John Smith's Personal Website

Google AdSense Advertisement

Adsense

Ad Clicks

John Smith

$

Page Impressions
(views)

Google
AdSense

Google AdSense is a way for websites to make
money from advertisement clicks and page views.

How AdSense Works

2. AdSense sends relevant advertisements from AdWords to websites

1. Google AdWords collects advertising data

3. AdSense collects the user's webpage visiting history and website metadata, and finds the best-matching advertisements (using the "Quality Score" algorithm).

Forbes

YAHOO!

The Weather Channel

4. Websites receive money per-click and per-impression from the advertisements

Explore – Impact of Computing Innovations
Written Response Submission Template

Please see [Assessment Overview and Performance Task Directions for Student](#) for the task directions and recommended word counts.

Computational Artifact

2a)

My computing innovation Google AdSense, a solution for websites to create revenue by hosting advertisements. Approximately 12.5 million websites (by December 2017) use AdSense ("Websites using Google Adsense"), it comprises over half of all digital advertising revenue (Ingram), and advertising constitutes over 80% of Google's 2017 income ("Alphabet Investor Relations"). The first page of my computational artifact shows its general purpose: to allow people to monetize their AdSense-enabled website. The second page describes how it functions by showing how it collects data from the user, webpage, and AdWords, and pays out on a per-click and per-pageview basis.

2b)

My computing artifact is a three-page PDF with the graphics created with GIMP (GNU Image Manipulation Program). I split it up into an introduction page that gives a general sense of AdSense's intended purpose, a page with a description of how it works, and a page with statistical data to emphasize its impact. The logos were all downloaded from the web and their sources were cited. I added text and other graphics (e.g., arrows, clipart icons) using GIMP. The graphics were all created in PNG format, but copied into a PDF document to be submitted.

Computing Innovation

2c)

One beneficial economic effect of AdSense is the monetization of websites for any website owner, creating a new financial option for creators of digital content (e.g., writers, artists). Before AdSense, only major websites were paid by advertisers to host advertising. AdSense revolutionized digital advertising by allowing any webpage with AdSense installed to host advertisements and generate revenue (Cook). While Google collects 32% of the payment from the advertiser ("15 AdSense Facts & Stats You Wouldn't Have Ever Found"), the remaining 68% allowed many people to make a non-trivial income simply by having a webpage with AdSense. This is especially beneficial to people who spend their career publishing content online, such as bloggers or digital artists, that would usually not generate any revenue, for which AdSense can act as a partial or full income.

A harmful effect of Google AdSense is the rise of what are known as MFA (Made For AdSense) webpages, low-quality websites filled with advertisements and usually containing a cluster of commonly-searched information copied from other websites so that they show up on search results webpages (Karch). Many are designed with SEO (Search Engine Optimization) to appear more often on search result pages and with arbitrage— where advertisements lead to other MFA pages with higher-paying keywords— to improve their profit (Karch). Thus AdSense affects society by promoting low-quality, profit-oriented websites that negatively impact the quality of the Internet, in turn making researchers and students using search engines less productive.

2d)

If AdSense is installed on a website, it collects the advertising data stored by Google AdWords, which includes the price that the advertiser pays per advertisement click, relevant keywords, and the image, text, and/or video data that comprise the advertisement. AdSense also collects data about the user's visited websites via tracking cookies, as well as metadata from the webpage. It runs a "Quality Score" algorithm based on the price-per-click and relevance of an advertisement to the webpage's content and the user's interests from their cookie history ("How does AdSense work?"). Its output is the choice of advertisement to be served on a webpage, which aims to be relevant to the user's interest or need.

A potential data privacy concern is that Google AdSense uses tracking cookies. Cookies are small text files in which websites temporarily store information about viewers of those websites, and usually can only be accessed by the website that created them. They are often used in digital shopping carts or for persistent login sessions and are not inherently dangerous. However, tracking cookies differ from regular cookies because they can be accessed by multiple websites ("Tracking Cookie Description"). In particular, AdSense stores a list of AdSense websites that the user has visited, allowing them to collect data about the user's interests. The concern is that while this allows relevant advertisements to be served, Google also has control over this data and can sell it to other companies that use targeted advertisements (e.g., Facebook or Amazon).

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2e)

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