

Website Architecture

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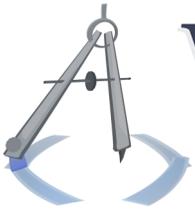
Freelancing Guide

A collection of advice for starting to freelance in the software game.

Michael Serritella

Summer 2012





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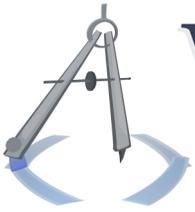
Intro to Freelancing

Freelancing is the art of coasting through life without getting a job, except that you work twice as hard as most people and you have 8 jobs.

It is not for everyone, though you do already have an advantage in that software is not the average product; it is particularly compatible with freelancing in today's market. In this document, we will see an overview of the freelancing process, from getting started to building clientele and beyond.

Perhaps primarily, let us note that freelancing is not the same as being an entrepreneur, though there is much overlap and practically any entrepreneur gets his or her start with freelancing. Freelancing fits the model of trading time for money, and entrepreneurship is building wealth with a potentially high rate of growth.





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Building the Foundation

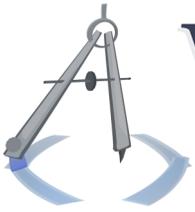
In order to be a successful freelancer, you must be hardworking and successful in a few different areas. You have to be a skilled computer scientist and at least fairly well-rounded. The most important foundational step is the most simply expressed: become very, very good at what you do. Developing excellent skills requires work outside of school, including working on topics that were not addressed in school. There is probably no scientifically-tested formula for success, but here is one path that has been charted.

Computer Skills

Your mental tools will need to be sharp. People often ask: how do you find projects? What do you work on? Here are a couple guidelines:

Don't look too far Do you have any pet projects, hobbies, or team projects for school that are particularly interesting? Try making a site for them or representing their functionality in web form (e.g. a virtual/online version of a board game).





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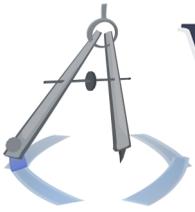
Learn the language Learn everything you can about the languages you're going to use. Read official documentation and also the opinions of experts, such as blogs or books. You will learn new ways to conceptualize and solve problems; it should give you an edge in being able to solve problems more efficiently or even being able to solve more exotic problems than others can. Along the way, you will see plenty of example programs or snippets and you will probably get project ideas from them.

Collaboration Skills

Working with clients is a collaborative activity. It is not exactly like collaborating in school, where multiple people write code, but you will need to understand the needs of other people, compromise, and refine as a group. It helps to build experience doing this before you start with a client.

You should probably start in a relaxed environment without real money or deadlines. If your friend has a terribly-built hobby site, offer to be the web guy: rebuild it and maintain the site with him. The same thing can be done with a student organization or a club at university, a family-run business, or a business run by a friend. You should probably not accept





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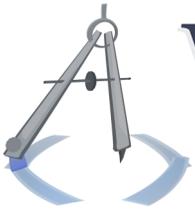
any money for your duties. This removes pressure from the situation when you make a mistake or you take longer than expected. Use this as an opportunity to try new things continually; offer to try building new site features on a somewhat regular basis. As you read about the state of the art, this can be your playground, and perhaps most importantly, it can show you what happens when experimenting and working with clients in all kinds of situations.

Communication Skills

If a client would normally work with a team or a business, you have to represent the skills of an entire team or business. You must be able to talk to people, tell them what to expect, how things are going, etc. You will need to write well, read well, and explain things thoroughly, especially for online jobs but also for real-life jobs.

To improve at this, it is probably not enough to scare you with negative motivation: If you don't do this, you will fail. It's probably true, but saying so does not influence most people. You should learn the art of language, not because it would





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suck if you didn't, but because language is beautiful. The more you know of language, the more you can appreciate the artistic choices of some of the most impressive people on this planet.

So: What are some enjoyable ways to improve your language skills?

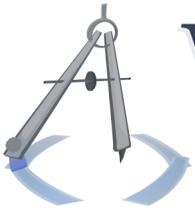
Consume excellent art The more examples of excellence you see, the more you will realize why they are excellent. Use a good bit of your own taste and trust the taste of people who are not just trying to sell you something. Listen to smart interviews and radio programs, read classics of literature, and even watch the greats of stand-up comedy, and you will learn the language arts.

