Abe-s Digital General Store Help Desk, Outsourcing, and Tutoring Brochure

1. Special Opening Price List

- Non-commerical customers: 75 NIS or $25 per hour
- Commercial customers: 200 NIS or $65 per hour
- *Currently* "Osek Patur", so there is no VAT

2. Tech Support

- General support for problems with Windows, Android, and especially Linux *software*; and to recognize when a problem is likely hardware related. Note that I am not a hardware expert, nor an expert in the use of Mac or iPhone software.
- Set up remote access software, i.e. Anydesk.
- Internet security hygiene consulting.
- Set up backup procedures.
- Windows-11 IT consulting (with the help of Yishai Gorden, who has 18 years experience).

2.1 Linux

- Installing a native Linux desktop (I prefer "Ubuntu") on your PC, especially for "older" Microsoft Windows-10 PCs that cannot be upgraded to Windows-11.
    - Linux is much more efficient than Windows when running on the same PC hardware. For basic usage, it can even run on an Intel i3 CPU with 4 GB RAM and a 100 GB hard disk. It is more secure, and far less prone to viruses. It has less clutter because most junk software that afflicts Windows is not usually "pushed" to Linuces. It has a more efficient and far less intrusive/obnoxious software update procedure. For the casual user who uses his web browser (e.g. "Chrome") for most tasks, the user experience is nearly identical. Good, and usually free, alternatives to most Windows software packages are usually available for Linux And many, but by no means all, native Windows packages (especially many games) run inside the Linux "WINE" compatibility environment.
- Installing a software development environment on a Linux desktop.
- Installing "WSL", i.e. the Windows Subsystem for Linux, on a Windows-11 PC.
- "Bash" scripting. Use of "Posix" CLI tools.

2.2 PC and Smartphone Equipment Purchasing Advice

- I offer initial setup of a new PC or smartphone.

- Modern smartphones have builtin obsolescence - especially because their batteries are now designed **not** to be replaceable. They last at most 3-4 years - if they haven't been lost or damaged first. In order to save lots of money, I usually prefer to buy a former top-of-the-line version that was originally released 2 years ago. The best site for comparing the technical features of smartphones, along with the manufacturer's suggested retail price, see GSM Arena. For heavy phone users who won't have access to a wall charger, buy a portable battery pack.
- For PC laptops, I prefer a 14 inch display with an i3/i5 CPU, and 8/16/32 GB RAM with a 256/512/1024 GB SSD. If you need to run both Windows and Linux then you should have an i5 CPU, at least 16 GB RAM, and at least 512 GB SSD. If you need more disk space then connect a network drive or an external USB 2/3 drive. I do state-of-the-art software development, and I find that an i5 CPU is good enough. The i7 and i9, which are marginally faster, have much higher battery dissipation and run much hotter. often requiring an external cooling fan. At home and office, I usually have a large 24/27/30 inch external display. I don't need a builtin game quality graphics adapter or a game quality external display. Standard graphics resolution of 1920x1080 (aka FHD) is sufficient for me. My manufacturer preference is Lenovo that always has up-to-date Linux support, and can usually be purchased without the extra cost of a Windows license. My next level of preference is Dell, but if you want to run Linux then you should first check the device's level of Ubuntu certification.
- For consumers who want to buy an economy priced Linux PC **that is not a laptop** (because it will require an external HDMI video display), I recommend the Raspberry Pi 500 with 8 GB RAM with a 256 GB ultra fast SD Card that costs ~ $200. For a small extra cost, it also supports 16 GB RAM. For more disk storage, connect a network drive or an external USB 2/3 drive. In Israel the local importer is Piitel. The main UK site has a worldwide list of approved resellers. Optional hardware:
  - SSD: 256/512/1024 GB
  - HDMI Monitor: 15.7 inch

2.2.1 Virtual Machines and Cloud Storage

- For businesses that occasionally need a more powerful computer (e.g. with a stronger CPU, larger RAM, or more disk storage) should rent a VM (i.e. Virtual Machine) by the hour in the cloud, from $.05/h to $6.00/h depending upon configuration, from providers such as Amazon, Azure, Digital Ocean, Google, Red Hat. Prices are significantly less for "spot" VMs the can be pre-emptively swapped out. Billing is by the minute.
- These same providers also supply cloud storage data services in units of 1 GB per month. Prices vary according to many factors, e.g. geographic location, whether the data can be modified, frequency of access, network tranfer fees, etc. For example the base cost of storage for data that can freely modified (i.e. Google Class A) located in the US or EU is $.005 per GB per month, not including any access fees or network transfer fees.

2.3 Accessibility Solutions For Those Who Have Disabilities

- I have many accessibility inventions.

