blunderDB

Release 0.8.0

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blunderDB is a software for creating backgammon position databases. Its main strength is to provide a single place where a player can aggregate the positions he or she has encountered (online, in tournaments) and be able to review these positions by filtering them with various filters that can be arbitrarily combined. blunderDB can also be used to create catalogs of reference positions.

The present documentation is structured as follows:

- the **download and installation** section explains how to obtain and run blunderDB.
- the **manual** describes the general functioning of blunderDB and how it should be used.
- the **user guide** is a practical introduction for quickly using blunderDB.
- the list of **commands** as well as the list of **keyboard shortcuts** enables efficient use of blunderDB.
- The **FAQ** provides answers to the most frequently asked questions.

CHAPTER

ONE

VERSION HISTORY

Version	Date	Cause and/or nature of changes
0.1.0	December 31, 2024	Beta version
0.2.0	January 6, 2025	Various bug fixes. Addition of match/TP/GV tables. Added search filters (moves, cube decisions, date). Added metadata for positions. Import/export functionality between blunderDB instances. Added metadata functionality for databases. Introduction of version numbers (database and application).
0.3.0	January 27, 2025	Various bug fixes. Automatically saves the window size. Imports any comments from XG.
0.4.0	February 3, 2025	Various bug fixes. Adding an icon for blunderDB. Filter corrections. Adding macOS support.
0.5.0	February 4, 2025	Addition of new filters (mirror, non-contact, jan blot, outfield blot).
0.6.0	February 13, 2025	Add filter library. Displaying the database version in the metadata.
0.7.0	February 16, 2025	Support Japanese and German XG exports.
0.8.0	May 3, 2025	New button to hide pipcount. Button to load random position.

CHAPTER

TWO

TABLE OF CONTENTS

2.1 Download and Installation

blunderDB is a single executable that requires no installation.

The latest version of blunderDB is available under the MIT license:

- for Windows: https://github.com/kevung/blunderDB/releases/latest/download/blunderDB-windows-0.8.0.exe
- for Linux: https://github.com/kevung/blunderDB/releases/latest/download/blunderDB-linux-0.8.0
- for Mac: https://github.com/kevung/blunderDB/releases/latest/download/blunderDB-macos-0.8.0.zip

Note

blunderDB uses Webview2 for rendering the graphical interface. It is likely that Webview2 is already present natively on your operating system. If not, the first execution of blunderDB will offer to download and install it. No user action is required.

Note

On Linux, if blunderDB is not executable after downloading, run the command `chmod +x ./blunderDB-linux-x.y.z` in a terminal, where x, y, z corresponds to the downloaded version.

Warning

On Windows, it is possible that it may hesitate to run blunderDB. See: Section 2.8 for an explanation of why and how to bypass any potential blocks.

Warning

On Mac, it is possible that it may have reservations about running blunderDB. See Section 2.9 to understand why and bypass any potential blocks.

2.2 Manual

blunderDB is software for creating position databases. The positions are stored in a database represented by a *.db* file.

The main interactions possible with blunderDB are:

- add a new position,
- modify an existing position,
- delete an existing position,
- search for one or more positions.

To do this, the user switches to dedicated modes for:

- navigation and viewing positions (NORMAL mode),
- editing positions (EDIT mode),
- editing a query to filter positions (COMMAND mode or search window).

The user can freely tag positions and annotate them with comments.

In the following sections of the manual, the graphical interface and the main modes of blunderDB are described.

2.2.1 Description of the interface

The interface of blunderDB is composed, from top to bottom, of:

- [top] the toolbar, which gathers all the main operations that can be performed on the database,
- [in the middle] the main display area, which allows for displaying or editing backgammon positions,
- [at the bottom] the status bar, which provides various information about the database or the current position.

Panels can be displayed to:

- display the analysis data associated with the current position from eXtreme Gammon (XG),
- display, add, or modify comments

Modal windows can be displayed to:

- [EDIT mode only] set search filters,
- display the blunderDB help.

The main display area provides the user with:

- a board to display or edit a backgammon position,
- the level and owner of the cube,
- the pip count of each player,
- the score of each player,
- the dice to play. If no values are displayed on the dice, the position of the dice indicates which player has the turn and that the position is a cube decision.

The status bar is structured from left to right with the following information:

- the current mode (NORMAL, EDIT, COMMAND),
- an informational message related to an operation performed by the user,
- the index of the current position, followed by the number of positions in the current library.

Note

In the case of positions resulting from a user search, the number of positions indicated in the status bar corresponds to the number of filtered positions.

2.2.2 NORMAL mode

NORMAL mode is the default mode of blunderDB. It is used for:

- scrolling through the different positions in the current library,
- displaying the analysis information associated with a position.
- displaying, adding, and modifying comments on a position.

Tip

Refer to Section 2.5.2 for NORMAL mode shortcuts.

2.2.3 EDIT mode

EDIT mode allows you to edit a position with the option to either add it to the database or define the type of position to search for. EDIT mode is activated by pressing the *TAB* key. The distribution of checkers, the cube, the score, and the turn can be modified using the mouse (see *Edit a position*).

Tip

Refer to Section 2.5.3 for EDIT mode shortcuts.

2.2.4 COMMAND mode

COMMAND mode allows you to perform all the functionalities of blunderDB available in the graphical interface: general operations on the database, position navigation, displaying analysis and/or comments, searching for positions based on filters… After getting familiar with the interface, it is recommended to gradually use this mode for a powerful and smooth use of blunderDB, especially for position search functionalities.

To switch to COMMAND mode from any other mode, press the *SPACE* key. To submit a query and exit COMMAND mode, press the *ENTER* key.

blunderDB executes the queries sent by the user as long as they are valid and immediately modifies the state of the database if necessary. There are no explicit save actions required from the user.

Tip

Refer to Section 2.4 for the list of available commands in COMMAND mode.

2.3 User Guide

This guide is a practical introduction to pick up quickly blunderDB.

2.3.1 Create a new database

To create a new database, click on the "New Database" button in the toolbar. Choose a path to save the database, as well as a name, and click "Save".

Note

The file extension for blunderDB databases is *.db*.

Tip

Keyboard shortcuts: *CTRL-N*. Command: `n`

2.3.2 Open an existing database

To load an existing database, click on the "Open Database" button in the toolbar. Navigate to the path where the database is located, select the *.db* file, and click "Open."

Tip

Keyboard shortcuts: *CTRL-O*. Command: `o`

2.3.3 Edit a position

To edit a position, switch to EDIT mode by pressing the *TAB* key. Edit the position with the mouse:

- Click on the points to add checkers. A left-click assigns checkers to player 1. A right-click assigns checkers to player 2. To insert a prime, click on the starting point, hold down the button, and release on the endpoint. Click on the bar to place checkers in the bar.
- To clear the position, double-click on an empty area outside the board or press the *BACKSPACE* key.
- To send the cube to Player 1, left-click on the cube. To send the cube to Player 2, right-click on the cube.
- To indicate the player who is to move, click on the designated dice area.
- To edit the dice, left-click to increase the value of a die, right-click to decrease the value of a die. If the dice faces are empty, it means the position is a cube decision.
- To edit the players' score, left-click to increase the score, right-click to decrease the score.

Tip

The input of the position with the mouse for the checkers is done in the same way as in XG.

2.3.4 Add a position to the database

After editing the previous position, blunderDB is in EDIT mode.

To save the previously obtained position, press *CTRL-S* or click the "Save Position" button in the toolbar.

Tip

From EDIT mode, switch to COMMAND mode and execute: `w`

2.3.5 Tag a position

To add a tag *toto* to the current position, switch to COMMAND mode by pressing *SPACE*, type `#toto`, and confirm the command by pressing *ENTER*.

2.3.6 Delete a position

To delete the current position from the database, press *Del* or click the "Delete Position" button in the toolbar.

Tip

In COMMAND mode, execute `d`.

Caution

The deletion of the position is final and does not require any user confirmation.

2.3.7 Import a position from XG

To import a position directly from XG,

1. display the position to import in XG and press *CTRL-C*,
2. open blunderDB and press *CTRL-V*.