Write what you know It is usually easiest to write about what you feel and what you enjoy. You will have no shortage of subject matter. Write a review of your favorite album; explain what your favorite songs or paintings mean to you. You don't have to share it with anyone.

Getting Started IRL

How do you build rep IRL? Get people to notice you and employ you? This is typically a slow process, and it is difficult to stand





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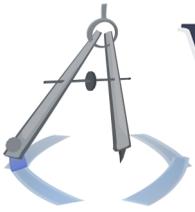
out among a peer group of computer scientists or friends.

Most importantly, you have to let people know that you are a freelancer. You don't have to hand out pastel-colored flyers, but just mention it to people when they ask you what you do; mention it on Facebook, in passing or directly. Once people know this about you, they can think to consider you for jobs. If they don't even know you do freelancing, what are the chances they would offer you a gig?

It seems possible to branch out from school and professional contacts you have met recently, such as by doing academic research and meeting people who are on the fringe of academia and business. This is possible but you might have better success elsewhere.

Do you have any hobbies or skills? Do you know martial arts; do you know how to play piano; do you play chess? Are any of these activities affiliated with a business (a martial arts school, etc.)? There is a pretty good chance you can start there and grow a professional relationship with the businessowner. If you are at least somewhat of an expert in this topic, and you are





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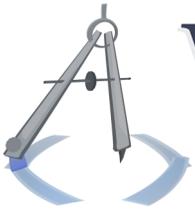
also a computer scientist, the businessowner will prefer to deal with you rather than explain to some stranger the nuances of martial arts and promoting martial arts. Start with what you know. You probably already know your first client.

Getting Started Online

Getting started online is considerably easier and more immediate. Register with sites like oDesk and Elance. Craigslist is a filthy waste of time. The online freelancing in this document will be that of oDesk and Elance.

You should register and set up your account ASAP, because there are a few initial steps you must take before you can apply for jobs and receive money. Flesh out your profile, link up your bank account, and verify your identity as long as you feel comfortable doing that. You should take skills tests to show that you are not just an absolute nobody or a fake account of some sort. The tests are not excellent tests, but you should do alright. Both sites allow retaking of tests; oDesk currently makes you wait a month between retries, and Elance makes you wait





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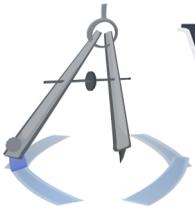
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two weeks. The two sites actually use the same provider of test materials, so you should use that to your advantage where possible. After you get some feedback, tests don't matter so much, but they are good to get you going when you have no feedback.

In describing yourself online, you should say if you have a university education from the USA; this is a distinguishing asset. Demonstrate that you have academic experience, perhaps business experience, and strong language skills. Clients of online jobs are generally relieved and appreciative when they can work with someone who can communicate well in English.

You should expect that you will not receive any money in your bank account for at least a month after you start this registration and preparation process.





Finding & Choosing Jobs

This section generally pertains to online jobs. On these marketplaces, you will probably see a lot of jobs fly by. You should not apply for every one.

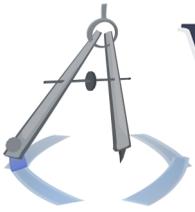
Take your time and assess the market

Most importantly, you should wait at least a week so you can get a feel for the market valuation and the abundance of the various types of jobs. If you only view one day's job postings, you may see some depressingly low offerings and assume that this is the way the market works in general. There are many cheap jobs, and they are generally targeted at second- and third-world countries. The jobs made for educated Americans are fewer, but there are plenty of them if you wait and see.

Risk factors

Now, what types of jobs should you seek? You should probably not apply for the most difficult and lucrative jobs you can find,





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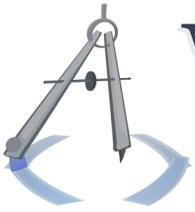
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even if they are within your skill set. Any job carries risks, governed only by probability. Any job can get out of hand - potentially taking much longer than expected, costing more, becoming too difficult, etc. When you meet people in person, you mitigate many of these risks, even if you don't notice it. Maybe you meet a client through a friend, so you know the client is somewhat sane or is living in the same universe of expectations as you are. It's probably much easier to make sure you get paid, both from physical locality and social pressure.

