Responsive web design (RWD) is a technique or can be stated as an approach to display a particular site in different display devices such as computer monitors, television screens, mobile phone screens, etc.

- All that contains in a website is all about contents.
- Contents are the things or the subject that delivers the actual information which is required.
- Information leads to the birth of technologies and contents are the package of data or information’s embedded together. Contents are just like water, they take the shape of the container they are put into.

**Why the need for responsive web design?**

Responsive Web Design (RWD) is a hot topic in the web world for the last few years creating a lot of buzzes.

- Technology and gadgets are now available at everyone’s hand being a laptop, a kindle-pad or a smartphone.
- Site owners were first thinking of building the same site with all the versions so that each of them is suitable for a device screen.
- This is a loss of resources, time consuming and expensive.

Then, the solution came – Responsive Web Design so that the single site could be viewed from different devices without any problem.

**Top Three Benefits of Responsive Web Design (RWD):**

1. **Internet usage is getting easier at a wide variety of screen resolutions:**

   After the approach of RWD, the internet is being used and accessed by a wide variety of people in different devices.

   With the increase of sales of smartphones almost a huge population using smartphones which are portable as well as handy to carry everywhere so they can access the internet from anywhere they desire.
2. **Search engine rankings are factored by the user experiences:**

On 2011, Google released Google Panda and included in the search algorithm. The goal of Google Panda was to improve the rankings of the high-quality websites.

But with the huge diversification in devices, high-quality user experience becomes all the more difficult. RWD is a beneficial solution for website owners because its goal is to improve user experience which clearly is a goal of Google's algorithm.

3. **The approach endorsed by Google itself:**

It was on 6th of June, 2012 Google announced- “This is Google’s recommended configuration”.

The main benefits to Google and the Web owners-Google did not have to make an index for multiple versions of a single site as well as it helps in link sharing.

It will also beneficial for the webmasters of the responsive sites as they just have to manage a single site.

**Top Tools to Check Responsive Web Design:**

Here is a list of few names of useful online tools to check Responsive Web Design:

- ResponsiveTest on GitHub
- Responsinator
- Responsive
- Am I Responsive?
- Viewport resizer
- resizeMyBrowser
- Screenfly
- Responsivepx
- Responsive Web Design Test Tool by Designmodo
- Responsive Web Design Test Tool by pixeltuner.de
Technologies used for Responsive Web Technology:

The two main factors to be followed:

- **Bandwidth:**

  High-resolution images are used for greater clarity in the retina display and in desktops. But, in mobile networks, it will consume more bandwidth and increase website loading time. Therefore, you need to replace that high-resolution image with a low-resolution image.

- **Art direction:**

  Images deliver a lot of detail will not be so clear in a smaller viewport. So we need an alternative method using CSS or some other technique.

The current technologies are as follows:

- **An easy and simple way in CSS is present-**

  ```
  img { max-width: 100%; height: auto; }
  ```

  This will enhance the image to its screen size but will neither save the bandwidth nor the art direction.

- **Adaptive images:**

  This is a server-side technique. It requires the .htaccess file and script files to be added on the website. This adaptive image technique will detect the screen size of the user’s device and automatically re-scale the image corresponding to the device.

- **HiSRC:**

  HiSRC is a simple JQuery plug-in that checks the user current internet connection. If the connection is slow, the low-resolution image is loaded and then again checks the connection and if the connection is high the high-quality image will be loaded. The HiSrc is one of the useful plug-ins for determining the established user connection.
• **Srcset attribute:**

This attribute accepts the image’s source path. It also supports the pixel density descriptors, such as 1x, 1.5x, and 2x.

• **Media attribute:**

This attribute is like the @media selector in CSS. It accepts all valid media queries.

Example:
```
<picture>
  <source srcset="mdn-logo-wide.png" media="(min-width: 600px)"/>
  <img src="mdn-logo-narrow.png" alt="MDN">
</picture>
```

• **Sizes attribute:**

This attribute accepts the width descriptors (e.g. 80vw). It denotes the proportion of an image to fill the view port.

• **Type attribute:**

This attribute accepts the different types of image file formats.

Example:
```
<picture>
  <source srcset="mdn-logo.svg" type="image/svg+xml"/>
  <img src="mdn-logo.png" alt="MDN">
</picture>
```

**The Development Tools and Technologies:**

- The Grid.
- HTML5.
- Ghostlab.
- Template Engine.
- Stylus – CSS Pre-processor.
- CodeKit – The Development Toolkit.
Summary

The responsiveness web design has changed the whole concept of accessing a website. Now website owners do not have to build more than one versions of the same website. Responsiveness is necessary element or characteristics in the world of web technology.

Hope you have understood the overview of what is a responsive web design. It is advisable to use the characteristics of responsiveness while building a website, which will efficiently help the website owners, users as well as to the search engines for indexing just like Google. etc.