

Crime Explorer

Testing Document

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INTRODUCTION

Crime Explorer is a program that focuses heavily on queries from the user. Through most stages of the script, the user is presented with choices. As such, we have defensively designed our script to prevent crashes, unsafe usage, and selections outside of regular bounds.

TESTING CATEGORIES

FILES & PARSING

Several error-checking measures related to the CSV file are built in, to prevent incorrect usage and damage to other files.

TYPE OF TEST	RESULT
<i>Too many / too few command line parameters</i>	Displays an error message, describes the correct parameter usage, and then terminates.
<i>Corrupt file</i>	Displays an error message including the filename, so the user can check for typos, and then terminates.
<i>Incorrect filetype</i>	This program only accepts CSV files, and terminates immediately if the user attempts to load in a different filetype.
<i>Unable to close</i>	Error message, program terminates. This is a failsafe if, for example, the file is in use.
<i>Parsing error</i>	The program checks for accented letters and replaces them with non-accented ones. However, if it encounters a character it still can't parse, it produces a warning giving the location and content of the line. The program is still operational if this occurs.

USER INTERFACE & INPUT

Crime Explorer asks for input from the user many times. Careful error-checking and defensive programming was required here.

TYPE OF TEST	RESULT
<i>Incorrect or missing input</i>	<p>Several components of the program ask the user for a specific input.</p> <p>For all such inputs, only the displayed choices are accepted, and the input prompt will loop until one is made.</p> <p>Examples for error and boundary-checking:</p> <p><i>Yes/No</i></p> <p><i>Select a year from 1998 to 2015</i></p> <p><i>(1) Quit Program, or (2) Run Again?</i></p>

OUTPUT

With this non-uniform dataset, it is unsafe to assume the data for a particular entry actually exists. Before moving forward, the program makes sure valid data is present for the specified year, location, and crime.

TYPE OF TEST	RESULT
<i>Plotting data with different modes</i>	We have tested the program with many variations of our program's output: one crime for one location, one crime for several locations, etc, and verified that the PDF files produced are correct.
<i>Cities which don't have data for all years from 1998-2015</i>	Since not all cities have data for every year, our program makes sure the data is present. If it is not, a message is displayed informing the user.