Some of those aforementioned risk variables are particularly high for certain kinds of jobs. Generally speaking, any expensive job (over \$500-\$1000?) may be more of an entrepreneurial venture on the client's part and may be particularly susceptible to scope creep; this may also mean that the client may not have the money to pay you. Jobs with both server-side and client-side development may have particularly annoying interdependencies, and if the client asks for a seemingly small change, it may require a lot of time. The risks go on; you will figure them out.

Simply put, you may want to limit your purview to jobs which





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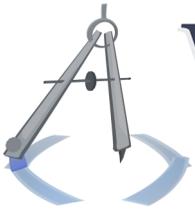
are most simple and predictable with respect to your skill set. You can probably make more money and with a smaller headache if you take more of those jobs than a few expensive jobs. There is also a far lower risk of a life crisis in the event of a job failure (e.g. you worked for a month and didn't get paid). If you follow this school of thought, you should probably only take jobs which are 99.9% or 100% within your skill set; you should be able to knock them out of the park. You will get nice feedback and consistent business doing this.

Skill sets in demand

The set of in-demand skill sets is always changing, but at least for the time being, there seem to be some trends that are durable enough to mention. There are many types of jobs out there, but these generally fall into the category of reasonable and agreeable jobs.

HTML/CSS/JS from PSD Build a site when given its graphical mock-up, such as in a Photoshop file (PSD). Generally no widgets. Can be deceptively tricky depending on the design; can be a little laborious if you don't have an established workflow for this type of job. But still on the easy side.





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HTML/CSS/JS + design Design a site from scratch and build it, probably with no JS widgets. Fairly easy if you are a good artist.

JS widget, no Ajax Generally requires strong knowledge of jQuery, browsers' quirks, and possibly CSS. Should be for mature programmers who can make systemic, encapsulated programs. Some of the hardest client-side-only work.

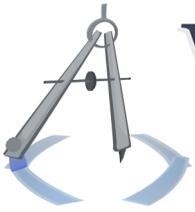
JS widget, with Ajax At least marginally harder than the above, though these tend to be a little less concerned with user experience and more concerned with data validation, sending, and receiving, so maybe easier on average for some people.

PHP forms processing All forms processing is tedious. Build up some experience in low-pressure environments and then maybe you can find some jobs like this which require building or adjusting a form without many external, architectural concerns.

PHP maintenance/general-purpose tasks Using PHP for things other than writing markup, like parsing CSVs, doing filesystem maintenance, importing data from a raw data source, sanitizing it, and putting it somewhere simple, etc. Generally requires comfortability with PHP language features, perhaps CURL, perhaps cron. Probably still on the easy side of jobs.

PHP + database, isolated tasks Similar to above but involving a database. Should be at least fairly comfortable with schema





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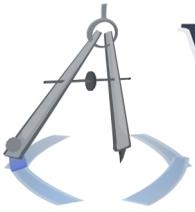
design, with some experiences that have challenged your theoretical knowledge.

Making a simple site with a CMS Seemingly half of all web jobs are simple or perhaps moderately complicated jobs in which the client demands a Content Management System so he/she can edit the content without having to go through another person. A fair request. However, basically all of the CMSes available today are mediocre, sophomoric designs and are thus annoying to mature computer scientists and/or attractive to chumps. The market is oddly popular from the supply side as well as the demand side. You can make a fine living ignoring all popular CMSes, as long as you have experience in more difficult tasks and you're seen as more of a custom artist/craftsman, but it is probably easier nowadays to get your start by studying CMSes such as WordPress and taking related jobs. Just don't dop there, for the sake of your own progression as a computer scientist.

Client Stereotypes

Clients are certainly unique and beautiful flowers, but they're kinda not. Here is an incomplete list of client stereotypes.





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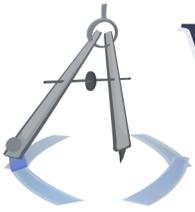
The small-business custodian

He is at the helm of a small business but is not truly interested in growth (i.e. does not understand it or is cheap). He is simply in custody of the business and is waiting until he dies or the business dies. This is the most typical small-business owner from the Baby Boomer generation. Don't expect a lot of money for the job, and there may be scope creep due to misunderstanding of technology. Mitigate the scope creep by explaining the work up front. Generally expect very conservative choices in features; it should probably work for the vast majority of browsers, etc., even if that doesn't make sense.

