

Program Name: Auto Backup

PROGRAM DESCRIPTION:

This program is a GUI application for backing up files from a source folder to a destination folder. The backup can be performed manually by clicking on the "Force Backup" button or automatically based on a period defined in a configuration file. The program uses the `shutil` and `os` modules for copying files, the logging module for logging backup information, the `psutil` module for checking if the program is running, and the `tkinter` module for creating a graphical user interface.

PROGRAM WORKFLOW:

1. Import necessary modules
2. Read period configuration from "period.config" file to determine the day and time when backup is to be performed
3. Define source and destination folders for backup
4. Define log file name and format
5. Define a backup function that loops through files in the source folder, checks if each file is newer than the existing backup, copies the file to the destination folder if it is, and logs the result in the log file and GUI.
6. Create GUI elements: root window, title label, force backup button, backup period status, source and destination buttons, and corresponding labels.
7. Define the change source function to allow the user to change the source folder
8. Define the change destination function to allow the user to change the destination folder
9. Define the main function that schedules backup based on period configuration and checks if the program is already running.
10. Start the main function to run the program.

PROGRAM FUNCTIONS:

1. `backup()` - This function copies files from the source folder to the destination folder if they are newer than the existing backup or do not exist in the destination folder. It logs the result of each backup in the log file and GUI.
2. `change_source()` - This function allows the user to change the source folder by selecting a new folder using a file dialog. It updates the source folder variable, prints the new source folder path to the console, and logs the change in the log file.
3. `change_destination()` - This function allows the user to change the destination folder by selecting a new folder using a file dialog. It updates the destination folder variable, prints the new destination folder path to the console, and logs the change in the log file.

4. `main()` - This function schedules the backup function to run on the specified day and time in the period configuration file. It checks if the program is already running and if it is, it skips the scheduled backup. If it is not running, it sets the `program_is_running` variable to `True`, runs the backup function, sets the `program_is_running` variable to `False`, and logs the result in the log file.

PROGRAM VARIABLES:

1. `program_is_running` - A boolean variable that indicates whether the program is running or not.
2. `_day` - A string variable that holds the day when the backup is to be performed as specified in the period configuration file.
3. `_time` - A string variable that holds the time when the backup is to be performed as specified in the period configuration file.
4. `source` - A string variable that holds the path of the source folder for backup.
5. `destination` - A string variable that holds the path of the destination folder for backup.
6. `log_file` - A string variable that holds the path of the log file for storing backup information.
7. `lines` - A list variable that holds the lines of the period configuration file.
8. `count` - An integer variable that holds the number of files copied during each backup.

DEPENDENCIES:

This program depends on the `shutil`, `os`, `logging`, `psutil`, `tkinter` and `schedule` modules. The `psutil` module may need to be installed separately.

HOW TO RUN THE PROGRAM:

To run the program, simply execute the script in a Python environment that has the necessary modules installed. The program will run automatically according to the period configuration file. To perform a manual backup, click on the “Force Backup” green button on top of the GUI.

Document prepared by Elton Fungirai – eltonfungirai@gmail.com - [XCrypto22/Backup-Program: This program is a GUI application for backing up files from a source folder to a destination folder. \(github.com\)](https://github.com/XCrypto22/Backup-Program)