Purpose: Since 2010, there has been a great attention about HTML5. Application developers and browser makers fully embrace and support the web of the future. Consumers have started to embrace HTML5, especially as more users understand the benefits and potential that HTML5 can mean for the future.

Modern browsers such as Firefox, Google Chrome, and Safari are offering better and more robust support for HTML5, CSS3, and JavaScript. The idea is to introduce the HTML5 to medical physics community for open source software developments. The benefit of using HTML5 is developing portable software systems.

Methods: The HTML5, CSS, and JavaScript programming languages were used to develop several applications for Quality Assurance in radiation therapy. The canvas element of HTML5 was used for handling and displaying the images, and JavaScript was used to manipulate the data. Sample application were developed to: 1. analyze the flatness and symmetry of the radiotherapy fields in a web browser, 2. analyze the Dynalog files from Varian machines, 3. visualize the animated Dynamic MLC files, 4. Simulation via Monte Carlo, and 5. interactive image manipulation.

Results: The programs showed great performance and speed in uploading the data and displaying the results. The flatness and symmetry program and Dynalog file analyzer ran in a fraction of second. The reason behind this performance is using JavaScript language which is a lower level programming language in comparison to the most of the scientific programming packages such as Matlab. The second reason is that JavaScript runs locally on client side computers not on the web-servers.

Conclusions: HTML5 and JavaScript can be used to develop useful applications that can be run online or offline on different modern web-browsers. The programming platform can be also one of the modern web-browsers which are mostly open source (such as Firefox).