

Introduction to Web Science

Assignment 11

Prof. Dr. Steffen Staab

staab@uni-koblenz.de

René Pickhardt

rpickhardt@uni-koblenz.de

Korok Sengupta

koroksengupta@uni-koblenz.de

Olga Zagovora

zagovora@uni-koblenz.de

Institute of Web Science and Technologies

Department of Computer Science

University of Koblenz-Landau

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Tutorial on: February 10, 2017, 12:00 p.m.

This assignment focuses on **Online Advertisement**. As discussed in the class, teams with exact similar answers that give an indication of copying will receive null points for those questions. If you are taking answers from some source, please cite your sources.

Team Name: Uniform

Team Members: Jalak Arvind Kumar Pansuriya, Madhu Rakhal Magar, Pradip Giri.

1 Online advertisement (10 points)

In the videos about online advertisement, you learned about the three different payment methods for online advertisement.

1. Name all three methods.
2. Mention the advantages and disadvantages, for publisher and advertiser, of all the payment methods and explain them in your own words.
3. Provide real world examples for the three payment methods.

Answers:

1. The three payment methods :
 - a) CPM (Click Per Mille)
 - b) CPC (Cost Per Click)
 - c) CPA (Cost Per Acquisition)
2. **a) CPM (Click Per Mille) :** It is calculated on the thousands of ad displays to the potential users regardless of it is clicked by user or not. Ad displays are known as the "impressions".

Advantages for Advertiser: It is little bit inexpensive, because advertiser pays for every thousands views not for each click. Advertiser can track the impressions by using technologies such as tracking bugs to check whether it is delivered or not.

Advantages for Publisher : Publisher uses different type of technology to increase the page views.

Disadvantages for Advertiser : "Impression Fraud" can be happened and people don't click on ads but still count as customer which lets advertiser to pay more money.

Disadvantages for Publisher : Publisher gets less money.

b) CPC(Cost Per Click) : It means advertiser pays each time when someone really clicks on the ads. Whenever customers don't visit the site or they do only see the ads, advertiser don't need to pay for it unless they did click on it.

Advantages for Advertiser : Advertisers can use CPC when they wants traffic directed to their sites and CPC also decrease the risk of overspending.

Advantages for Publisher : Publisher can get money for each click whether that product is going to sale or not.

Disadvantages for Advertiser : If advertiser wants to spread awareness about brand, CPC is less recommendable. In order to comparison with traffic of other advertisers, CPC can be more expensive. But, it is beneficial for publishers. CPC is depending upon a customer clicking on ads or not for publisher to get commission. In addition, not each click on ads shows that customer has interest in it. Half of the clicks should be accidental which are redirected visitors to leave the new site quickly.

Disadvantages for Publisher : Advertiser would not pay if customers are only viewing the website.

c) CPA (Cost Per Acquisition) : It means that each time order processed successfully advertiser must pay to publisher.

Advantages for Advertiser : Advertiser don't need to pay until customer purchased that product or completed actions at the advertiser side.

Advantages for Publisher : Publisher can make more money using latest technology.

Disadvantages for Advertiser : For publisher, payment amount is bigger but more frequent.

Disadvantages for Publisher : If not a single customer will buy any product, Publisher won't get anything.

3. Real World Examples:

a) CPM : Advertiser use it for brand awareness. It is also used by startup who wants to spread information among new customers as well news channels also use it.

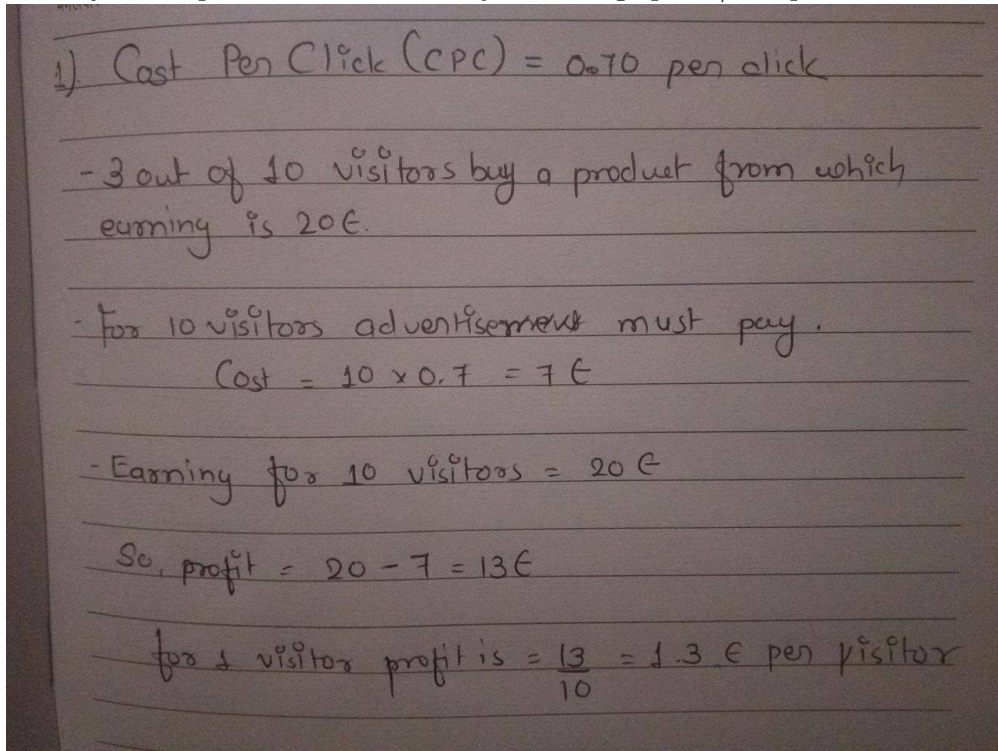
b) CPC : We can consider the real estate portal for tenants and landlords as an example of CPC. Example : "www.wg-gesucht.de" People see the ads and click on it to view more information about house of their interest. It doesn't matter that they will buy or rent that house for sure. Publisher can get paid without having any single sale. Some more examples are bing, google and facebook, etc.

