

# Ally Local

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This program is inspired from Ally program developed by **Alicia Hock**. It is to be used by students who are taking **38PROG** module.

This program is to be installed in students' computers.

- It provides basic feature for students to create c files, compile and run them.
- Students will use it to complete exercises in class.
- It is the centralize location for teachers to check students' work.

## 1. How it Works?

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### 1.1 Exercises Types

There are 2 types of exercises, **compulsory exercises** and **additional exercises**.

- **Compulsory Exercises:** List of compulsory exercises which students must complete.
- **Additional Exercises:** List of additional exercises which teachers may ask students to practice.

Upon running the program the first time, a "**exercises**" folder will be created in "**c:\Users<USERNAME>\AppData\Roaming\AllyLocal<StudentHash>**" folder. It typically contains 2 subfolders, "**additional**" and "**compulsory**".

Module leader can use the file "**exercises/compulsory/files.lst**" to specify list of compulsory exercises which students must complete. Based on the "**files.lst**" file, empty files will be created.

### 1.2 Encryption

Upon first launch, student will be asked for his name. All exercise files will be encrypted by hash value of the name.

### 1.3 Change Name

When student changes name, exercise files of previous name will still be in "**c:\Users<USERNAME>\AppData\Roaming\AllyLocal<StudentHash>**" folder.

## 2. Features

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### 2.1 Compulsory Exercise List

- Generate list of Compulsory Exercises from text file

### 2.2 Additional Exercise List

- Allow user to create new file to Additional Exercises list
- Allow user to delete existing file from Additional Exercises list
- Allow user to rename an existing file from Additional Exercises list
- Allow user to load existing files into AllyLocal. User can drag and drop multiple files to add files to Additional Exercises list.

## 2.3 Code Editor

User can select a file from Compulsory Exercises list or Additional Exercises list. File will be open editor for editing.

### Auto Save

When user select another file, modification to previous file will be automatically saved.

## 2.4 Compile and Run

- User can compile and run any file from the file list
- Compile output will be shown at output pane
- New command line prompt will be launched when a file is run

## 2.5 Shortcut Keys

Shortcut keys are added for convenience.

- `CTRL+X`: Compile current file
- `CTRL+R`: Run current file
- `CTRL+N`: Create a new file
- `CTRL+L`: Load an existing file
- `CTRL+S`: Save current file

### Disable Copy and Paste

Copy and Paste shortcut keys are disabled to force students to type their exercise.

- `CTRL+V`: Disabled

## 2.6 Tool Tips

Tool tips are added to main buttons to provide hint to user.

## 2.7 Encrypt and Decrypt Files

All exercise files are saved locally encrypted by lower case of student's name.

If a student changes his name, all exercise files will be wipe clean.

## Possible Problems

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1. Program failed to start. No window form shows.
  - Run solution in Visual Studio reveal following error "Couldn't process file resx due to its being in the Internet or Restricted zone or having the mark of the web on the file".
  - This is because antivirus program in the computer blocked some of the files.
  - Solution:
    - Start PowerShell
    - CD into the AllyLocal folder
    - Run command `Get-ChildItem -Path . -Recurse | Unblock-File`

- Try to run AllyLocal again