2.3.8 Display the analysis of a position imported from XG

If a position analyzed by XG has been imported into blunderDB, the XG analysis can be displayed by pressing *CTRL-L*.

If the position corresponds to a checker decision, the five best moves are displayed on separate lines. For each line, the information provided is in this order: the associated checker move, the normalized equity, the error in equity of the move, the winning chances, gammon, and backgammon for the player, and the winning chances, gammon, and backgammon for the opponent, along with the level of analysis.

If the position corresponds to a cube decision, the cost of each decision is displayed along with the winning chances of the position.

2.3.9 Export a position to XG

To export a position from blunderDB to XG,

1. display the position to export in blunderDB and press *CTRL-C*,
2. open XG and press *CTRL-V*.

2.3.10 View the different positions

To view the different positions in the current library, use the *LEFT* and *RIGHT* keys. The *HOME* key allows you to go to the first position, and the *END* key lets you go to the last position.

To display the bearoff on the left, press *CTRL-LEFT*. To display the bearoff on the right, press *CTRL-RIGHT*.

2.3.11 Search for positions based on criteria

To search for types of positions,

- switch to EDIT mode by pressing *TAB*,
- edit the structure of the position to search for. blunderDB will filter positions that have at least the entered checker structure. If unsure, to maximize results, clear the position by pressing the *BACKSPACE* key. Edit the cube position and the score if necessary.

Method 1 (simple):

- Open the search window (*CTRL-F*)
- Add and set the search filters
- Confirm by clicking on "Search".

Method 2 (advanced):

- switch to COMMAND mode by pressing *SPACE*,
- type *s*, and add any additional filters (for example, *cube* or *score* to consider the cube and score, respectively. See Section 2.4.4 for a comprehensive list of available filters).
- confirm the request by pressing *ENTER*.

The displayed positions are those from the database that meet the search criteria entered by the user.

2.4 List of commands

2.4.1 Global operations

Command	Action
new, ne, n	Create a new database.
open, op, o	Open an existing database.
quit, q	Close blunderDB.
help, he, h	Open blunderDB help.
meta	Display database metadata.
met	Open the Kazaross-XG2 match equity table.
tp2	Open the takepoint table with a 2-cube.
tp2_live	Open the takepoint table with a 2-cube for long race positions.
tp2_last	Open the takepoint table with a 2-cube for last roll positions.
tp4	Open the takepoint table with a 4-cube.
tp4_live	Open the takepoint table with a 4-cube for long race positions.
tp4_last	Open the takepoint table with a 4-cube for last roll positions.
gv1	Open the gammon value table with a 1-cube.
gv2	Open the gammon value table with a 2-cube.
gv4	Open the gammon value table with a 4-cube.

2.4.2 NORMAL Mode

Command	Action
import, i	Import a position via a text file (txt).
delete, del, d	Delete the current position.
[number]	Go to the specified index position.
list, l	Show the analysis of the current position.
comment, co	Show/write comments.
filter, fl	Show/hide the filter library.
#tag1 tag2 ...	Tag the current position.
e	Load all positions from the database.

2.4.3 EDIT Mode

Command	Action
write, wr, w	Save the current position.
write!, wr!, w!	Update the current position.
s	Search for positions with filters.

2.4.4 Search Filters

The filters below must be juxtaposed during a search, i.e., after the start of the `s` command.

Warning

In the position search, by default, blunderDB takes into account the current checker structure, ignoring the position of the cube, the score, and the dice. To consider the position of the cube, the score, and the dice, it must be explicitly mentioned in the search.

Note

blunderDB considers that a backchecker is a checker located between point 24 and point 19.

Note

blunderDB considers that the number of checkers in the zone is the number of checkers located between point 12 and point 1.

Note

blunderDB considers the outfield to extend between point 18 and point 7.

Note

blunderDB considers the jan to extend between point 1 and point 6.

Tip

The parameters for filtering positions can be combined arbitrarily.

Query	Action
cube, cub, cu, c	The position checks the cube configuration.
score, sco, sc, s	The position checks the score.
d	The position checks the dice or the cube decision.
D	The position checks the dice roll.
nc	The position has no contact.
M	The position or the mirror one meets the filters.
p>x	The player has at least x pips behind in the race.
p<x	The player has at most x pips behind in the race.
px,y	The player has between x and y pips behind in the race.
P>x	The player has a race of at least x pips.
P<x	The player has a race of at most x pips.
Px,y	The player has a race between x and y pips.
e>x	The equity (in millipoints) of the position is greater than x.
e<x	The equity (in millipoints) of the position is less than x.
ex,y	The equity (in millipoints) of the position is between x and y.
w>x	The player has winning chances greater than x%.
w<x	The player has winning chances less than x%.
wx,y	The player has winning chances between x% and y%.
g>x	The player has gammon chances greater than x%.
g<x	The player has gammon chances less than x%.
gx,y	The player has gammon chances between x% and y%.
b>x	The player has backgammon chances greater than x%.
b<x	The player has backgammon chances less than x%.
bx,y	The player has backgammon chances between x% and y%.
W>x	The opponent has winning chances greater than x%.
W<x	The opponent has winning chances less than x%.
Wx,y	The opponent has winning chances between x% and y%.
G>x	The opponent has gammon chances greater than x%.
G<x	The opponent has gammon chances less than x%.
Gx,y	The opponent has gammon chances between x% and y%.
B>x	The opponent has backgammon chances greater than x%.
B<x	The opponent has backgammon chances less than x%.
Bx,y	The opponent has backgammon chances between x% and y%.
o>x	The player has at least x checkers off.
o<x	The player has at most x checkers off.
ox,y	The player has between x and y checkers off.
O>x	The opponent has at least x checkers off.
O<x	The opponent has at most x checkers off.
Ox,y	The opponent has between x and y checkers off.
k>x	The player has at least x backcheckers.
k<x	The player has at most x backcheckers.
kx,y	The player has between x and y backcheckers.

continues on next page

Table 1 – continued from previous page

Query	Action
K>x	The opponent has at least x backcheckers.
K<x	The opponent has at most x backcheckers.
Kx,y	The opponent has between x and y backcheckers.
z>x	The player has at least x checkers in the zone.
z<x	The player has at most x checkers in the zone.
zx,y	The player has between x and y checkers in the zone.
Z>x	The opponent has at least x checkers in the zone.
Z<x	The opponent has at most x checkers in the zone.
Zx,y	The opponent has between x and y checkers in the zone.
bo>x	The player has at least x blots in the outfield.
bo<x	The player has at most x blots in the outfield.
box,y	The player has between x and y blots in the outfield.
BO>x	The opponent has at least x blots in the outfield.
BO<x	The opponent has at most x blots in the outfield.
BOx,y	The opponent has between x and y blots in the outfield.
jb>x	The player has at least x blots in the jan.
jb<x	The player has at most x blots in the jan.
jbx,y	The player has between x and y blots in the jan.
JB>x	The opponent has at least x blots in the jan.
JB<x	The opponent has at most x blots in the jan.
JBx,y	The opponent has between x and y blots in the jan.
t'word1;word2;...'	The position comments contain at least one of the words.
m'pattern1,pattern2,...'	The best checker moves containing at least one of the patterns.
m'ND,DT,DP,...'	The best cube decisions for No Double/Take, Double Take, Double Pass.
T>x	Date of position addition after x (YYYY/MM/DD).
T<x	Date of position addition before x (YYYY/MM/DD).
Tx,y	Date of position addition between x and y (YYYY/MM/DD).

Note

Filtering positions based on the dice roll (*D*) necessarily implies filtering positions based on the type of decision (*d*).

Note

For the relative difference filter in the race (*p>x*, *p<x*, *px,y*), the player is behind in the race compared to the opponent if *x>0* and ahead if *x<0*. For example: *p<-10*: the player is at least 10 pips ahead in the race. *p50,70*: the player is between 50 and 70 pips behind in the race.

