

Software Safety Exercise 2

Dennis J. Frailey

You will be given a specific safety topic. Your exercise assignment is as follows:

- 1) Research the topic on the web and/or the UTD library
- 2) Prepare a brief, introductory presentation, as described below
- 3) Give the presentation to the class, taking 10 minutes to do so

Presentation:

You should prepare a PowerPoint presentation containing the following slides:

Slide 1 – A title slide such as:



**UT Dallas – Software Safety:
Research, Practice and a Path
Forward
Summer, 2023**


<xxx> Safety

<replace with your name>


Slide 2 – An introduction to yourself, such as:

UT D **About Me**

My name is Sample Student

I'm from Hill and Dale College in Muskegon, Michigan → 

My college major is computer science

Here is my family → 

I'm the one in the middle

Copyright 2017, Dennis J. Frailey Software Safety Exercise 7

Slide 3 – A summary of safety issues for your topic, such as:

UTD **About Child Safety**

There are many potential hazards for children

- Batteries
- Bicycles
- Water/Boating
- Booster Seats
- Burns and Scalds
- Car Seats
- Carbon Monoxide
- Choking and Strangulation
- Driveway Safety
- Falls Apply Falls filter
- Fire Apply Fire filter
- Fireworks
- Getting Ready to Drive
- Guns
- Halloween
- Heatstroke
- Holidays
- In and Around Cars
- Laundry Packets
- Cars
- Toys
- Furniture tip overs
- And many, many more

Copyright 2017, Dennis J. Frailey Software Safety Exercise **8**

Slide 4 – Observations about the role of software in safety for your topic, such as:

UTD **Software in Child Safety**

Software may be found in many child safety devices, such as:

- Baby monitors
- Carbon monoxide detectors
- Smoke detectors
- Car rear view mirrors
- Sports equipment (e.g., concussion monitors)
- Cars
- Toys
- Televisions

Although software seldom directly controls safety critical functions, it is often used in warnings and must be designed to work correctly, even in the event of device malfunction.

Copyright 2017, Dennis J. Frailey Software Safety Exercise **9**

Slide 5 – Specific Software Issues in your safety topic:

UTD

Some Specific Software Issues Encountered in Child Safety Devices

- **Proper response to power failures**
- **Protection from intrusion by network hackers**
 - For devices connected to the internet such as baby monitors
- **Detection of hardware damage (for example, child spills juice onto an electronic monitor in his or her car seat)**
- **Operator error should be very uncommon**
 - Devices should be very easy to use and hard to misuse (because the users are typically not very knowledgeable about computers)
- **Do it right the first time**
 - Parents are unlikely to update software in their baby’s toys, monitors, etc.

Copyright 2016-2020, Dennis J. Frailey Software Safety – Part 1 **80**

Last slide:

UTD

Any Questions?



Copyright 2017, Dennis J. Frailey Software Safety Exercise **10**