2.4 Documentation Tools

2.4.1 Markdown

Markdown is an extremely popular lightweight embedded markup language that is typically used to generate high quality HTML pages which is the language of web sites, and can also generate PDF files. Most of the hi-tech industry uses it for their documenation. Almost all blogs use it. Markdown is typically written with a simple text editor, e.g. "Notepad" in Windows.

Markdown's basic syntax is trivial. For example:

- Text surrounded with an underscore (`_`) denotes italic font
- Text surrounded with a double underscore underscore (`__`) denotes bold face font.
- A new line beginning with with an asterisk (`*`) denotes a bulleted list entry.
- A new line beginning with a number followed by a dot (`42.`) denotes a numeric list entry.
- A new line beginning with a hash tag (`#`) denotes a new section title. Multiple hash tags are used to denote subsections - up to 5 levels.
- Text surrounded with square brackers `[myalias]` immediately followed by a URL address surrounded by parantheses `(https://www.example.com/myfile.html)` denotes a named URL link.
- Etc.
- Here is the basic markdown documentation of the original inventor.
- Where there is no appropriate Markdown syntax, one can always embed HTML script into the document.

The tools listed below are popular Markdown applications. They work under both Windows and Linux.

- Pandoc: universal document converter typically to HTML, and also generates PDFs. FOSS.
- Mkdocs: for articles. FOSS.
- Hugo: for static blogs. FOSS.
- Obsidian: for "notebooks" (with over 100 plugins along with excellent Latex support). FOSS for non-commercial use, otherwise ~ $50/year.
- *Free* basic static web site hosting via Github" or Cloudfare or similar products.

2.4.2 Free Alternatives to Microsoft Office

- Libre Office: application for Windows, Mac, and Linux.
- Google Docs: requires a gmail account. Offline editing is possible.

2.4.3 Proprietary Microsoft Office 365 Web Application

For Windows / Mac / Linux / Android / iPhone. The application runs in your web browser.

Plans:

- Personal (Smartphone & PC): ~ $100/year, 1 cloud TB storage.
- Family (Smartphone & PC for up to 6 people): ~ $130/year, 1 TB cloud storage per person.
- For business and enterprise plans, see the Microsoft site.

3. Computer Science

- Speed up and protect the IP (intellectual property) of Python applications via "Cython", along with lightweight cryptographic hardening of Cython.
- Speed up amd protect the IP (intellectual property) of "Javascript" web applcations with "WASM" (Web Assembly).
- Incorporate lightweight cryptography in your applications, via the use of "PRNG", stream ciphers, key wrapping, "NaCL", etc.
- **Design of protected Linux applications with no "attack surface" that are very difficult to reverse engineer.**
  - Built using automated refactoring tools "SrcML" and Python's "Beautiful Soup".
  - Hide exports inside `.so` files.
  - Cryptographic dynamic wrapping of Linux API calls via register operations. Also wraps selected keys and constants.
  - Cryptographic static wrapping of constant strings in a module specific heap.
  - Dynamically cryptographically modify the call frame of functions, so that no two function calls, even when using identical function arguments, are the same.
- Design of shareable object files for Linux applications.
- Modern "C" programming techniques.
- Modern "C" dynamic memory usage techniques via "mimalloc" and "valgrind".
- Incorporation of macro pre-processing via "Jinja2" and "PyExpander" into many programming projects, and for building configuration files (along with "PKL" validation).
- Use of "MISRA-C" for safe embedded programming projects. We can **legally** and **safely** override many MISRA-C restrictions via the use of macro pre-processing.
  - For example, we can design a dynamically loadable static database in FLASH that is larger than RAM. The database can be designed using "designated initializers" with compile time validations, so there is no need to do any validations at runtime.
- Design of domain specific languages (DSLs).
- Algorithm development (with the help of my son Yirmi Bernstein, who has a Phd in astrophysics and optics).
- Web "scraping" and transformation of HTML and XML files via the Python "Beautiful Soup" library.
- Web scripting and automation of HTML web pages via "Selenium".

4. Tutoring & Music

- Mathematics for the Israeli matriculation examination (i.e. "Bagrut").
- English for the Israeli matriculation examination.
- Computer Science, especially Python Turtle Graphics software for beginners and intermediates. See gallery.
- Advice for new college students entering a computer science program.
- Music theory, solfege, and use of MuseScore software for beginners and intermediates.
- Classical guitar and recorder lessons, for beginners and intermediates.