The small-business imperialist

He is the emperor of a small business and is in a perpetual state of growth. Perhaps you detect this by a business having multiple locations. The business is in a perpetual state of growth that is not at all well defined or bounded. Generally not a cheap client, perhaps intelligent and nice to work with, but at risk for scope creep and ill-defined project milestones. Be more assertive about setting milestones and receiving milestone





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payment.

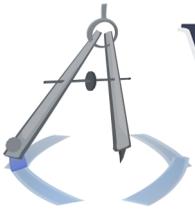
The brainstormer

This guy is an artist, marketer, promoter, with an entrepreneurial type of business or idea. He is always coming up with new ideas and little feature requests. Risk of scope creep is highest. Risk of delayed or irregular payment is at least significant. Remind him of the individual tasks you're working on, set milestones (especially if you're already past the initial goal), and ask to get paid when you feel you've earned it. You can't exactly make him pay you any sooner than he can (of course this is arguable), so perhaps you should at least expect that you might not get it very soon.

The entrepreneur

He has a new idea for a product or a business. He's written his idea in Word document which has templated fields and everything. Perhaps it's even more serious than this. All he needs now is for you to build the site. Entrepreneurs - if they are at all serious - can be pretty agreeable clients. It depends if





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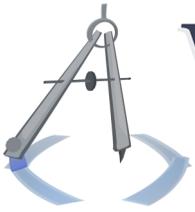
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their business is actually the website - e.g. a web service - or the website is simply describing the business. If the website is describing the business, it should be fine; he will probably understand risks, setbacks, tradeoffs, emergent costs, etc. If the website is the actual business, you run into the problem that the guy probably has a very vague idea for a site and you will have to design the other 70% of it as you build it. You should probably not take that job, but if you do, pick a number you're comfortable with. You better be a skilled and mature software engineer, by the way.

The outsourcer

This guy originally obtained the gig from the client (or maybe another outsourcer) and is now passing it along to you. He probably has a decent awareness of web technology but it is rare that he has any true skill, even if he says he's been a developer for 15 years or whatever (meaning he's done this exact hands-off arrangement for 12 years and his last experience was with COBOL or some ancient web technology). He might have skill, however. That being said, these are generally the best clients. You might get paid less than the max you would hope for, since





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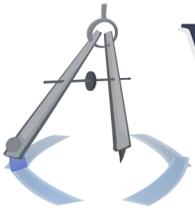
they have to skim their profit margin, but they are generally aware of the nature of the work and are very mindful of scope creep. They might (usually?) identify scope creep themselves and deal with the client appropriately, such as adding it to the bill and paying you an appropriate bonus. The only downsides are that you might be on a tight schedule (he has promised the client and if he fails, it would look awfully mysterious) and you can't tell others of your work or include it in a portfolio.

What to Expect: Step by Step

Website jobs typically follow a sequence of phases. Below is an outline of the phases, which may help frame your expectations as well as the client's. Not all of these phases occur in each job, and times may vary, but this is for a fairly typical client-side-development job.

1. Job posting; client picks contractor. 0-3 days.
2. Client furnishes initial materials; you have first in-depth planning discussion where you go over creative ideas and expectations of cost and time (maybe for the second time, after your proposal/cover letter). 0-5 days.





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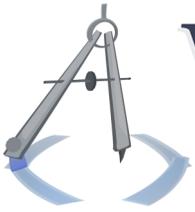
3. You survey the materials and give an estimate of next steps. Privately, you model the problem (like information schema, site navigation categories, etc.) and make initial sketches. 0-3 days.
4. You make first draft. Time varies.
5. Correspond and refine. Maybe you get the final content or materials (photos for the site, etc.) and you refine a few times for various reasons. 0-7 days.
6. Finished product. Maybe the client wants some time to review it, perhaps with other people. 0-2 days.
7. Distribute the product; help client integrate it into final environment. 0-2 days.

Particularly important is the last step. You should actually ask the client about this first: does the server have PHP? Can it run SQLite? etc. Feel out this question early and maybe run some tests on the environment as you develop. It could turn into a large problem if you don't.

