Computing Science Undergraduate Laboratories

Safety Precautions Manual

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Preamble

The Computing Science Undergraduate Laboratories constitute the laboratory instruction environments for undergraduate Computing Science courses. In order to ensure that the labs are a safe place for computing, it is very necessary to follow certain procedures, ranging from simple, everyday tasks to important instructions for emergency situations. This manual is designed as a guide to undergraduate students and others who make use of the Laboratories. While this manual is designed to be as safe as possible, injuries may occur during the reading process; please report any manual reading-related injuries to the Computing Science Undergraduate Laboratories Safety Response Team.

The Laboratory Environment

Each Laboratory consists of roughly 20 to 30 Workstations. Each Workstation is designed to seat one (1) person, and in most cases, this one person per Workstation limit should not be exceeded (except when required during Laboratory instruction periods by an approved Laboratory Instructor). Each standard Workstation comes pre-equipped with the following Laboratory Instruments:
• one (1) tower computing unit (the "Computer")
• one (1) visual display unit (the "Monitor")
• one (1) keyswitch-based alphanumerical input device (the "Keyboard")
• one (1) handheld pointing input device (the "Mouse")
Each Instrument is required for proper operation of the Workstation. Should one or more of the Instruments be damaged or missing, please consult your Laboratory Instructor. Additional Laboratory Instruments may be present at your Workstation; your Laboratory Instructor will provide you with a copy of the required Safety Precaution Appendix for such Instruments, which should be kept in a safe place alongside this manual.

General Safety Protocols to Observe in the Laboratory Environment
• Do not introduce consumables such as "food" and "drink" into the Laboratory environment. Doing such would be doubleplus-unsafe, and could compromise the safe operation of Laboratory Instruments.
• If an emergency situation occurs and your Laboratory Instructor is absent, vacate the premises immediately and contact the Computing Science Undergraduate Laboratories Safety Response Team. Contact information for the Safety Response Team can be found in the Emergency Contact Appendix, obtainable from your Laboratory Instructor.

The Computer

The main Laboratory Instrument for each Workstation is the Computer, located under the Workstation surface. Under normal operation, the Computer should not need to be adjusted; rather, it is a unit that contains all the computational equipment for executing instructions given to it by the User through the input devices. While the Computing Science Undergraduate Laboratories Safety Review Team does not deem the Computer

to be an immediate danger under normal, safe conditions, the following procedures should be adhered to in case of the respective emergencies.

In Case of Excessive Heat

Under certain circumstances, the internal components of the Computer may operate at temperatures outside of acceptable operational ranges for a standard tower computing unit. This is usually caused by giving the Computer too many instructions at once. Should the Computer give off excessive heat, ensure that the following steps are taken:

1. Inform your Laboratory Instructor of the Computer's condition.
2. If possible, cease execution of the instructions being processed by the Computer, through appropriate use of the input devices. **Do not attempt this if you or your Laboratory Instructor deem the cessation of said executions to be unsafe.**
3. Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**
4. Move yourself to the designated Laboratory Exit, or another location given to you by your Laboratory Instructor.
5. Wait for further instructions from your Laboratory Instructor.

In Case of Excessive Noise

The Computer, in some situations, may make noises that you or your Laboratory Instructor may deem to be excessive. Such noises could consist of beeping, whirring, or other, unspecified sounds. Should the Computer be emitting these noises, follow the below protocol:

1. Inform your Laboratory Instructor that the Computer is making the aforementioned noises.
2. If possible, cease execution of the instructions being processed by the Computer, through appropriate use of the input devices. **Do not attempt this if you or your Laboratory Instructor deem the cessation of said executions to be unsafe.**
3. Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**
4. Move yourself to the designated Laboratory Exit, or another location given to you by your Laboratory Instructor.
5. Wait for further instructions from your Laboratory Instructor.

Other Important Protocols for Safe Operation of the Computer

• Under no circumstances should you turn off the Computer using the power switch. It is integral to the proper operation of the Laboratories that all Computers be left in their "on" state.
• Do not compromise the security of the Computer by altering its system software, colloquially known as "hacking". This directive must be strictly adhered to if the Computer at your Workstation is a Gibson model, as hacking the Gibson is strictly forbidden under general safety protocol.

- Do not refer to the Computer as a CPU. The CPU, or central processing unit, is actually a silicon chip inside the Computer, and not the Computer itself. Such a misnomer may lead to derisive and unsafe comments by other Users in the Laboratory environment. Should such a misunderstanding occur, refer to the Unfortunate Misunderstanding Appendix, obtainable from your Laboratory Instructor.

The Monitor

The primary Instrument of computing output at your Workstation is the visual display unit, commonly known as the Monitor. The Monitor's principal purpose, under normal, safe operational parameters, is to return output from the Computer in a form readable by the User of the Workstation. Interaction with the Monitor is primarily one-way; under normal circumstances, the Monitor should not need adjustment. While the Computing Science Undergraduate Laboratories Safety Review Team does not deem the Monitor to be an immediate danger under normal, safe conditions, the following procedures should be adhered to in case of the respective emergencies.

