences
  - Mathematics and Natural Sciences
  - Educational Enrichment Electives

Average California Annual Salaries

Bureau of Labor Statistics, May 2014

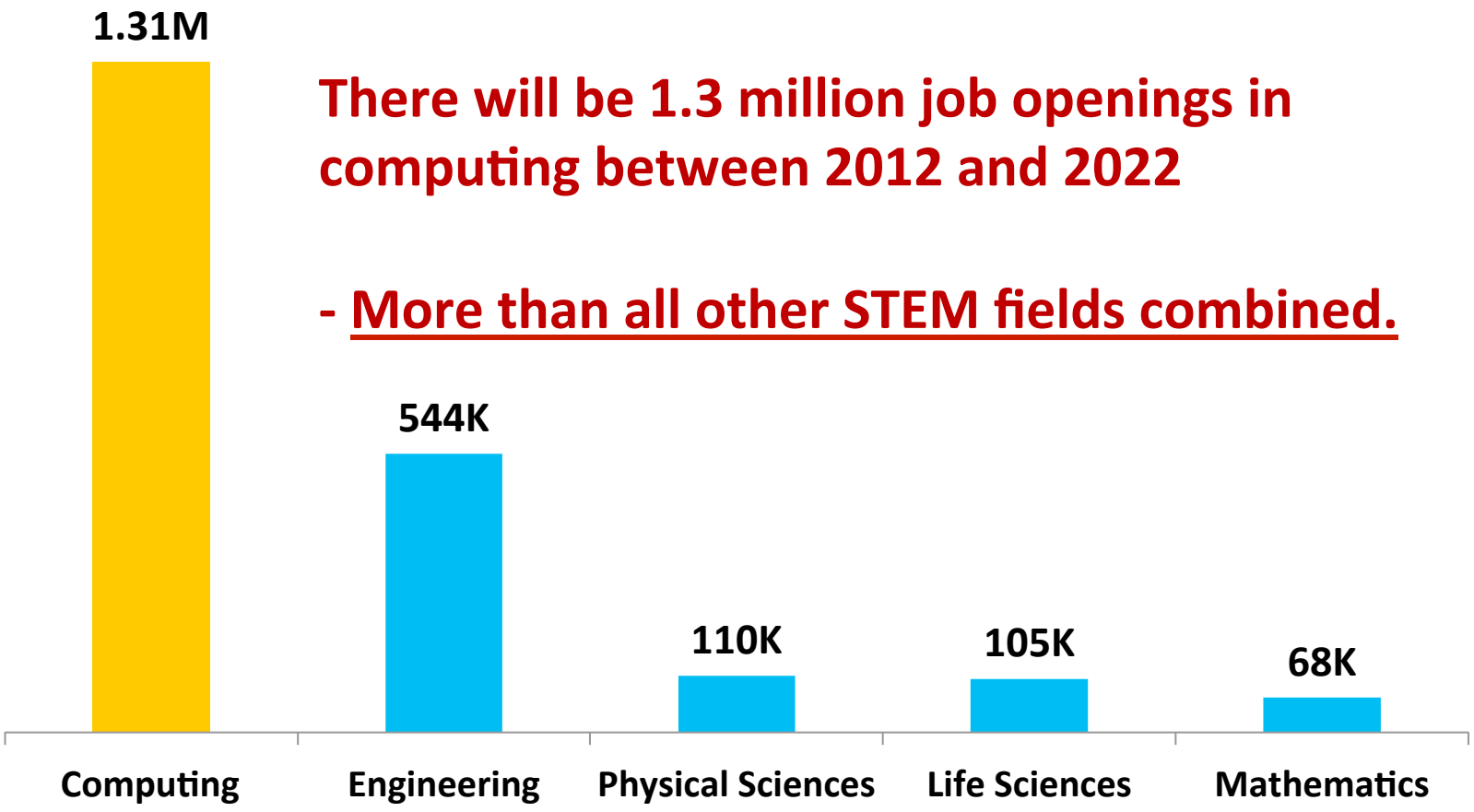


Source: http://www.bls.gov/oes/current/oes_ca.htm

National Employment Projections

There will be 1.3 million job openings in computing between 2012 and 2022

- More than all other STEM fields combined.

