

# Image Stacker

For Fire Emblem Heroes  
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## ABSTRACT

This application takes screenshots from Nintendo's mobile game Fire Emblem Heroes, crops them down and stacks them to condense information. The program was coded using the Xamarin SDK and uses the Imgur API to allow users to upload their final image to Imgur. A version of the app has been released on the Android Play Store and has received positive reviews.

## INTRODUCTION

Fire Emblem Heroes is a mobile game produced by Nintendo and one with a rapidly growing player base. This game features a high customization playstyle that encourages experimentation.

Currently, user customizations are shared through online forums with raw screenshots that take time for the uploader to upload and time for the viewer to view. This app is a solution to this problem.

Instead of uploading individual screenshots, this app will instead stack the relevant portions of each screenshot into one single image. This makes for easy viewing and easy sharing.

## DATA AND ANALYSIS

The game has two ways of showing character information, as shown on the left. The condensed version of the information is cropped out and stacked to form the image on the right. To accommodate for different screen size ratios, users are able to visually adjust cropping margins if the default does not work. Users can also select more than just four images.



Imgur is a popular image hosting site for sharing images online. This app uses Imgur's API to allow users to upload the image to their account. The API requires authentication and returns an access token, which is used again in further calls like uploading images.

This project was built using the Xamarin SDK. Xamarin features reusable code bases that can be used to ease development across Android, iOS, and Windows devices.

## CHALLENGES

There are many examples of code for native Android development in Java, but to translate these into C#, which Xamarin uses, has caused no small amount of trouble.

Also there have been a few reports of failures on certain less widely used Android devices such as the Xiaomi Mi 5s. Short of actually purchasing one of these phones to debug the app on, resolving this unknown issue will be difficult as Android emulators do not exist for these.

## CONCLUSION

This app has been released on the Google Play Store and has received positive reviews. One such praise is: "Clean, simple, and easy to use!"

Currently its users have rated this app a 4.73 out of 5.00. It has been installed by nearly 300 users in the past month and a little over 1400 users total.

Future goals are to release a version for iOS users on the Apple App Store or to utilize Google Drive APIs to allow users to save images to their Google Drive account.

## REFERENCES

- <https://play.google.com/store/apps/details?id=com.chkansaku.fehteamcollagegen>
- <https://www.xamarin.com/>
- <https://apidocs.imgur.com/>