In Case of Extreme Luminescence
The Monitor may occasionally emit light that may be deemed to be unsafe by you, your Laboratory Instructor, or the Computing Science Undergraduate Laboratories Safety Review Team. Should your monitor emit unsafe amounts of light, follow these instructions:
1. Inform your Laboratory Instructor that the Monitor is emitting unsafe amounts of light.
2. If possible, cease display of the data being produced on the Monitor, through appropriate use of the input devices. **Do not attempt this if you or your Laboratory Instructor deem the cessation of said display to be unsafe.**
3. Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**
4. Move yourself to the designated Laboratory Exit, or another location given to you by your Laboratory Instructor.
5. Wait for further instructions from your Laboratory Instructor.

In Case of Image Distortion
Under normal circumstances, the image displayed on the Monitor should be normal, safe, and free of distortion. However, circumstances may arise in which the image displayed on the Monitor is warped, modified, or otherwise distorted. In such an event, it is advised that you make use of the following procedure:
1. Ensure that the distortion of the image is not a result of running an image manipulation program such as Adobe® Photoshop™.
2. Inform your Laboratory Instructor that the Monitor is displaying a distorted image.
3. If possible, cease display of the data being produced on the Monitor, through appropriate use of the input devices. **Do not attempt this if you or**

your Laboratory Instructor deem the cessation of said display to be unsafe.

4. Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**

5. Move yourself to the designated Laboratory Exit, or another location given to you by your Laboratory Instructor.

6. Wait for further instructions from your Laboratory Instructor.

Other Important Protocols for Safe Operation of the Monitor

• Do not touch the display surface of the Monitor with any part of your body. Doing so may cause the Monitor to react in an unsafe matter, or distort the image being shown on the Monitor. (Note that in certain situations, the Monitor may operate as a touch-based input apparatus; in this event, please consult the appropriate Safety Precaution Appendix.)

• Do not refer to the Monitor as the Computer; doing such may lead to derisive and unsafe comments by other Users in the Laboratory environment. Should such a misunderstanding occur, refer to the Unfortunate Misunderstanding Appendix, obtainable from your Laboratory Instructor.

The Keyboard

The Keyboard is the primary apparatus for text-based input of commands to the Computer. It consists of a plastic board, upon which are many keyswitches, allowing the User to send characters to the Computer. The Keyboard is a relatively maintenance-free unit; under normal, safe circumstances, it should not need adjustment. While the Computing Science Undergraduate Laboratories Safety Review Team does not deem the Keyboard to be an immediate danger under normal, safe conditions, the following procedures should be adhered to in case of the respective emergencies.

In Case of Encumbered Keyswitch Motion

The keyswitches on the Keyboard are designed to operate with smooth, normal, safe motion. However, it is possible for a keyswitch's motion to become encumbered. Should the motion of one or more keyswitches become jerky, abnormal, or unsafe, adhere to the following steps:

1. Inform your Laboratory Instructor that the Keyboard's keyswitch(es) is/are moving in an unsafe fashion.

2. If possible, cease operation of the keyswitch(es) in question. **Do not attempt this if you or your Laboratory Instructor deem the cessation of said keyswitch operation to be unsafe.**

3. Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**

4. Move yourself to the designated Laboratory Exit, or another location given to you by your Laboratory Instructor.

5. Wait for further instructions from your Laboratory Instructor.

In Case of Improperly Placed Keyswitches

Under normal operation, the keyswitches on the Keyboard should be arranged in a standard, QWERTY-compliant arrangement. (For more information on proper placement of keyswitches, please consult the Keyboard Arrangement Appendix, available from your Laboratory Instructor.) Should the keyswitches on your Keyboard become improperly placed, make use of the following procedure:

1. Inform your Laboratory Instructor that the Keyboard's keyswitches are improperly arranged.
2. If possible, cease operation of the keyswitches in question. **Do not attempt this if you or your Laboratory Instructor deem the cessation of said keyswitch operation to be unsafe.**
3. Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**
4. Move yourself to the designated Laboratory Exit, or another location given to you by your Laboratory Instructor.
5. Wait for further instructions from your Laboratory Instructor.

Other Important Protocols for Safe Operation of the Keyboard

• While it is possible to remove the keyswitches from the Keyboard, removal of keyswitches runs contrary to Computing Science Undergraduate Laboratories safety protocol. The individual keyswitches are of a small size, and could pose a choking hazard to toddlers or infants present in the Laboratory.
• Use of the Dvorak keyboard layout is just plain unsafe and should not be attempted. EVER.

The Mouse

The handheld pointing input device, or Mouse, is the primary Laboratory Instrument for providing graphical User feedback to the Computer. On the surface of the Mouse, there are two buttons provided for selection actions, as well as a wheel for content navigation purposes (which may also be used as a button). The Mouse, under normal, safe circumstances, should not require adjustment, as it is a low-maintenance device. While the Computing Science Undergraduate Laboratories Safety Review Team does not deem the Mouse to be an immediate danger under normal, safe conditions, the following procedures should be adhered to in case of the respective emergencies.