Behind the Curtain: Tips & Tricks

Here is some advice for specific situations and different facets of the business experience:





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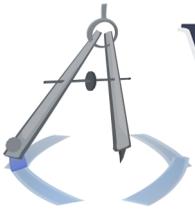
How to be professional

Clients are generally impressed by professionalism in a contractor. This usually means promptness, open communication, and demonstration of domain experience. If you can forecast possible costs or problems, even in your first contact, that would be a professional behavior. Don't be afraid of writing too much in the cover letter, for example; it is probably to your benefit. While you are dealing with the client, you should give frequent updates (as much as daily; maybe more like every 2-3 days) rather than hide during a lull in communication.

Breaking into the market

How do you break into an online marketplace? There are a few basics: take the skills tests, flesh out a profile, write a thoughtfully-composed cover letter. Above that, maybe there are other strategies. You could look for quick & cheap jobs and give away the answer to their problem in the cover letter. If you lose, you lose the opportunity for \$20. If you win, you get your foot in the door and can earn hundreds of dollars shortly after. You might also search for jobs with the word "urgent" in





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them.

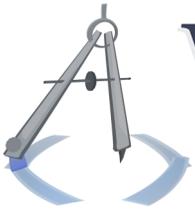
Always overdeliver; quality wins

Do the best job you can; it pays off. If you at least slightly surpass the client's expectations, you will probably plant the seed for a lot of repeat business and you will at least build character in striving for excellence. Most clients - and most people - are also more likely to remember the positive feelings of receiving high-quality work than the negative feelings of some of your other failures, perhaps also because high-quality work has more lasting, tangible consequences than a production delay. If you are a little bit late or you're not as cheap as the client would ideally prefer, he will probably forget about those problems as long as you do an excellent job.

On personal transparency

Although online markets are potentially faceless and anonymous, you will probably have some measure of personal transparency with your clients. You will probably know what they look like, where they're from, and maybe what their hobbies





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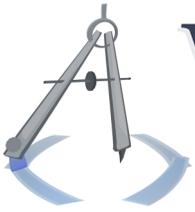
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are. They will probably learn those things about you. At least a slight majority of them will probably talk to you on the phone at some point. Nearly all of them will know your email address.

Clients in other countries are less likely to talk to you on the phone, though there is always Skype or Google Chat or whatever they want you to use. Perhaps plan for this if you don't want any phone contact, although they virtually always notify you by email to plan a call. It's possible they may learn your address, either to send you payment or because your address is included in a contract that you fill out. You should probably consider getting a private mailbox for this purpose and others. In contrast, you probably shouldn't give them fake or proxy emails or phone numbers, such as a Google Voice number, unless it would be undetectable. You will probably be dealing with them an increasing amount and with an increasing level of openness, so it would seem embarrassing if you had to tell them your real phone number at some point and tell them that the previous one was just a proxy.





Continued Business

If you do a very good job, most clients will at least want to offer you more work in the future.

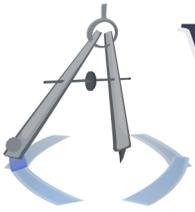
Prepare for the demands of continued business

You can never be sure if a client is going to give you repeat business. He may have even hinted at it - heavily - but he could have been lying, or the job could go sour and he might not want to work with you again. In general, though, you can just assume that it's hard to tell. So you should probably not apply for jobs right before your current job is ending. Your current client may offer repeat business and you would be overloaded. If possible, give an extra period of time after a job to see if a subsequent job comes up.

Note the consequences of the expectation to repeat

If people expect to work together again, they have different states of mind while in the current job. You, the contractor, may be wary of giving negative feedback or making strong de-





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mands to get paid when the client is late. The client may be less likely to run off without paying you or give you bad feedback. Note that the client may dangle this expectation to change your state of mind.

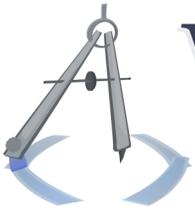
Be honest about your abilities

If a client asks you whether you can do an upcoming job and it isn't really within your skill set, then don't lie. Don't lie in any case, but it is fine if you don't lie here. You might even say that you could probably learn the technology in some given period of time but it may still be more economical for him to hire someone else. Saying this generally doesn't hurt you; he will be more likely to trust you in the future, and there are plenty of jobs in the sea if he doesn't.

Be open and honest with pricing

You should always be honest with pricing, but in continued business, you may want to consider being more open than usual. For example, you may say, "I'll do it for \$300-\$400, whatever fits in your budget." This may have a few advantages.