For example, the command `s s c p-20,-5 w>60 z>10 K2,3` filters all positions taking into account the checker structure, the score, and the cube of the edited position where the player has between 20 and 5 pips ahead in the race, with at least 60% winning chances, at least 10 checkers in the zone, and the opponent has between 2 and 3 backcheckers.

2.4.5 Various commands

Command	Action
clear, cl	Clear the command history.
migrate_from_1_0_to_1	Migrate the database from version 1.0 to version 1.1.
migrate_from_1_1_to_1	Migrate the database from version 1.1 to version 1.2.

2.5 Keyboard shortcuts

2.5.1 General

Shortcut	Action
CTRL-N	Create a new database.
CTRL-O	Open an existing database.
CTRL-Q	Close blunderDB.
CTRL-H, ?	Show/hide the help.

2.5.2 NORMAL mode.

Shortcut	Action
CTRL-I	Import a position from a text file (txt).
CTRL-C	Export a position to the clipboard for import into XG.
CTRL-V	Import an XG position.
Del	Delete the current position.
TAB	Switch to EDIT mode.
SPACE	Switch to COMMAND mode.
PageUp, h	First position.
LEFT, k	Previous position.
RIGHT, j	Next position.
PageDown, l	Last position.
r	Random position.
CTRL-LEFT	Board orientation to the left.
CTRL-RIGHT	Board orientation to the right.
p	Show/hide pipcount.
CTRL-K	Show the position navigation window.
CTRL-L	Show/hide the analysis.
CTRL-P	Show/hide the comments.
CTRL-G	Show the position metadata.
CTRL-R	Reload all the positions from the database.
CTRL-B	Show/hide the filter library.

2.5.3 EDIT mode

Shortcut	Action
TAB	Switch to NORMAL mode.
SPACE	Switch to COMMAND mode.
BACKSPACE	Clear the current position.
CTRL-S	Add a position.
CTRL-U	Update a position.
CTRL-F	Search for a position.

2.5.4 COMMAND mode.

Shortcut	Action
ENTER	Execute a query.
ESC	Exit COMMAND mode.
BACKSPACE	Clear the command. If empty, close COMMAND mode.
UP	Browse command history up.
DOWN	Browse command history down.

2.6 Frequently Asked Questions (FAQ)

2.6.1 What is the purpose of blunderDB?

blunderDB allows users to create a personalized database of positions. Its strength lies in not presupposing any classification *a priori*. This gives users the freedom to query positions with great flexibility by combining various criteria (race, structure, cube, score, backcheckers, checkers in the zone, chances of winning/gammon/backgammon, etc.).

Another convenient use of blunderDB is the creation of reference position catalogs. With the ability to tag positions, users can organize all their reference positions in a structured way using a single file. I hope that blunderDB facilitates the sharing of positions between players.

2.6.2 What motivated the creation of blunderDB?

I used to store interesting positions or blunders in different folders. However, I encountered difficulties in retrieving positions based on criteria that weren't initially considered in my choice of thematic categories. For example, if the positions were sorted by type of game (race, holding game, blitz, backgame, etc.), how could I retrieve all positions at a certain score or at a given cube level? Additionally, some old positions tended to be forgotten. I wanted a tool that aggregates all my positions without presupposing thematic categories *a priori*, allowing me to ask questions of the database. This type of software is quite common in chess, like ChessBase.

2.6.3 How to save the state of the current database?

The database is updated immediately upon validation of the request. No explicit saving operation is necessary.

2.6.4 Should I create different databases for different categories of positions?

Unless there are clearly identified reasons, it is essential not to split positions into separate databases, as this could prevent you from linking them in future searches. The philosophy of blunderDB is not to assume position categories *a priori* but to allow the user to query them flexibly. When positions have been encountered under specific conditions or for particular reasons, it may be wise to store them in separate databases. For example, you could create distinct position databases for:

- reference positions,
- blunders from live tournaments,
- blunders from online play.

2.6.5 Can I modify, copy, share blunderDB?

Yes, absolutely. blunderDB is licensed under the MIT license.

2.6.6 What data format does blunderDB use?

The database is a simple SQLite file. In the absence of blunderDB, it can thus be opened with any SQLite file editor.

2.6.7 What were the design principles of blunderDB?

The modal operation of blunderDB (NORMAL, EDIT, COMMAND) is inspired by the very powerful text editor Vim. I wanted blunderDB to be lightweight, standalone, installation-free, and available on multiple platforms, which led to my choice of the Go programming language and the Svelte library. For database serialization, the file format needed to be cross-platform and suitable for containing a database. The SQLite file format seemed like the perfect choice.

2.6.8 What is the software architecture of blunderDB?

- The backend is coded in Go. It is responsible for all operations on the SQLite database that stores the positions.
- The frontend is coded in Svelte. It is responsible for rendering the graphical interface and the Backgammon board.
- The application is encapsulated with Wails, enabling the production of native desktop applications that can run on both Windows and Linux.
- The database is managed by SQLite.

For more information, see the blunderDB GitHub repository.

2.6.9 On which platforms does blunderDB run?

blunderDB runs on Windows, Linux and Mac.

2.6.10 Where does the blunderDB icon come from?

The blunderDB icon is the “goggling” emoticon from the SMirC series.

2.7 Annex: Advanced Filter Usage

Warning

This section is for advanced users of blunderDB who wish to fully leverage the position search features.

Filters are at the heart of position analysis in blunderDB. Their use allows for searching specific positions with great precision. In this section, the use of filters through the COMMAND mode is detailed. The COMMAND mode can be accessed by pressing the `SPACE` key. It allows users to quickly combine filters and use the filter library with ease.

2.7.1 Command-line search for positions

To perform a search using filters,

1. Switch to EDIT mode using the `TAB` key.
2. Edit the current position.
3. Switch to COMMAND mode using the `SPACE` key.
4. Use the command `s` followed, optionally, by filters.
5. Start the search with the `ENTER` key.

Warning

Don't forget to clear the current position before starting a search (`BACKSPACE` key), if it isn't the one you want, to avoid excessively filtering checker structures.

Note

The list of available filters in COMMAND mode is provided in Section 2.4.4.

2.7.2 Filter Library

The filter library allows the user to save search commands to facilitate their thematic studies.

To add a filter to the library,

1. Switch to EDIT mode.
2. Open the filter library by pressing `CTRL-B`.
3. Edit the current position.
4. Give a name to the filter.
5. Edit the search command.
6. Save the search command using the "Add" button.

Tip

While editing the command, you can use the `UP` and `DOWN` arrow keys to navigate through the command history.

To use a filter saved in the library,

1. Switch to NORMAL mode.
2. Open the filter library by pressing `CTRL-B`.
3. Search for the desired filter.
4. Double-click on the filter to start the search.

2.7.3 Examples

Here are some examples of using filters in COMMAND mode:

Type of position	Checker structure	Command
Races		s nc
Short races		s nc P<70
Hit to point 1		s m"6/1*"
Backgame 1-4	points 24, 21	s p>35
Take/Pass decision at 2-away 4-away	empty dice for top player, score 2a-4a	s s d
Too Good doubles	empty dice for bottom player	s d e>1000
Blitz with at least 20% gammon	point in jan, checkers on the bar	s g>20
Positions from Aachen2024 tournament		s t"Aachen2024"
One backchecker to bring back		s k1,1
Leave the 20-point anchor	point 20	s m"20/"
Prime vs prime	Set the primes	s
Ace-point bear-off	point 1 for the opponent	s P<60
Double with at least 20pip ahead	empty dice for bottom player	s d p<-20

2.8 Windows Annex: False Detection of blunderDB as Malware

Note

The following applies to Windows 10 and 11 operating systems.

Windows now requires software publishing companies or independent software developers to digitally certify their applications, or even distribute them via the Windows Store. It is therefore recommended to turn to external companies to obtain a digital certificate, which costs several hundred euros (see, for example, https://learn.microsoft.com/en-us/archive/blogs/ie_fr/certificats-de-signature-de-code-ev-extended-validation-et-microsoft-smartscreen).