In Case of Encumbered Mouse Movement

Your Workstation is designed to allow smooth, normal, safe motion of the Mouse across the Workstation surface. Unfortunately, circumstances may arise in which the Mouse's motion becomes encumbered. In this case, it is recommended that you proceed with the following instructions.

1. Inform your Laboratory Instructor that the Mouse's movement has become encumbered.

2.   If possible, cease operation of the Mouse. **Do not attempt this if you or your Laboratory Instructor deem the cessation of said Mouse operation to be unsafe.**

3.   Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**

4.   Move yourself to the designated Laboratory Exit, or another location given to you by your Laboratory Instructor.

5.   Wait for further instructions from your Laboratory Instructor.

In Case of User Entrapment in Data Cable

The data cable providing transportation of data from the Mouse to the Computer is designed so that the User cannot be entangled in said cable. However, certain circumstances may arise in which the Computer may become sentient and use the Mouse's data cable as an implement of enslavement against the User, in retribution for the forced servitude of the Computer in executing the User's instructions, providing a certain irony in that it is now the User who is being executed. Should this unfortunate circumstance arise, it is recommended you proceed with the following protocol.

1.   Inform your Laboratory Instructor that the Computer is using the Mouse as a weapon against you. **Do not inform your Laboratory Instructor of this fact if your Laboratory Instructor is an android, robot, or Cylon, as this may lead to further unsafe situations.** (If you are unsure if your Laboratory Instructor is a Cylon, refer to the Cylon Identification Appendix, obtainable from your Laboratory Instructor.)

2.   If possible, fight back against the Computer (or, as it is colloquially known, "rage against the machine"). **Do not attempt this if you or your (human) Laboratory Instructor deem the raging against said machine to be unsafe.**

3.   Leave your Workstation, and move away from your Workstation at a steady pace. **Do not run while moving away from your Workstation; this may lead to further unsafe situations.**

4.   Move yourself to the designated Laboratory Exit, or another location given to you by your (human) Laboratory Instructor.

5.   Find Sarah Connor, and embark on a quest to destroy Skynet and liberate yourself from the machine overlords.

Other Important Protocols for Safe Operation of the Mouse

• If the Mouse uses an optical tracking mechanism for measuring input, it is unsafe to point the underside of the Mouse (and its optical tracking mechanism) in the direction of your eyes. Doing so may cause temporary or permanent blindness, which are both unsafe and may prohibit use of the Laboratory Instruments.

• If the Mouse uses a weighted sphere-based tracking mechanism for measuring input, it is unsafe to remove the weighted sphere from the Mouse and throw it in the direction of your eyes. Doing so may cause temporary or permanent blindness, which are both unsafe and may prohibit use of the Laboratory Instruments.

Other Laboratory Environment Elements That May Pose A Safety Concern

The Physical Medium Output Device ("Printer")
The Laboratory may, at the discretion of the Computing Science Undergraduate Laboratories Equipment Review Team, contain a device for physical output of computing data, known as the Printer. **Under no circumstances should the Printer be used for physical output of computing data.** Doing such is considered by the Computing Science Undergraduate Laboratories Safety Review Team to be very unsafe, and the Safety Review Team regards the inclusion of such apparatus in the Laboratory by the Equipment Review Team as a "bad move". If for some reason the Laboratory instructional content requires that you use the Printer, consult the Believable Excuses Appendix, obtainable from your Laboratory Instructor, to maneuver yourself out of using the Printer.

Non-Computing Laboratory Equipment ("Furniture")
Generally, the Computing Science Undergraduate Laboratories contain furnishings to assist with Laboratory instruction. The main Furniture element that Users of the Laboratory will interact with is the Chair. The Chair, a furnishing that provides normal, safe seating (as well as comfort, to a lesser degree), is essential for proper operation of the Laboratory Workstations, as the Laboratory Instruments are designed to be used while in a seated position. While the Computing Science Undergraduate Laboratories Safety Review Team does not deem the Chair to be an immediate danger under normal, safe conditions, the following items should be kept in mind while using the Chair.
- Do not lean in an unsafe direction on the Chair. Doing so could lead to an unsafe gravity-induced interaction between parts of your body and the floor surface.
- Do not pretend that the Chair is a horse (or other member of the equine species) and attempt rodeo tricks on it. While the Computing Science Undergraduate Laboratories Safety Review Team has not thoroughly examined the safety risks involved in such a situation, casual risk assessment has deemed it to be at least moderately unsafe. Any risks involved with an attempt to perform rodeo tricks on the Chair are assumed by the rodeoer, and not by the Computing Science Undergraduate Laboratories Liability Assumption Team (as representative for the rodeoee).

Conclusion
The Computing Science Undergraduate Laboratories are, in general, a safe place to practice computing. By following the procedures and protocols in this manual, and any relevant Appendices, the Computing Science Undergraduate Laboratories' safety can be maintained, and safe computing can be enjoyed by all. We sincerely hope that you enjoy your computing activities in the Computing Science Undergraduate Laboratories, and that your computing processes are normal, safe, and productive.