c) : It uses for any brand in which advertisers must pay for only their successful purchase.

2 Payments in Online Advertisement(15 points)

Provide the complete calculation with your solutions for the following questions.

1. An online advertisement company offers you to advertise your website on a cost-per-click base (CPC) with a cost of 0.70€ per click. Assuming that in average three out of ten visitors of your website are buying a product from which you are earning 20€, would you accept this offer? What is your average profit/loss per visitor? Answer:



Handwritten solution for Question 1:

1). Cost Per Click (CPC) = 0.70 per click

- 3 out of 10 visitors buy a product from which earning is 20€.

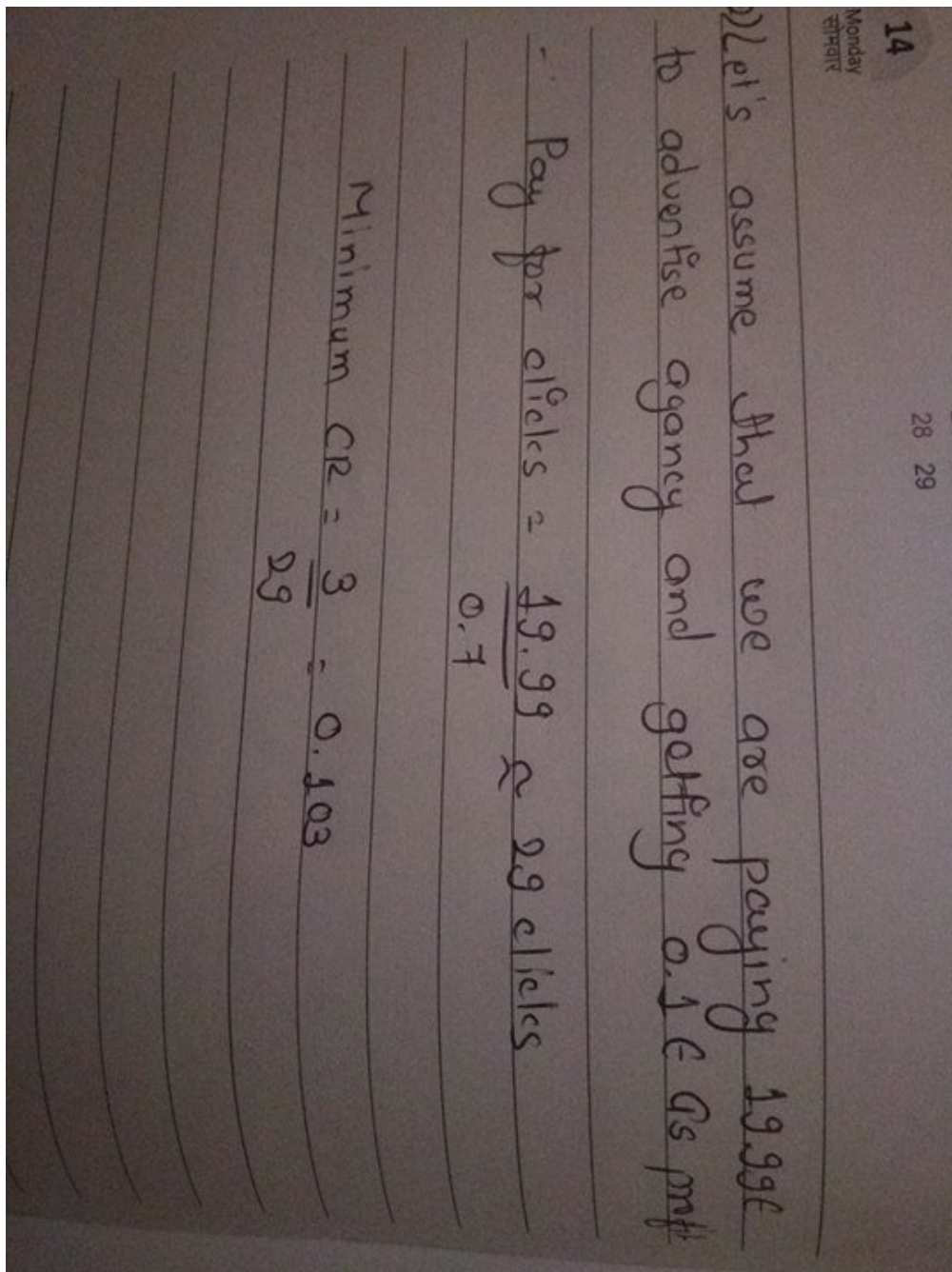
- For 10 visitors advertisement must pay.