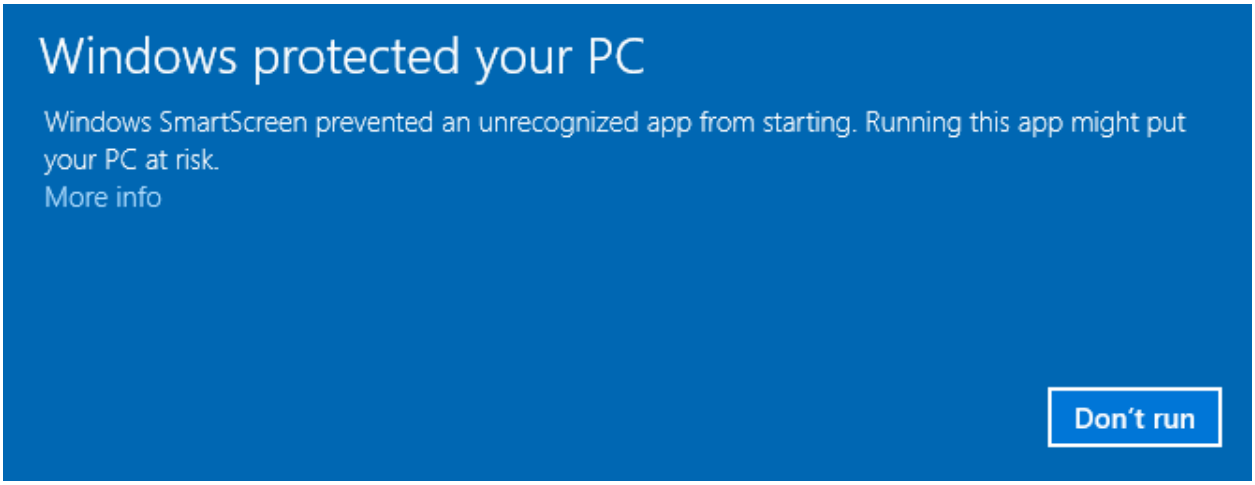
Since I am offering blunderDB for free, I do not wish to pursue these costly options. Consequently, it is very likely that Windows will warn you of a potential threat or even block the execution of blunderDB entirely. The following sections explain the steps to bypass Windows' warnings.

2.8.1 Windows SmartScreen Warning

After downloading blunderDB, when you run it, Windows may display a warning such as:

If you want to allow a specific executable blocked by SmartScreen:

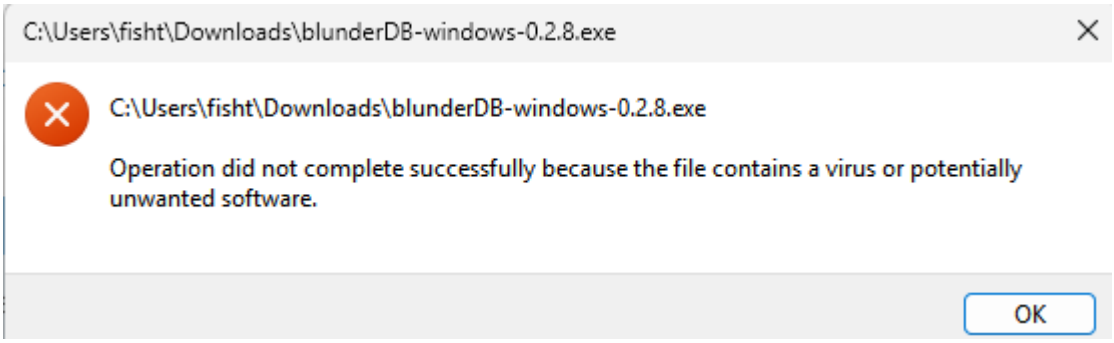
1. **Try running the executable**:
   - When you attempt to launch the executable, SmartScreen may block it and display a warning.
2. **Click on "More Info"**:
   - In the SmartScreen warning window, click on **More Info**.



3. **Select "Run anyway"**:
    - If you trust the executable, click **Run anyway** to bypass the SmartScreen warning for this instance.

2.8.2 Windows Defender Blocking

For certain security settings in Windows, even after bypassing SmartScreen (see the previous section), Windows Defender may prevent the execution of blunderDB with messages such as:



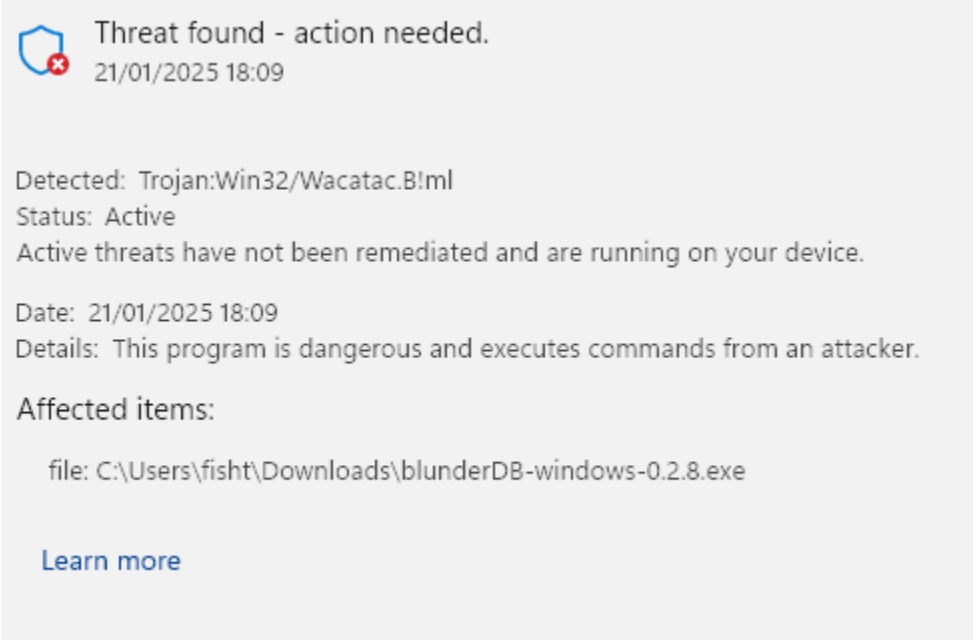
or even:

or even place it in quarantine.

Windows Defender is known to trigger false positives. This issue is explicitly mentioned in the FAQ on the official Golang website (https://go.dev/doc/faq#virus) or in GitHub tickets for some projects programmed in Go (https://github.com/golang/vscode-go/issues/3182).

If you want to prevent Windows Security from scanning blunderDB:

1. **Open Windows Security**:
    - Go to **Start** and type **Windows Security**.
2. **Go to "Virus & Threat Protection"**:
    - Click on **Virus & Threat Protection**.
3. **Manage Settings**:
    - Scroll down and click on **Manage settings** under Virus & Threat Protection settings.
4. **Add or remove exclusions**:



- Scroll down to the **Exclusions** section and click on **Add or remove exclusions**.

5. **Add an exclusion**:
   - Click on **Add an exclusion** and select **File**. Then, navigate to the executable you want to exclude and select it.

2.9 Mac Annex: Possible Blocking of blunderDB

Note

The following concerns the macOS operating system.

Mac requires software publishing companies or independent software developers to digitally certify their applications. The developer must enroll in the Apple Developer Program by paying an annual membership fee (https://developer.apple.com/support/compare-memberships/).