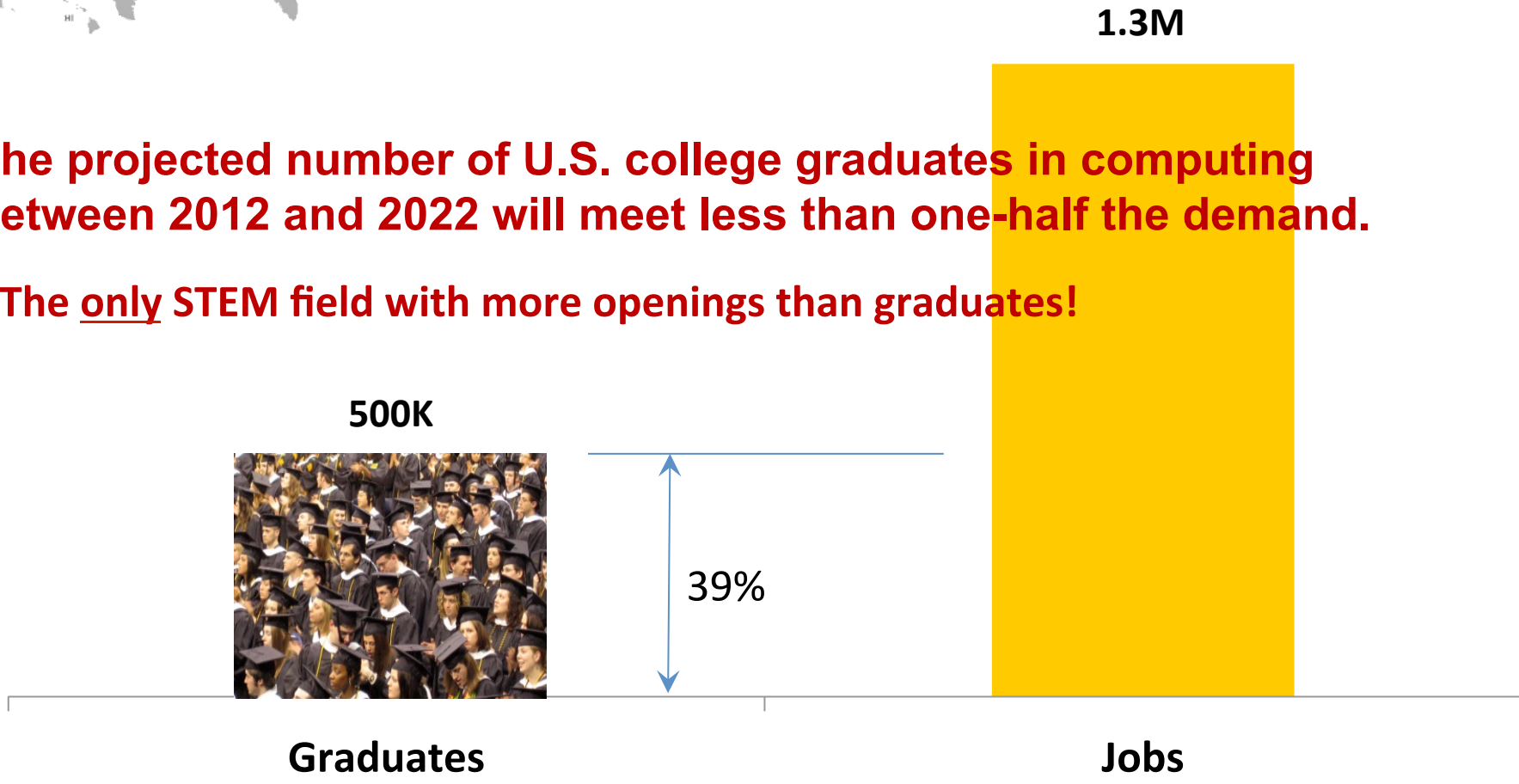


Bureau of Labor Statistics Employment Projections 2010-2020

National Supply and Demand

The projected number of U.S. college graduates in computing between 2012 and 2022 will meet less than one-half the demand.

- The only STEM field with more openings than graduates!



