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# “After the Break” ASCII Art

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# What is ASCII Art?

- Creating images on a computer using the ASCII characters to build up an image
- Why?
  - Early printers often lacked graphics ability and thus characters were used in place of graphic marks
  - To mark divisions between different print jobs from different users, bulk printers often used ASCII art to print large banners, making the division easier to spot so that the results could be more easily separated by a computer operator or clerk
  - ASCII art was also used in early e-mail when images could not be embedded
  - Used today in Twitter and text messaging

<http://www.columbia.edu/cu/computinghistory/la36.html>



<http://www.multicians.org/primer.html>

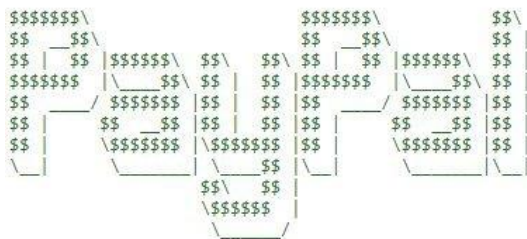
(Based on [https://en.wikipedia.org/wiki/ASCII\\_art](https://en.wikipedia.org/wiki/ASCII_art))

[illegible][illegible]

# ASCII Art “HTML Recruiting” Fad...

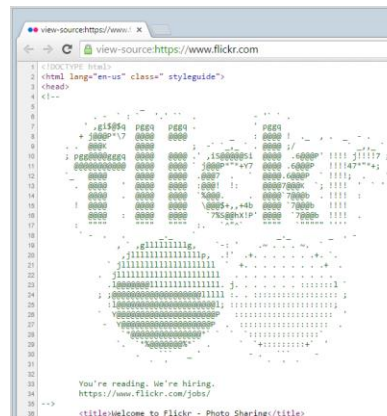
[illegible]

```
<title>Merchant Services and Payment Solutions for Your Business - PayP
<!--
```



Now hiring @ <http://jobs.ebaycareers.com/search/paypal-jobs>

→



# ASCII Art: Image to ASCII Art Algorithm Discussion

The screenshot shows a web browser window displaying a Stack Overflow question. The browser's address bar shows the URL: <https://stackoverflow.com/questions/394882/how-do-ascii-art-image-conversion-algorithms-work>. The page title is "How do ASCII art image conversion algorithms work".

The question was asked by user **splattne** on Dec 27 '08 at 10:43. It has 58.6k views, 37 answers, 168 votes, and 226 comments.

There are 5 answers. The top answer is by user **Ali Afshar** (25.6k views, 4 answers, 67 votes, 93 comments), posted on Dec 27 '08 at 12:43. It is marked as the best answer with a green checkmark.

The answer text is as follows:

The big-picture-level concept is simple:

1. Each printable character can be assigned an approximate gray-scale value; the "at" sign @ obviously is visually darker than the "plus" sign +, for example. The effect will vary, depending on the font and spacing actually used.
2. Based on the proportions of the chosen font, group the input image into rectangular pixel blocks with constant width and height (e.g. a rectangle 4 pixels wide and 5 pixels high). Each such block will become one character in the output. (Using the pixel blocks just mentioned, a 240w-x-320h image would become 64 lines of 60 characters.)
3. Compute the average gray-scale value of each pixel block.
4. For each pixel block, select a character whose gray-scale value (from step 1) is a good approximation of the pixel block average (from step 3).

That's the simplest form of the exercise. A more sophisticated version will also take the actual *shapes* of the characters into account when breaking ties among candidates for a pixel block. For example, a "slash" (/) would be a better choice than a "backward slash" (\) for a pixel block that appears to have a bottom-left-to-upper-right contrast feature.

Below the answer, there are two comments. The first comment is by user **Tall Jeff** (19.6k views, 7 answers, 39 votes, 58 comments), posted on Dec 27 '08 at 16:07. It says: "Nice Answer and concise summary - Tall Jeff ♦ Dec 27 '08 at 16:07". The second comment is by user **kinll\_jgum** (19.6k views, 7 answers, 39 votes, 58 comments), posted on Mar 15 '13 at 3:24. It says: "can you give a sample list of character in the order of darkness. doesn't matter which character. I just want to draw quick contour plots in terminal. 10 would be ok, more is better (stackoverflow.com/questions/15335412/...) - kinll\_jgum Mar 15 '13 at 3:24".

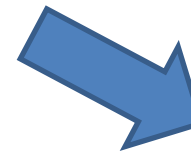
The right sidebar shows a "Linked" section with 5 items, a "Related" section with 16 items, and a "Hot Network Questions" section.

The bottom of the browser window shows a taskbar with a file named "java5.zip" and a "Show all downloads..." button.



# Java Demo

- Example from:  
<http://codehackersblog.blogspot.com/2015/06/image-to-ascii-art-converter-in-java.html>
- Download Img2Ascii.java and jpg files from Blackboard
- Compile with command:
  - Javac Img2Ascii.java
- Run by typing:
  - Java Img2Ascii
- Examples:
  - Java Img2Ascii Olympic\_rings.jpg
  - Java Img2Ascii SonOfMan.jpg



# ASCII Art...Some Tools

- Example Java code (version posted) from <http://codehackersblog.blogspot.com/2015/06/image-to-ascii-art-converter-in-java.html>
- See demo for converting an image into ASCII Art at <http://www.glassgiant.com/ascii/>
- JavE Editor is an ASCII Art editor (written in Java) at <http://jave.de/>
- Good old Notepad and create “by hand”
  - For example, let’s do “A” in block letter style together...