$$\text{Cost} = 10 \times 0.7 = 7 \text{ €}$$

- Earning for 10 visitors = 20 €

$$\text{So, profit} = 20 - 7 = 13 \text{ €}$$
$$\text{for 1 visitor profit is} = \frac{13}{10} = 1.3 \text{ € per visitor}$$

2. What would be the minimal conversion rate (CR) to guarantee your profit? Answer:



3. Two online advertisement companies A and B are making you offers to advertise your website. Company A follows a cost-per-mille (CPM) model with a cost of 2,40€ for displaying your banner advertisement thousand times. Company B follows a cost-per-action (CPA) model charging a commission of 6% from every profit generated on your website through clicks on the banner ad. Assuming a click-through-rate

(CTR) of 0.5%, a conversion rate (CR) of 20% and an average profit of 40€ for every transaction on your website, which offer is the best?

Answer:

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गुरुवार

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28 29

9) Model A
CPM = 2.4€ for thousand views of banner

Model B
CTR = 0.5% = $\frac{5 \text{ clicks}}{1000 \text{ views}}$
CR = 20% = $\frac{20 \text{ successful}}{100 \text{ clicks}}$
average profit for each transaction = 40€

CPA cost is a commission of 6% on each profit.
Commission on each profit = $40 \times \frac{6}{100} = 2.4€$

For thousand views of banner or
successful transactions = $\frac{20}{100} \times 1000 = 200 \text{ successful}$

total cost, CPA = $200 \times 2.4 = 480€$

⇒ In both model, for every transaction cost is
same of 2.4€. So, Both models are equal.

4. Assuming an online advertisement campaign for a website has obviously a high click-through-rate (CTR), but the earnings from the website are still very poor.

What do you think could be the problem (please provide your answer in one or two paragraphs)?

Answer:

High CTR and low CR indicates that the ad is becoming successful. But, sometimes following type of problems can be happened through which website is still giving bad result.

- 1) Ad is less interactive.
- 2) The contents of the website and ads are different.
- 3) The aim of website is not clearly specified.
- 4) A lot of fraud clicks has been generated.

Whenever CTR affects the quality score of ad, website can be became bad.

3 Online vs. TV Advertisement (10 points)

1. Which of the three payment models is most similar to advertisement on TV (*explain your choice and also why you think other models are not similar*)?
2. What do you think are the most important advantages of online advertisement compared to advertisement on TV (*highlight 5 advantages and explain each of them*)?

Answers:

1. CPM is the similar model to Tv advertisement, because in this model advertiser pays certain decided amount for 1000 views of ads to advertise agency. In Tv ads, advertiser pays some fixed amount to show their ads on Tv regarding specific region or no. of users.
2. Advantage of online advertisement :
 - a) It provides more interactive ads compared to Tv ads by which user can easily attract to these online ads. For example, In online shopping, Tv ads let customer to perform some actions like call a number or go to store whereas online ads redirect to the website or the option of online payment on the spot.
 - b) Online ads are cheaper than Tv ads. It can easily get viral by without paying more for it. Online ads can be shared anywhere in a globe over the internet to increase awareness. Ex., through Facebook, E-mail, Twitter, youtube, etc.
 - c) In online ads the count of viewers can easily be measured through the Click through rate, Bounce rate and Conversion rate.
 - d) Online ads push notification through social media when viewers are offline where Tv ads have time constraints.
 - e) Online ads provide customization by which advertiser can update it anytime.

Important Notes

Submission

- Solutions have to be checked into the github repository. Use the directory name `groupname/assignment11/` in your group's repository.
- The name of the group and the names of all participating students must be listed on each submission.
- Solution format: all solutions as *one* PDF document. Programming code has to be submitted as Python code to the github repository. Upload *all* `.py` files of your program! Use **UTF-8** as the file encoding. *Other encodings will not be taken into account!*
- Check that your code compiles without errors.
- Make sure your code is formatted to be easy to read.
 - Make sure you code has consistent **indentation**.
 - Make sure you comment and document your code adequately in English.
 - Choose consistent and intuitive names for your identifiers.
- Do *not* use any accents, spaces or special characters in your filenames.

Acknowledgment

This latex template was created by Lukas Schmelzeisen for the tutorials of "Web Information Retrieval".

LA_TE_X

Currently the code can only be build using **LuaLaTeX**, so make sure you have that installed. If on Overleaf, there's an error, go to settings and change the **L**A_TE_Xengine to **LuaLaTeX**.