National Center for Women & Information Technology
Bureau of Labor Statistics Employment Projections, 2010-2020
National Science Foundation Division of Science Resource Statistics

Top Employers of SCU Computer Engineers

Source: LinkedIn for Education report provided by SCU Career Center

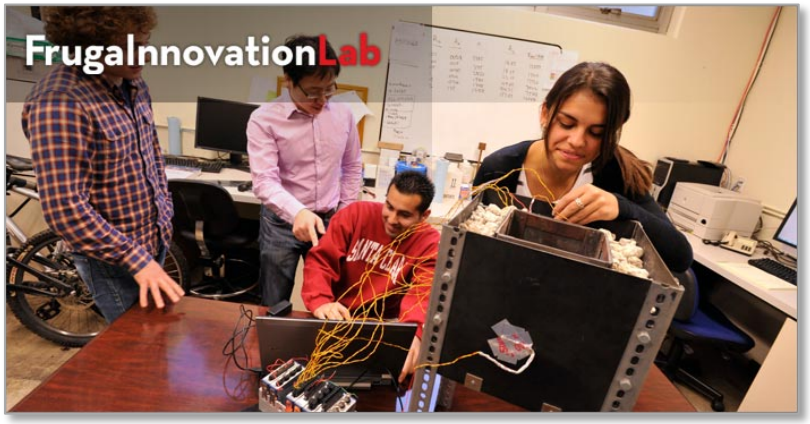
Popular Electives

- Computer Graphics
- Information Security
- Computer Forensics
- Artificial Intelligence
- Mobile App Development
- Databases
- Web Technologies
- Web Usability
- Web Infrastructure
- Web Information Management

Computing for Social Benefit

Community Technology Alliance

yth live
Igniting Youth Tech Health Innovation



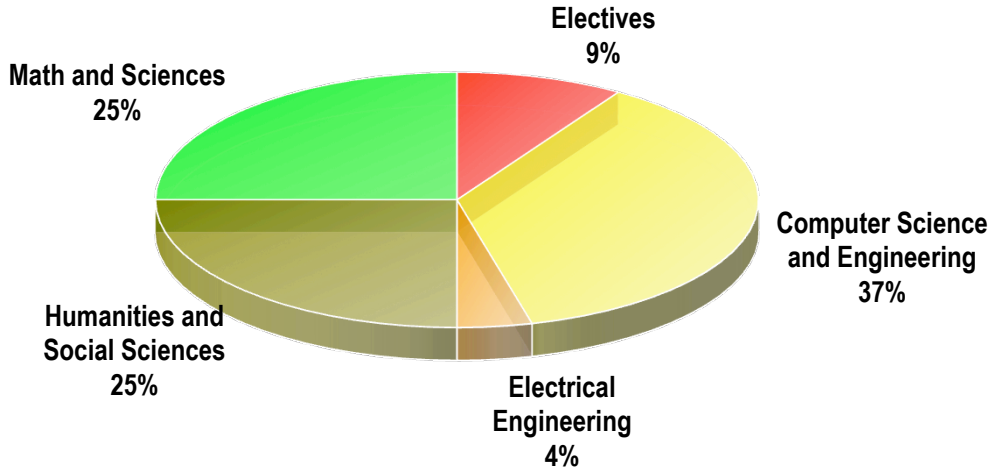
Mobile Computing for Social Benefit Lab

"Empowering the Underserved – One App at a Time"

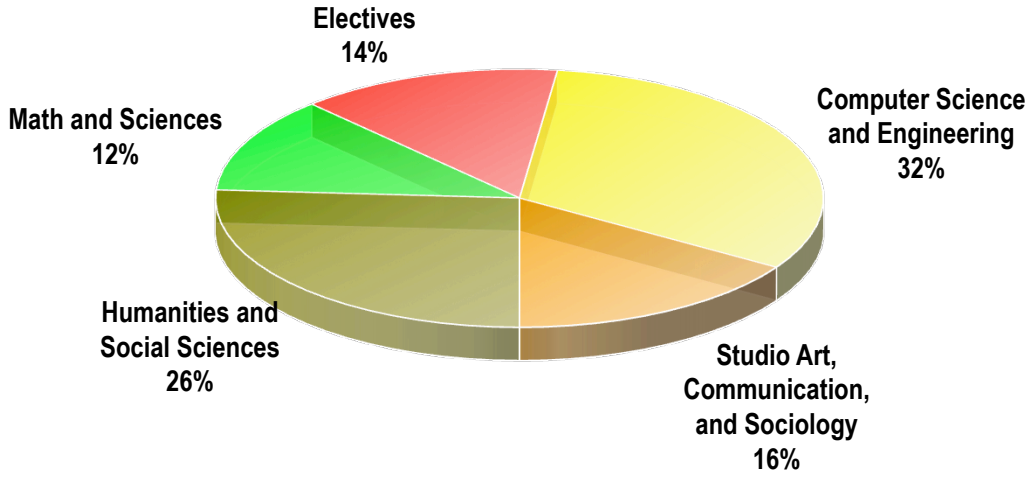
Programs

- Four-year B.S. degree programs
  - Web Design and Engineering
    Options for study abroad or co-op
  - Major courses start in freshman/sophomore year
  - Students with AP units could complete in less than 4 years
- Five-year combined B.S. – M.S. program
- Strong practical flavor
  - Extensive lab-based courses
  - Senior design capstone projects

