CAPRA software
## CAPRA software

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CAPRA software
Implementation

Hazard
- CRISIS 2007
- ERN-Hurricane
- ERN-NH Rainfall
- ERN-Landslides
- ERN-Flood
- VHAST

Exposure
- Google Earth-based data gathering tool

Vulnerability
- ERN-Vulnerability

Hazard results in AME format
Exposure database in Shape format
Vulnerability representation in .dat format
CAPRA software
General characteristics

Desktop programs

✓ **License**: Open Source Apache 2.0 or BSD

✓ **Language**: Spanish and English

✓ **Operating**: MS Windows® XP Service Pack 2 or higher

✓ **Language**: Visual Basic

✓ **Technology**: MS .NET Framework
CAPRA software
General characteristics

Web-based programs

✓ **License**: Public domain (web page)

✓ **Language**: Spanish

✓ **Operating system**: Any

✓ **Language**: HTML

✓ **Technology**: JavaScript and Google Earth Library
Main modules
CRISIS 2007
Program for calculating seismic and tsunami hazard

Developer: Mario Ordaz et.al., National Autonomous University of Mexico (UNAM), Engineering Institute

Characteristics

✓ Version: 7.2.0.0
✓ Type: Hazard evaluation
✓ License: Apache 2.0
✓ Language: English
✓ Operating system: MS Windows®XP or higher
✓ Type: Desktop application
✓ Language: Visual Basic
✓ Requirements: .NET Framework 2.0

 Capacities

✓ Probabilistic modeling of seismic and tsunami hazard based on stochastic scenarios at any coordinates in the area of study.
✓ Modeling is based on integration of occurrence frequencies for any seismic intensity parameter.
✓ User and technical reference manual.
✓ Supports magnitude occurrence rates as a function of time between events.

Download at:
http://www.ecapra.org/software/CRISIS_2007.zip
ERN-Hurricane
Program for hurricane hazard assessment

Download at:
http://www.ecapra.org/software/ERN-Huracan.zip

Developer: ERN-AL Consortium

Characteristics
✓ Version: 1.0.0.0
✓ Type: Hazard assessment
✓ License: Apache 2.0
✓ Language: English and Spanish
✓ Operating system: MS Windows® XP or higher
✓ Type: Desktop application
✓ Language: Visual Basic
✓ Requirements: .NET Framework 2.0

Capabilities
✓ Modeling of hurricane wind, storm surge, and hurricane rainfall.
✓ Generates hazard graphs for families of simulated hurricanes based on historical scenario trajectories or actual historical trajectories.
✓ Calculates the hazard of an active hurricane about to impact an area of interest.
✓ User and technical reference manual.
ERN-NH rainfall
Program for calculating intense non-hurricane rainfall hazard

Download at:
http://www.ecapra.org/software/ERN-LluviaNH.zip

Developer: ERN-AL Consortium

Characteristics
✓ Version: 1.0.0.0
✓ Type: Hazard assessment
✓ License: Apache 2.0
✓ Language: English and Spanish
✓ Operating system: MS Windows® XP or higher
✓ Type: Desktop application
✓ Language: Visual Basic
✓ Requirements: .NET Framework 2.0

Capacities
✓ Modeling of storms based on PADF curves.
✓ Generates the desired number of storms comprehensively representing the precipitation characteristics of the basin modeled.
✓ User and technical reference manual.
✓ Analysis only at the level of the basin selected.
ERN-Flood

Program for calculating flood hazard

Download at:
http://www.ecapra.org/software/ERN-Inundacion.zip

Developer: ERN- AL Consortium

Characteristics

- **Version**: 1.0.0.0
- **Type**: Hazard assessment
- **License**: Apache 2.0
- **Language**: English and Spanish
- **Operating system**: MS Windows® XP or higher
- **Type**: Desktop application
- **Language**: Visual Basic
- **Requirements**: .NET Framework 2.0

Capacities

- Simplified and in-depth methods for flood hazard analysis
- The in-depth method constructs a unitary hydrogram at the mouth of the basin, based on its characteristics, for each precipitation event and analyzes the evolution of the flood event.
- The simplified method obtains potential areas of flooding that take very general account of topography and land use at each point analyzed.
- User and technical reference manual.
ERN-Landslide
Program for calculating landslide hazard

Download at:
http://www.ecapra.org/software/ERN-Deslizamiento.zip

Developer: ERN-AL Consortium

Characteristics

✓ **Version:** 1.0.0.0
✓ **Type:** Hazard assessment
✓ **License:** Apache 2.0
✓ **Language:** English and Spanish
✓ **Operating system:** MS Windows® XP or higher
✓ **Type:** Desktop application
✓ **Language:** Visual Basic
✓ **Requirements:** .NET Framework 2.0