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The client may have reduced expectations of promptness if they go with the cheaper price, so perhaps you can get the benefit of reduced pressure. The client may give you a midway price and leave some room for scope creep, which alleviates pressure surrounding scope creep. He may be more likely to give you a bonus, especially if you do more work than originally specified, and this may go beyond your originally quoted price range (e.g. over \$400). And again, the client will trust you more and may be more open with you, such as about deadlines.

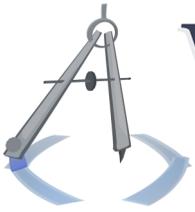
A Way of Life

It is possible to make a good deal of money freelancing. In time, you could even outpace a decent "regular job". So you may want to make it your lifestyle. You should know that it has some unique characteristics, some positive and some negative.

Flexible schedule

When freelancing, every day is a free day and every day is work. It depends how much you saturate yourself with work and what





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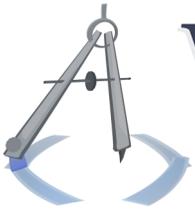
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types of clients you have, though. If your clients are businesses open Monday through Friday, you will probably have reduced responsibilities on the weekends. Most clients would even grant you that, regardless of business model. Aside from the indirect influence of weekends via your clients, though, the concept of weekday/weekend might lose some relevance. You probably would have a generally open schedule except that you would have deadlines at arbitrary times of the day, such as getting a site mock-up to a client by 3 PM. You may have several such deadlines for several clients spread throughout the day. This is usually still more freedom than a regular 9-to-5 job, or at least it feels like it, though it isn't like you can relax all day and finish your work whenever. There are still deadlines; they are simply irregular. That being said, if you want to go to the store or go see a movie at any time, you can probably do it.

Freedom to choose jobs; influence over earnings

If you're working for The Man, you typically have no choice over your duties, their deadlines, and thus essentially how much you get paid for each unit of work. With freelancing, everything is a choice: you can apply for a job, or you can scroll past it.





Website Architecture

Memorandum

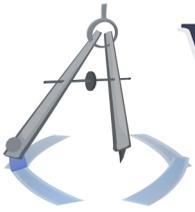
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A client may ask you: "I have another job coming up; would you be interested in that?" The mere fact that you are asked this question is a stark contrast to the day-to-day realities of most people. This is a strong positive and can help avoid the mundane or bitter feelings of most jobs.

Stress and the necessity of multitasking

With especially online jobs of a simple nature, and the jobs you are likely to get early in your freelancing career, you will need a handful of jobs in order to pay your bills. You may have 2-5 active jobs at one time and thus several deadlines throughout the day (not every day). This in itself can be stressful. Couple that with the idea that each of these jobs is oblivious to the others and three or five of them might request something on the same day. Somebody might have to be disappointed. This can be considered stressful. You should be decent at multitasking and managing stress in a psychologically healthy manner.





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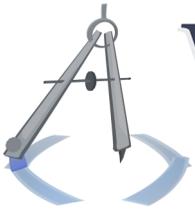
Risk of drought

Because your jobs finish every few weeks, you need to roll the dice again and acquire new jobs when they complete. Of course, something may fail - maybe you can't get a job, maybe a job is late in paying you, maybe multiple jobs are late in paying you, etc. Ideally, you should have significant savings before making freelancing your lifestyle and/or save well when you are getting started.

Preoccupation with freelancing, no growth

The website market is fairly competitive and many jobs demand new skills, though you can find niches which are relatively stable in their required skill sets. Be careful that you do not freelance with 100% of your work time and you still have time to develop your skills and probably research some of the new skills you see demanded in job listings.





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Lack of personal fulfillment

Some aspects about freelancing and working with clients are not fulfilling. If you take predictable and simple jobs, that may be most responsible and even most lucrative, but it is not the most fulfilling in and of itself. You should do other things with your life and your professional skills that challenge you and allow you to grow and feel satisfied. Working with clients may also be unfulfilling in that they have poor taste and they don't choose the most ambitious product features or strategies. You must not care what they think of your work, as long as you know your skills are mature. A client may even demand that the work be kept a secret and thus you can't show it off as part of your portfolio, where it could be a source of pride. If you want pride, you may get it from your work and you may not; consider it an unreliable source. For maximum health and happiness, you should probably have a more challenging and creative outlet than freelancing, such as entrepreneurship or sports or artistic endeavors, in a complementary role in your life.