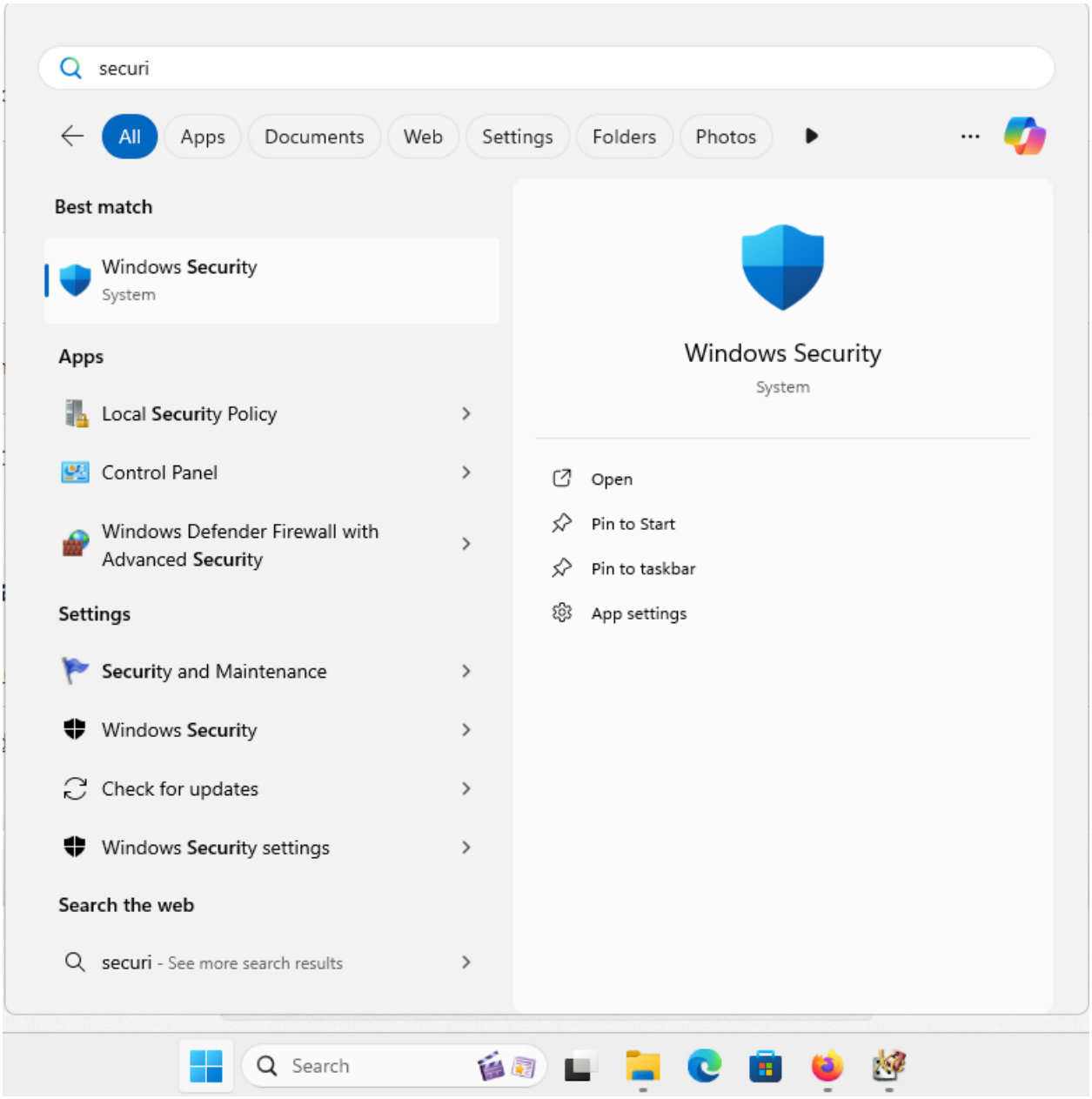
Since I am sharing blunderDB for free, I do not wish to pursue these costly options. As a result, Mac will likely warn you of a potential risk or even block the execution of blunderDB entirely. The following sections explain the steps to bypass Mac's restrictions.