Comparison of Majors by Subject Area



Computer Science and Engineering



Web Design and Engineering

CSE Web Technologies Program

Students of Web technologies are required to take courses in

- **Web programming**
  - HTML, CSS, JavaScript, JQuery, PHP, MySQL, XML technologies
- **Web infrastructure**
  - Web protocols
- **Web Usability**
  - Designing effective and accessible web sites and web applications
- **Advanced Web Programming**
  - Ruby on Rails
  - Web Security

Senior Design Capstone Project

- Students choose real-world projects
- Emphasis on team-based projects
- Interdisciplinary projects encouraged
- Lectures on
  - Entrepreneurship
  - Intellectual property & patent application
  - Ethical considerations
- Presentation at annual senior design conference
  - Spring quarter of senior yea
  - Panel of alumni and industry judges

Recent Senior Design Projects

Computer Sc. & Eng. / Web Design & Eng.:

- Event scheduler for iPhone
- Efficient energy usage through distr. scheduling
- Better, faster server
- Locality-based social networking
- 3D virtual universe (graphics)
- Desktop search utility
- Interactive learning app
- Law dashboard
- Social media organizer
- Smart phone app for MRI scans
- App for unemployed, uneducated women in India
- JK Fundacion Paraguaya

Interdisciplinary:

- Home automation
- Nano satellite
- Mobile platform for vocal pattern analysis

Web Activity for Today – Design a logo for your Webpage using Scalable Vector Graphics

With a little JavaScript

Activity

- You will design and add a logo for your web page (a basic template is given).
- You will design your logo using graphics for the web with SVG.

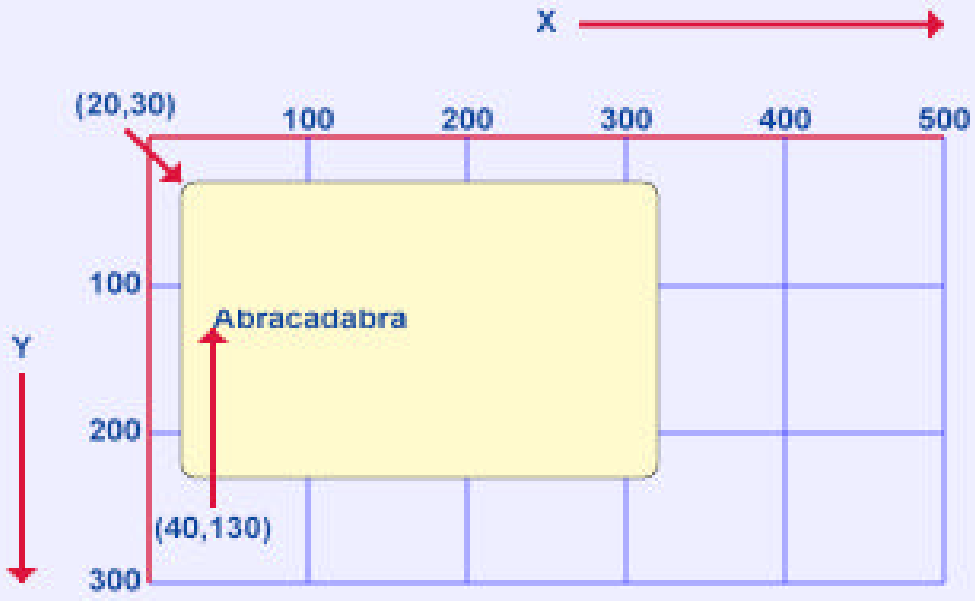
What is SVG?

- “SVG is a language for describing two-dimensional graphics for the web.
- SVG allows for three types of graphic
- objects:
  - Vector graphic shapes
  - Images
  - Text.”

SVG

- Raster graphics
  - The most common graphics format found on the web today in the form of gif and jpeg.
  - Contain information about each and every pixel within it.
- **Vector graphics**
  - Describe an image in terms of the lines, text and shapes that make up its composition.
  - This gives the ability to create sophisticated dynamic and interactive graphics.