5. Health & Exercise

- Meditation training via my own unique "electronic metronome" technique that one can begin learning within 15 minutes; especially good for children with ADHD.
- Juggling and boxer style skipping; especially good for children with ADHD. Choral singing is also very beneficial for such children.
- The Brain-Changing Benefits of Exercise.
- **HIIT**, high intensity interval training, for adults and children:
  1. 5:00 min warm-up
  2. 5 x 5 min intervals: [2:30 medium, 2:30 fast]
  3. 1 final 5 min interval: [2:00 medium, 3:00 fast]
  4. 5:00 min cool down
- **SIT**, sprint interval training, for very fit adults and teens:
  1. 7 x 5 min intervals: [4:30 slow, 0:30 exhausting]
  2. 5:00 min cool down
- Strength and flexibility exercises for adults and children.
- The extremely deleterious effects of the Internet, social media, and gaming especially for children and teens. Don't let your children have smartphones, or laptop PCs, or even allow them private access to a desktop PC except in a regularly supervised open space in the home. See the NYT best seller The Anxious Generation by Jonathan Haidt . He is a social psychologist who explains this damage in great detail. I am a computer scientist. I would be the first to admit the explosion of knowledge since the advent of the Internet in the 1990's. But left unsupervised, children are attracted to garbage on the Internet like a moth to a flame. The largest corporations in the world make fortunes peddling this addictive garbage to them.

6. Aliyah Counselling

- Learning the "ropes" in Israel. I made Aliyah from the US in 1983 at age 26.
- I have been working in the hi-tech field my whole life, so I an able to offer excellent career counselling to those who wish to enter the hi-tech market.
- Details of the high quality and inexpensive colleges and universities in Israel.

- The Jewish Agency provides a *nearly free* 3 year (grades 10, 11, 12) highschool education *including room and board*, in multiple languages and for multiple religious streams, via the Naaleh program for those youth *who have not yet even made Aliyah*. And here is another article about the program. Many of those in the program make Aliyah, and a significant number of their parents follow them.
- General advice: Why the time is "ripe" for US Jews to make Aliyah now. It goes without saying why Jews from the UK, the EU, Canada, Australia, and South Africa, should already be packing their bags.

7. General Stuff

7.1 Use Internet Calendar Protocol For Meeting Invitations

Most people use the "Google Calendar" application.

7.2 Electronic Meetings

In order of preference:

- Zoom
- Whatsapp
- Google Meet
- Microsoft Teams

7.3 Face-to-Face Meetings with Youths

In order to prevent any possible misunderstandings, face-to-face private sessions with youths under 16 years of age will be held in a public space near my home in the Jerusalem neighborhood of *Ramot*, such as at the *Ramot* public library or in a *Ramot* mall cafe, or at my home in *Ramot Bet* but only when my wife is present.

7.4 Payment

- IL NIS: bit
- US $: paypal
- bank transfers

7.5 Contact Details

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- **Last Update:** 2025-12-25

Appendix: Why I Am Forced To Do This Kind Of Work

I am almost 70 years old, and I am "forcibly" retired. Until recently I was at the apex of the Israeli hi-tech industry, but due to my "advanced" age, I have nearly become unhireable at least as far as the automated applicant tracking system (ATS) applications used by HR departments to screen applicants, in spite of my formidable CV. And this dismal article explains why I, and nearly everyone else in my cohort, are also unhireable.

Recently I was working for many years in the CTO group of an automotive tech company. The company imploded, and was forced to lay off about 80% of their employees. Primarily I was developing advanced compiler techniques to implement automated source code refactoring in order to substantially reduce (i.e. by a factor of 5-10 times) the time required to execute software updates in the automotive service centers with only marginal degradation to the original size and execution speed. Before that I had a senior cybersecurity position in the Internet satellite and cable TV industry which was eventually gobbled up by Netflix. I implemented a *manual* system for greatly reducing the attack surface of Linux based DRM player applications in the pay TV industry, making them very difficult to reverse engineer. Subsequently after becoming an expert in automated source code refactoring in the automotive tech industry, I came to realize that the source code refactoring techniques which I developed there, could be used to automate the protection for a general Linux applicaiton. A particularly compelling use case would be to protect unexploded military ordinance which fell into enemy hands.

As you can see, I am a "jack of all trades" in the software indusry. I am like Howard Hughes, who designed novel airplanes, was their test pilot, and understood all aspects of repairing them.

And as you may have noted between the lines, I have not mentioned any AI skills. Like the famous computer scientist Richard Stallman, I am an AI contrarian. For example, Stallman refers to ChatGPT as a "bullshit generator" because it generates output "with indifference to the truth". And here is a more detailed article, that is not too long nor too technical, that explains the fundamental misunderstanding that the chattering classes have with AI. In spite of my reservations, I admit that AI can execute clerical tasks and repetitive tasks that can process and summarize huge amounts of data at phenominal speeds, *but without evaluating it*. AI can generate scaffolding for common computer programming tasks. AI is also a good tool for learning the *basics* of a new subject; one can ask "dumb" questions to AI without any fear of criticism. Still where critical thinking is required, AI has not yet proven itself.