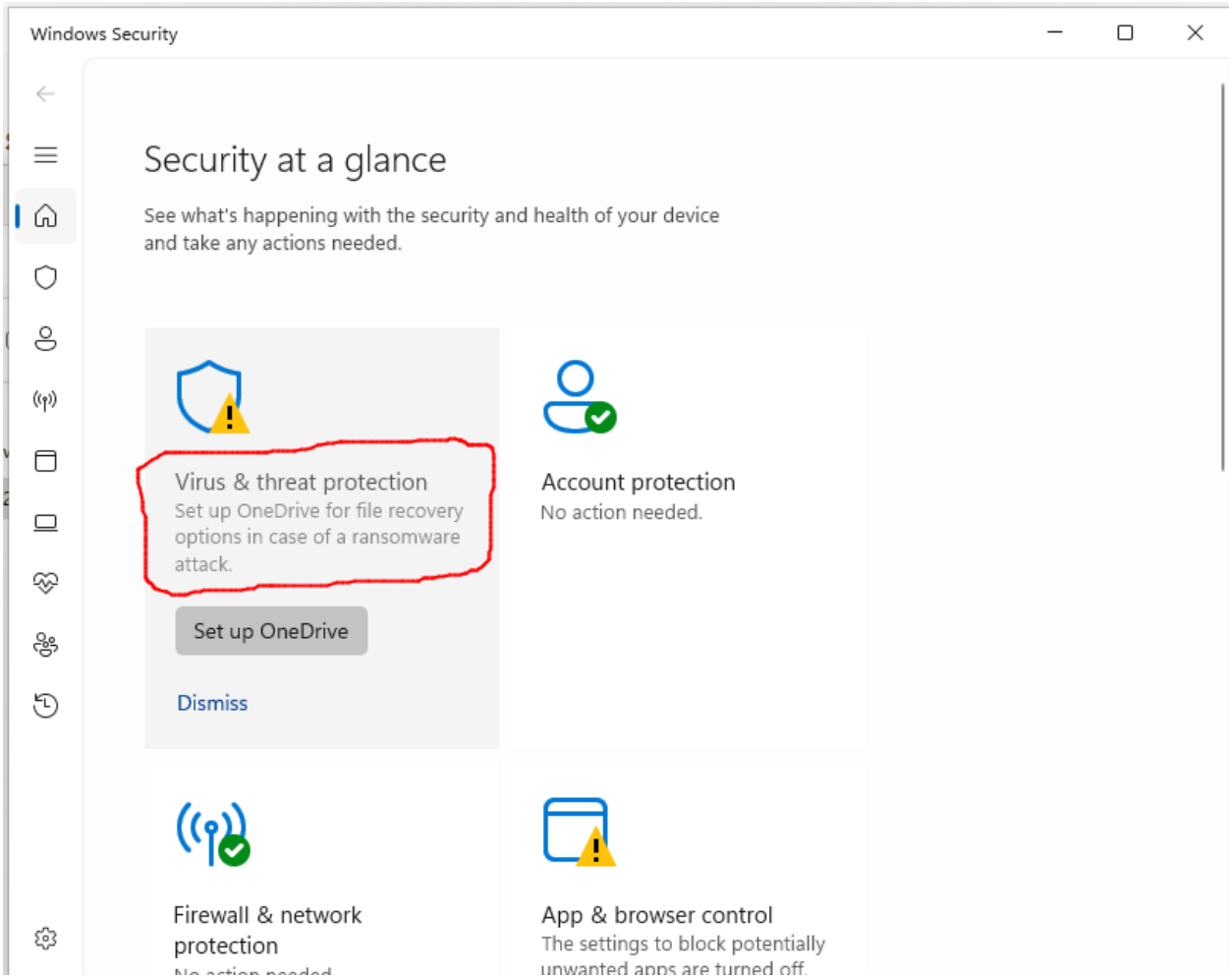
2.9.1 Installation of blunderDB

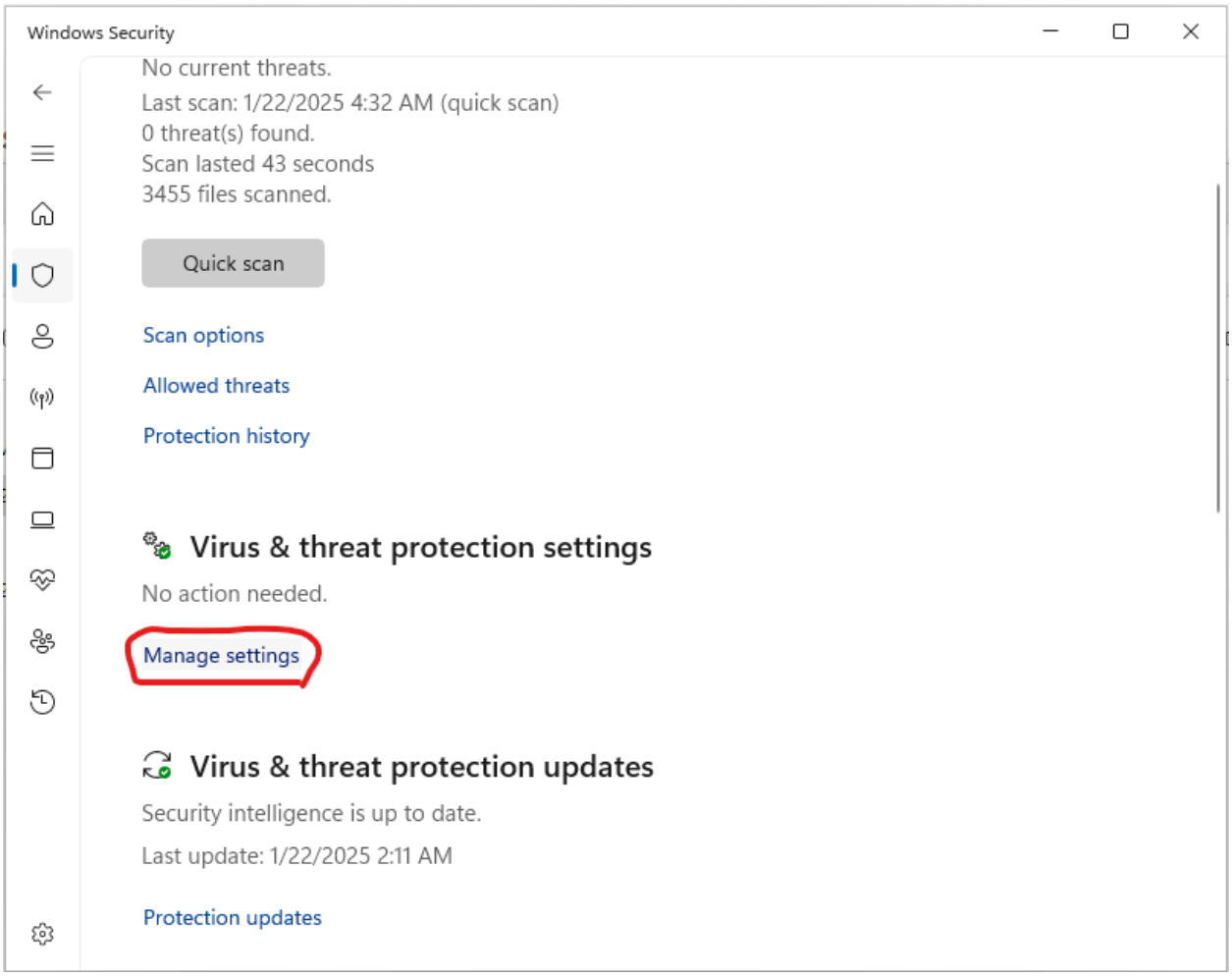
After downloading blunderDB, drag the downloaded file into the Applications section of your Finder. If you have already tried to run blunderDB and Mac warns you of a potential risk, follow the steps below.