SVG Coordinates




```
<rect x="20" y="30" width="300" height="200" rx="10" ry="10" />
<text x="40" y="130" >Abracadabra</text>
```

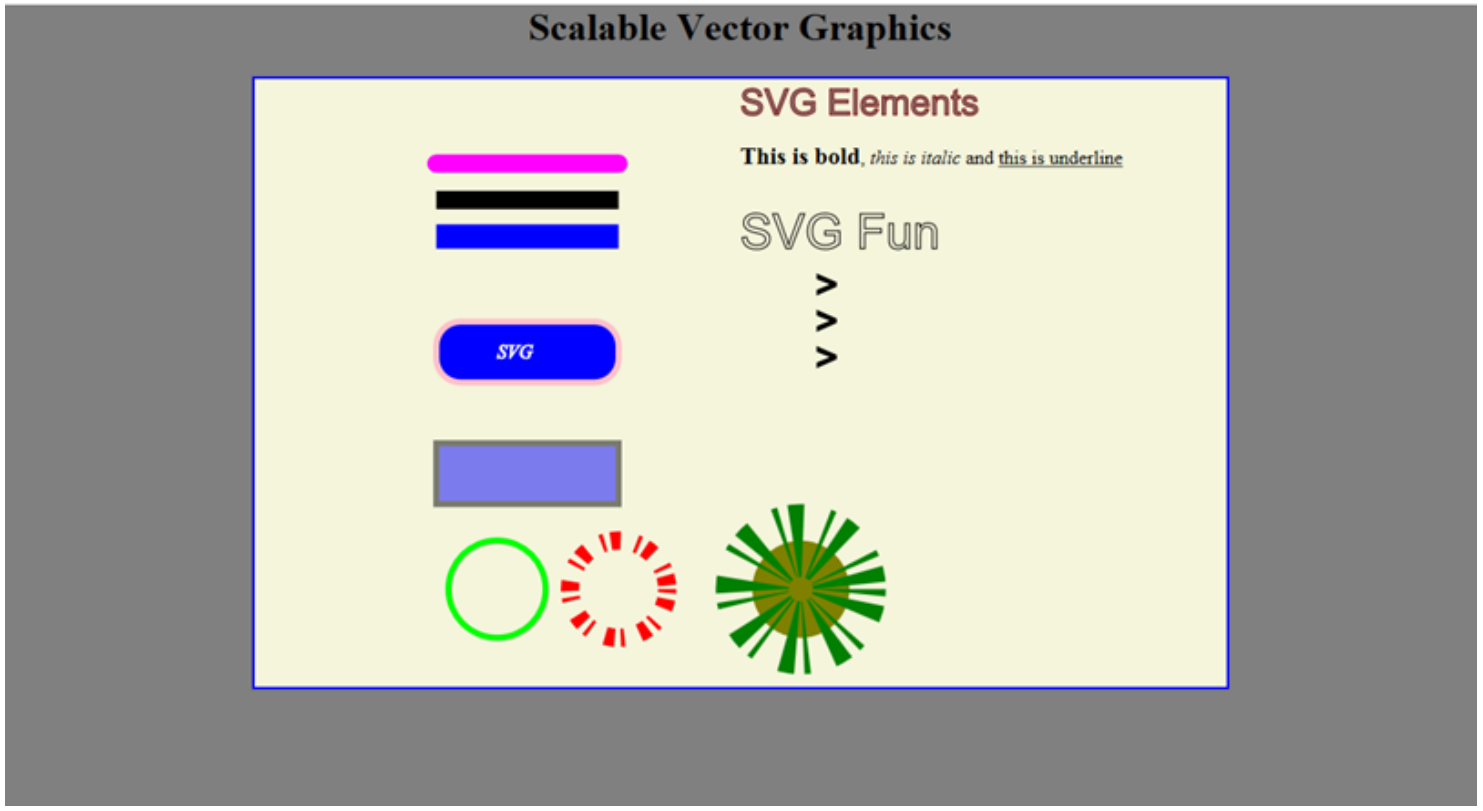
Copy the files

- **Copy the folder**, **SEEDS_2016** to your desktop.
- You will see the following files in the folder:
- **svgshapes.html**
- **aboutme.html**
- **Activity.ppt**
- **Exercise.ppt**

SVG Example

svgshapes.html

- Open the file, svgshapes.html in Chrome browser. You will see the web page as shown below:



SVG Example

svgshapes.html

- Now, open the file, svgshapes.html in *wordpad* (a text editor).
- You will see HTML with SVG elements.
- Follow my explanation.
- Any questions?
- Now, you are ready to work on your exercise.
- **Open Exercise.ppt**