Capacities

✓ Four different analysis models: Mora-Varhson, Newmark’s, infinite slope, and spherical failure.
✓ The methods utilize seismic action and rainfall as trigger factors.
✓ Seismic action may be incorporated into the program as an .ame hazard file resulting from a CRISIS 2007 assessment.
✓ User and technical reference manual.
VHAST
Volcanic Hazard Analysis and Simulation Tool

Download at:
http://www.ecapra.org/software/VHAST.zip

Developer: Gabriel Bernal

Characteristics
✓ Version: 2.0.0.0
✓ Type: Hazard assessment
✓ License: BSD open source
✓ Language: English and Spanish
✓ Operating system: MS Windows® XP or higher
✓ Type: Desktop application
✓ Language: Visual Basic
✓ Requirements: .NET Framework 4.0

Capacities
✓ Modeling of ash fall, lava flow, and pyroclastic flow events.
✓ Probabilistic modeling of the hazard by stochastic eruption simulation.
✓ Supports different methodologies of geographic location of emission sites.
✓ Based on simplified models for calculating distribution of volcanic output.
✓ Simulates wind fields for probabilistic analysis of ash fall.
✓ User and technical reference manual.
ERN-Vulnerability
Program for calculating vulnerability curves

Download at:
http://www.ecapra.org/software/ERN-Vulnerabilidad.zip

Developer: ERN-AL Consortium

Characteristics
 ✓ Version: 2.0.0.0
 ✓ Type: Vulnerability assessment
 ✓ License: Apache 2.0
 ✓ Language: English and Spanish
 ✓ Operating system: MS Windows® XP or higher
 ✓ Type: Desktop application
 ✓ Language: Visual Basic
 ✓ Requirements: .NET Framework 4.0

Capabilities
 ✓ Has a library of 27 seismic vulnerability functions for the typical regular structures most utilized in Latin America.
 ✓ Generates seismic vulnerability functions based on capacity curves.
 ✓ Seismic parameters entered and intensity measurements can be modified.
 ✓ Vulnerability functions can be defined for different types of hazards with a wide array of behaviors and two control points.
 ✓ User and technical reference manual.
Web-based exposure tool
Tool for surveying exposed elements

Available at:
http://capra.no-ip.org/levantamiento/index2.htm

Developer: ERN-AL Consortium

Characteristics
- **Version**: 2.0.0.0
- **Type**: Exposure survey
- **License**: Public domain
- **Language**: Spanish
- **Operating system**: Any
- **Type**: Web page
- **Language**: HTML
- **Requirements**: Java Script and Google Earth plug-in

Capacities
- Affords great versatility in data compilation based on Google Earth.
- Data can be compiled at the level of dots, lines, and polygons.
- Data can be incorporated for each geographical element studied.
- Progress of work can be visualized.
- Database of data compiled can be downloaded to a .csv format compatible with Excel.
CAPRA-GIS
System for visualizing and calculating disaster risk

Download at: http://www.ecapra.org/software/CAPRA-GIS(1.3.5).zip

Developer: ERN-AL Consortium

Characteristics
- Version: 1.3.5.0
- Type: Risk assessment
- License: Apache 2.0
- Language: English and Spanish
- Operating system: MS Windows® XP or higher
- Type: Desktop application
- Language: Visual Basic
- Requirements: .NET Framework 3.5

Capacities
- Visualizes geographic vector and raster data for risk analysis.
- .shp, .ame, and .grd files can be visualized.
- Geographic properties of the data visualized can be edited.
- Links different types of files: hazard, exposure, and vulnerability.
- Multi-risk analysis based on exposure can be performed.
- User and technical reference manual involved.
FileCAT
CAPRA data classification system

Developer: Gabriel Bernal

Characteristics
✓ Version: 2.2.0.0
✓ Type: File cataloger
✓ License: BSD open source
✓ Language: Spanish
✓ Operating system: MS Windows® XP or higher
✓ Type: Desktop application
✓ Language: Visual Basic
✓ Requirements: .NET Framework 4.0

Capacities
✓ Search for files by extension and group of extensions, on disk and in local network.
✓ Classification of files by category.
✓ Preview of typical CAPRA formats: .shp, .ame, .grd, .xml, .dat, .fvu, .res, etc.
✓ FileCAT projects are stored as Access 2003 databases.
✓ Includes SQL query tool.
✓ Excel files can be imported.
✓ Creates file datasets for consultation.
✓ Edits and creates file spatial metadata.

Download at:
http://www.filecat.org/ FileCAT.zip