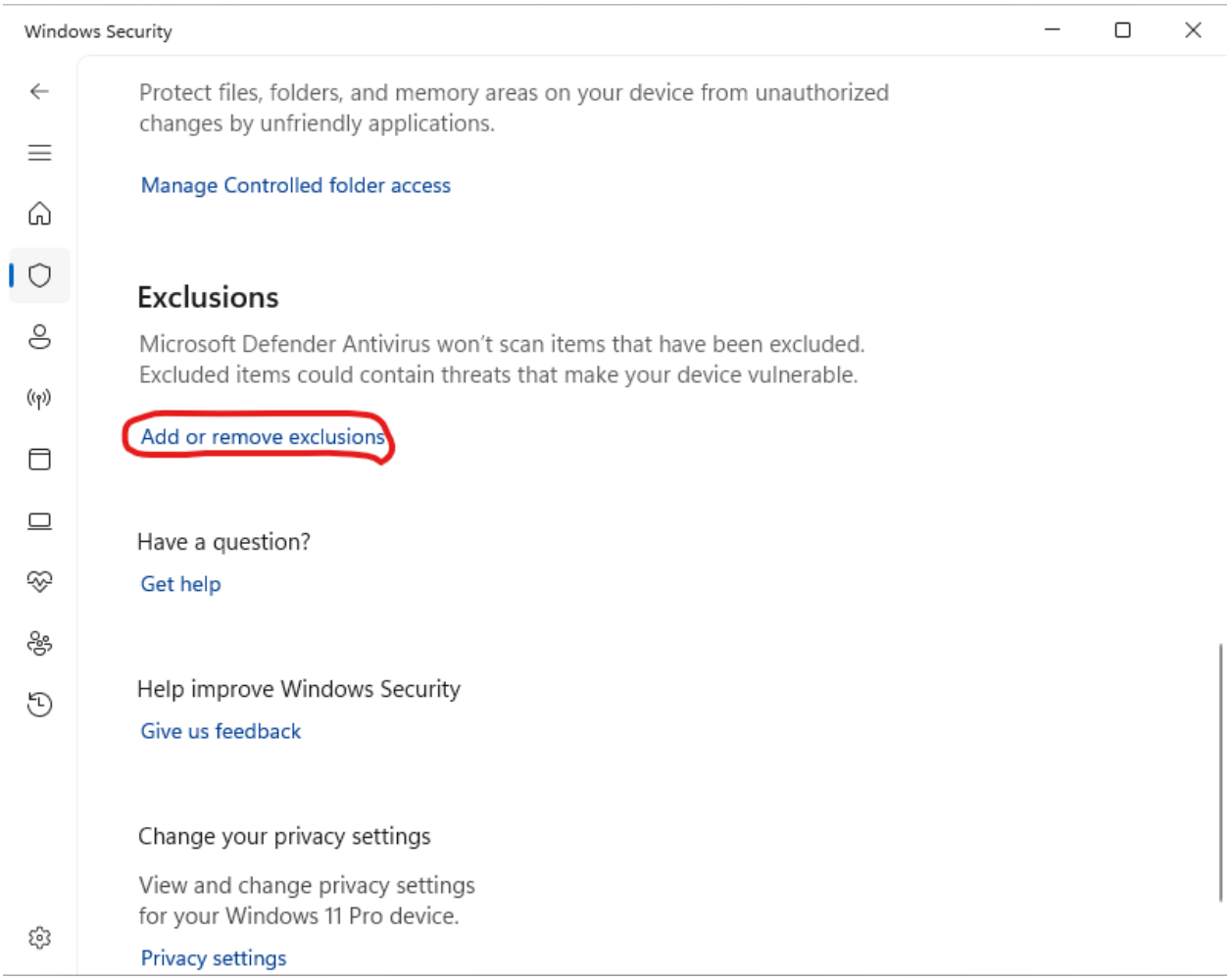
2.9.2 Authorization to Run blunderDB

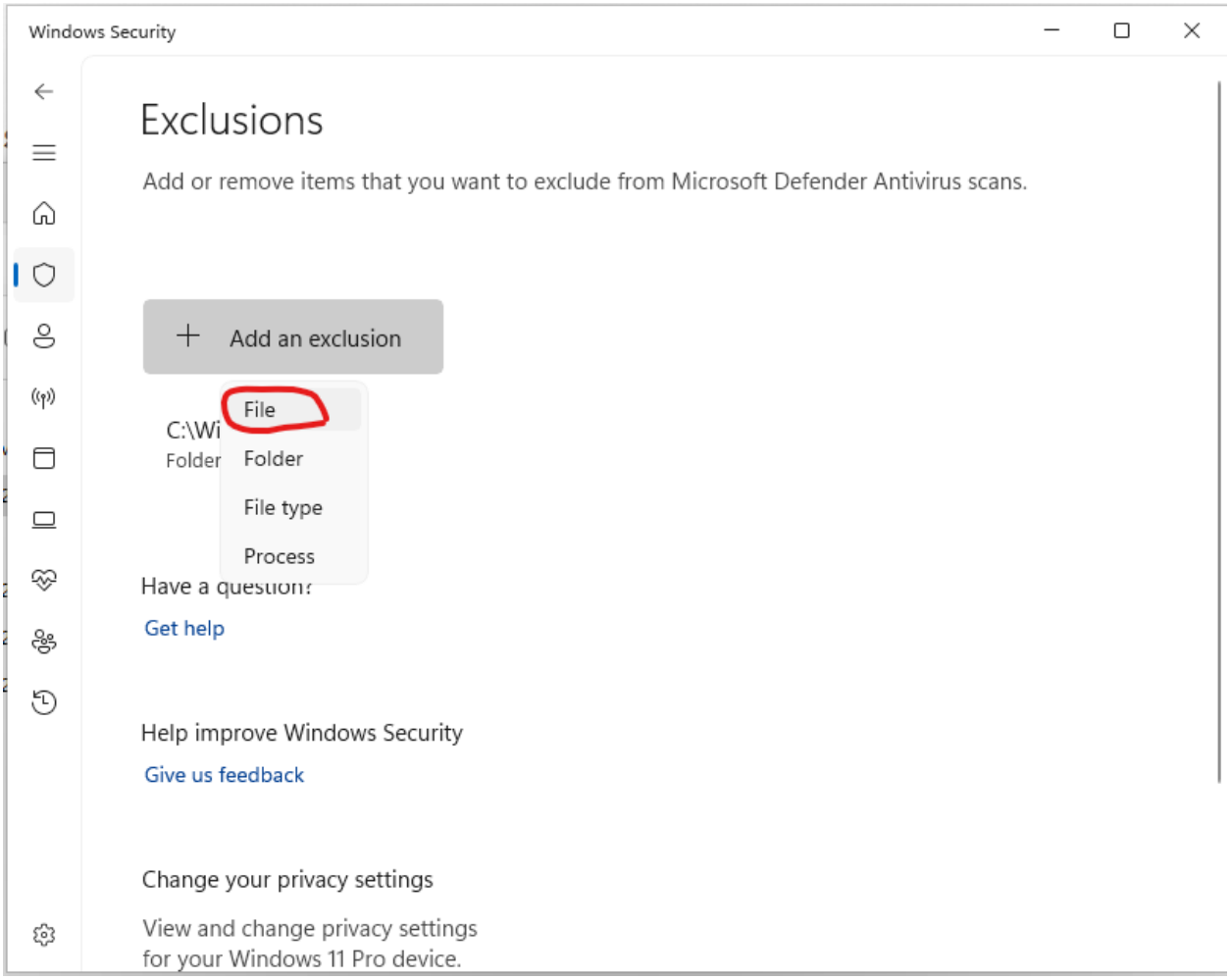
1. Open Finder and go to the Applications section.
2. Find blunderDB and right-click on it.
3. Select Open.

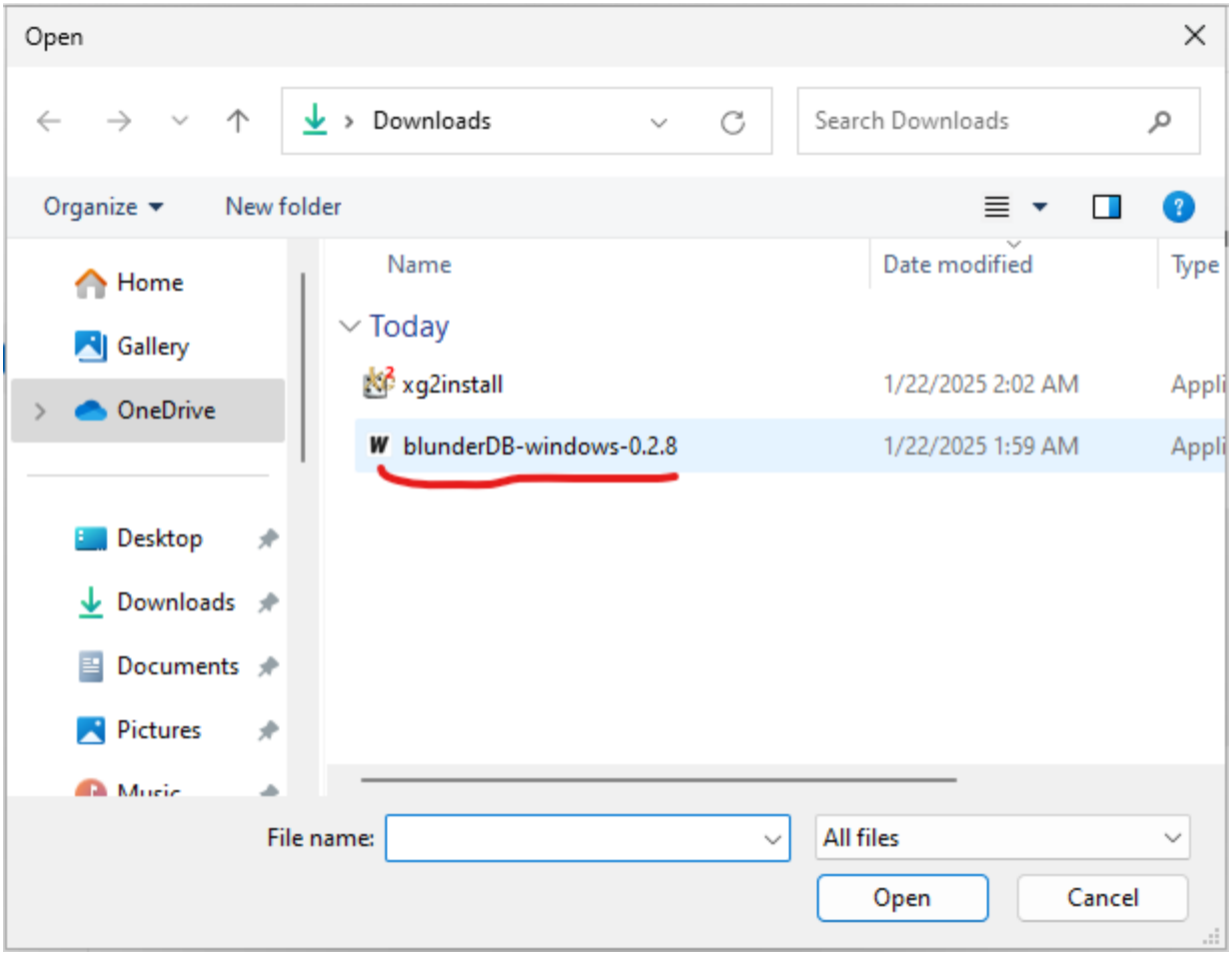

securi
All
Apps
Documents
Web
Settings
Folders
Photos
Best match
Windows Security
System
Apps
Local Security Policy
Control Panel
Windows Defender Firewall with Advanced Security
Settings
Security and Maintenance
Windows Security
Check for updates
Windows Security settings
Search the web
securi - See more search results
Windows Security
System
Open
Pin to Start
Pin to taskbar
App settings
Search

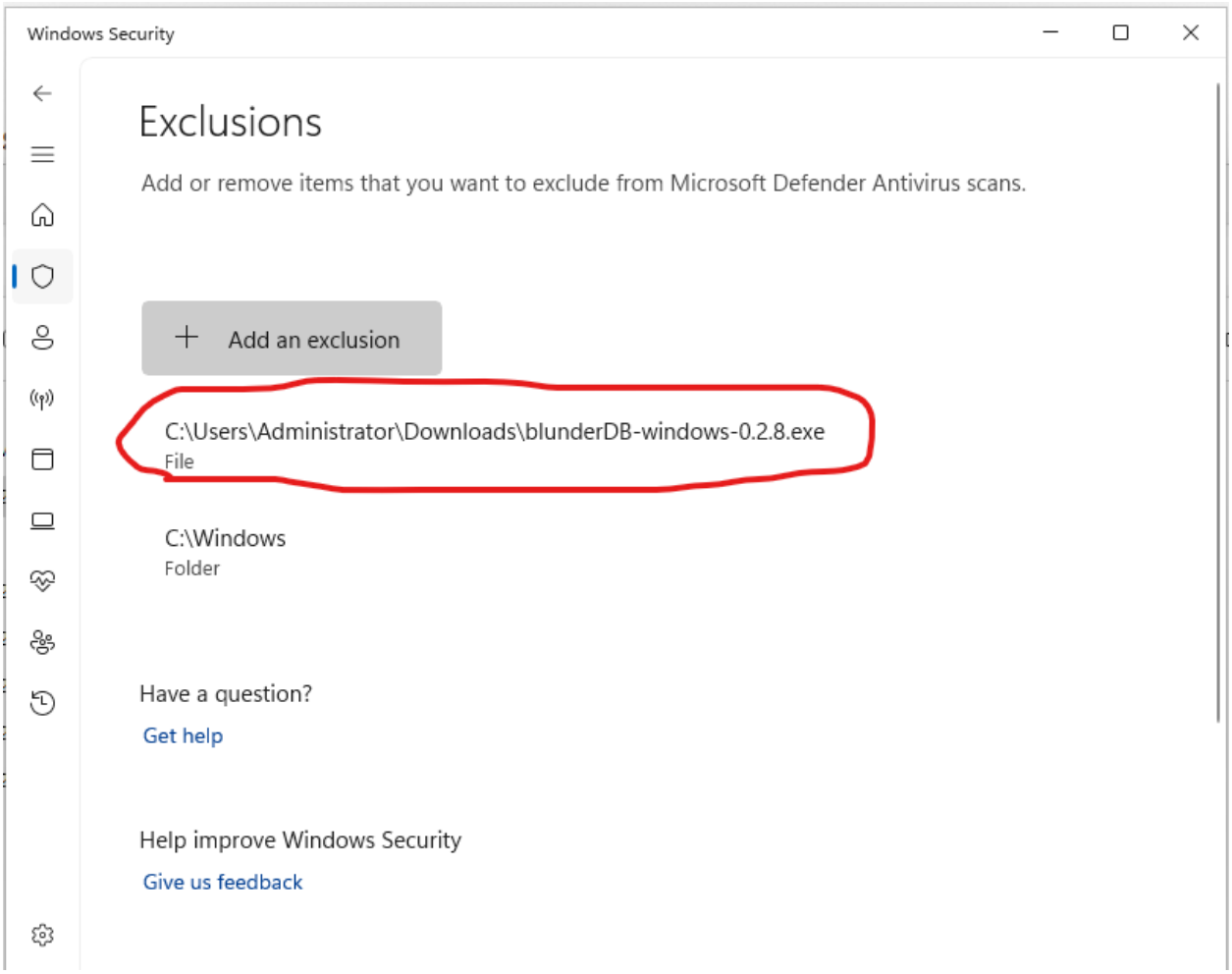

Windows Security
Security at a glance
See what's happening with the security and health of your device and take any actions needed.
Virus & threat protection
Set up OneDrive for file recovery options in case of a ransomware attack.
Set up OneDrive
Dismiss
Account protection
No action needed.
Firewall & network protection
App & browser control
The settings to block potentially unwanted apps are turned off.


Windows Security
No current threats.
Last scan: 1/22/2025 4:32 AM (quick scan)
0 threat(s) found.
Scan lasted 43 seconds
3455 files scanned.
Quick scan
Scan options
Allowed threats
Protection history
Virus & threat protection settings
No action needed.
Manage settings
Virus & threat protection updates
Security intelligence is up to date.
Last update: 1/22/2025 2:11 AM
Protection updates


Windows Security
Protect files, folders, and memory areas on your device from unauthorized changes by unfriendly applications.
Manage Controlled folder access
Exclusions
Microsoft Defender Antivirus won't scan items that have been excluded. Excluded items could contain threats that make your device vulnerable.
Add or remove exclusions
Have a question?
Get help
Help improve Windows Security
Give us feedback
Change your privacy settings
View and change privacy settings for your Windows 11 Pro device.
Privacy settings


Windows Security
Exclusions
Add or remove items that you want to exclude from Microsoft Defender Antivirus scans.
Add an exclusion
File
Folder
File type
Process
Get help
Help improve Windows Security
Give us feedback
Change your privacy settings
View and change privacy settings
for your Windows 11 Pro device.


Open
Downloads
Search Downloads
Organize
New folder
Home
Gallery
OneDrive
Desktop
Downloads
Documents
Pictures
Name
Date modified
Type
Today
xg2install
1/22/2025 2:02 AM
blunderDB-windows-0.2.8
1/22/2025 1:59 AM
File name:
All files
Open
Cancel


Windows Security
Exclusions
Add or remove items that you want to exclude from Microsoft Defender Antivirus scans.
Add an exclusion
C:\Users\Administrator\Downloads\blunderDB-windows-0.2.8.exe
File
C:\Windows
Folder
Have a question?
Get help
Help improve Windows Security
Give us feedback

4. A warning window will appear. Click Open.
5. blunderDB will open, and you can start using it.

Note

You only need to perform this operation once. Afterward, you can open blunderDB without having to go through these steps.

2.10 Annex: Database Schema

Important

Always back up your .db file before performing database migrations.

2.10.1 Version 1.0.0

Version 1.0.0 of the database contains the following tables:

- **position**: Stores the positions with the columns *id* (primary key) and *state* (state of the position in JSON format).
- **analysis**: Stores the analyses of the positions with the columns *id* (primary key), *position_id* (foreign key referencing *position*), and *data* (analysis data in JSON format).
- **comment**: Stores the comments associated with the positions with the columns *id* (primary key), *position_id* (foreign key referencing *position*), and *text* (comment text).
- **metadata**: Stores the metadata of the database with the columns *key* (primary key) and *value* (value associated with the key).

2.10.2 Version 1.1.0

Version 1.1.0 of the database adds the following table:

- **command_history**: Stores the command history with the columns *id* (primary key), *command* (text of the command), and *timestamp* (date and time of command execution).

The other tables remain unchanged from version 1.0.0.

To migrate the database from version 1.0.0 to version 1.1.0, execute the command `migrate_from_1_0_to_1_1` in blunderDB.

2.10.3 Version 1.2.0

Version 1.2.0 of the database adds the following table:

- **filter_library**: Stores search filters with the columns *id* (primary key), *name* (filter name), *command* (command associated with the filter), and *edit_position* (position edited when saving the filter).

The other tables remain unchanged from version 1.1.0.

To migrate the database from version 1.1.0 to version 1.2.0, execute the command `migrate_from_1_1_to_1_2` in blunderDB.

https://youtu.be/Ln7XKVFqfUk

https://youtu.be/HkY4iXjxMeI

CHAPTER

THREE

CONTACT

Author: Kévin Unger <blunderdb@proton.me>. You can also find me on Heroes under the username postmanpat.

I initially developed blunderDB for my personal use to help detect patterns in my mistakes. However, it's very rewarding to receive feedback, especially after spending a lot of time on design, coding, and debugging. So feel free to reach out to share your experiences. All (constructive) feedback is welcome.

Here are several ways to discuss:

- Join the Discord server of blunderDB: https://discord.gg/DA5PpzM9En
- Email me at blunderdb@proton.me.
- Discuss with me if we meet in a tournament.
- On GitHub.
  - Open an issue: https://github.com/kevung/blunderDB/issues
  - For bug fixes or improvement suggestions, create a pull request.

CHAPTER

FOUR

DONATE

If you appreciate blunderDB and want to support its past and future developments, you can

- buy me a drink if we have the pleasure of meeting!
- make a small donation via PayPal to the address blunderdb@proton.me

CHAPTER

FIVE

ACKNOWLEDGMENTS

I dedicate this little software to my wife Anne-Claire and our dear daughter Perrine. I would especially like to thank a few friends:

- *Tristan Remille*, for introducing me to backgammon with joy and kindness; for showing the way in understanding this wonderful game; and for continuing to support me despite my poor attempts to improve my play.
- *Nicolas Harmand*, a cheerful companion for over a decade in great adventures, and a fantastic sparring partner since he has caught the backgammon bug.