

Any Image Map (Android 6.0 or over)

Operation manual
Ver. 1.21 (Sep.25-2021)

Attention: Please do not move while looking at your smartphone as there are various dangers. Be sure to stop and operate this application in a safe place. Please take responsibility for preventing your device from falling.

I have developed this application with Visual studio/Xamarin/C# and checked with Android emulator and Android 9.0 actual unit. I follow rule of Android, and I have corresponded and checked different screen resolution, so I believe it works on any models without a problem, but I can't guarantee. If you encounter this application's trouble, I wish you to inform me it with as much as possible detailed information like equipment specs, etc..

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Necessary thing before starting this application

Get map image file

There are some ways.

1. Get it from the facility homepage and so on on internet, and save it in Android.
2. Receive it from somebody by E-mail attachment and so on, and save it in Android.
3. Take picture of map like information board at the facility entrance and so on.

If the file doesn't exist in Android, it is not available at place of no internet connection. And though this advice has no direct relation to this application, you had better to watch map around image in advance with Maps application that is originally included in Android. You may want to see map outside of image in middle of recreation at no internet connection place. Previous map reading operation is necessary for it.

Image file **jpg**, **png**, **tif** and document file **pdf** are available.

The **pdf** file must be single page or the map must sit at last page. In other case, you need to convert purpose map page to **jpg**, by means file converter. Reading of **pdf** file needs time, so it seems to be more comfortable to prepare converted **jpg** file in advance. I omit detailed conversion explanation because the way is too much. However, when there is quality designation in it, 85% seems to be sufficient value.

Do you have the inputted coordinates?

Excluding case that someone who used the map with this application has given to you, you don't have such one. Skip this page rest sentences.

If there is a sequence of inputted coordinates of the map file, copy it to clipboard before this application starts. Location input operation will be omitted. I omit detailed explanation of copy to clipboard because it is Android standard operation.

Attention: When you give inputted coordinates of converted **jpg** file map to someone, you need to give the **jpg** file at same time. **jpg** image size is various by conversion means, and inputted coordinates don't agree if the image size is different.

Beginning of application

Select file


File chooser is displayed. Choose map file you want to see. This chooser is common in Android, so I omit detailed explanation.

In almost case, you get the map recently and it should appear around top of screen. If time you get the map is past, you face difficulty to search it. You better to preserve map image in other place, and store in Android before using.

After selection of image file, it is downsized and its whole image is shown.

For next step, it is needed that Android gets current position Latitude / Longitude. Until getting, error message is displayed and you must wait until it disappears. This location acquisition interval depends on model and place (kind and state of wave at location). It is not always same. It sometimes becomes several minutes or over. In case error is kept even if waited a sufficient time, please see "Troubleshooting"(P.10).

After getting current location information, normally location input mode comes. Input demand message is displayed.(P.6)

[

Close this application and restart

After you see the map, if the map location is far apart, close this application once. Start again this application when you come to place of the map. It maintains same map display situation. Until getting current location information, error message same as mentioned above is displayed. If this application has remained in background, there are some cases that location acquisition fails and error message remains. In the case, close this application and start again.

Image operations

Enlarge and shrink

[+] : Upsize image. Regarding size around 'estimated print size * 2' as largest, it doesn't enlarge further.

[-] : Downsize image. Regarding size whole image in screen as smallest, it doesn't shrink further.

2 fingers action wide or narrow on image : Depending on the ratio, upsize or downsize image size.

Vertical:Horizontal ratio change of image is impossible.

Rotation of image is impossible.

Touch and release on image : Enlarge to maximum size.

By touch again, size returns as previous.

Display range is adjusted touched point to center of screen.

When touched point is nearly edge of image, it is adjusted to fit screen edge and image edge.

Move display range on image

Cursor key : Display range is moved depending on cursor operation. When it reaches image edge, it doesn't go further.



Move a finger on image : Move display range depending on finger action.


Location operations

Location input

If you have copied inputted coordinates, skip this chapter and advance to "**Location display**".

When location input demand message is displayed, touch and release present location on map. The point and around is enlarged and cursor "+" is displayed. Touch around cursor again and move finger on screen. Cursor moves to same direction. Release finger when cursor comes at inputting location. The location is inputted. If present location is hidden by message, touch it. Message shifts.

Second location input demand message is displayed. If you input second location within less than 1 minute, first one is overwritten by judging it mistake correction. Second input is necessary at location some distance away. After at least 10 minutes or over, input second location. Even if distance is sufficiently apart, calculation failure possibility remains. Input third location if it is the case.

In my investigation, almost map images are made on base of topographic map. It is both horizontal:vertical ratio=1:1 and oriented to just direction either of north, south, east, or west. Or either of these. Choose this map characteristic in [] key menu.(P.9) This application switches calculation methods by this characteristic setting to make up accuracy.

If this setting is neither, 2 points are not sufficient and third point input is necessary. And accuracy goes down largely.

Location display

If you are not in the map area, out of range message is displayed. Restart this application after you come in there.

When you stay in the map area, "○" blinks on your present location in map image.

Following your movement, blinking location and map display range is refreshed. Because GPS consumes electric power, refresh interval is set apart 10 seconds. This interval is possible to change.(P.9) Regardless of current location, you can move map and see different place. But display range returns at location refresh timing.

Arrow shows direction of this map.

When this arrow directs to up side, map direction meets actual direction.


By touch to arrow, tip becomes triangle and it flips horizontal. In this mode, when you direct this arrow to up side, map direction meets actual direction.

In fact, it shows wrong direction in frequent ratio. And it doesn't smoothly follow your spinning around. It seems better to ignore except for case that it is keeping on same direction at time that you place Android your front and keep on straight.




Location correction

In fact, strict location appointment by such a about input is impossible. It has destiny to include an error. The farther apart from inputted points, the more display location slips out from actual location.

[] is key to add input locations. When error goes beyond your tolerance, input present right location. Using 3 points, it calculates more accuracy. When inputted points are more than 3, 3 points considered to improve accuracy are selected and used in calculation.


If this key is touched within 1 minute from location input, it is previous input correction.

[] is key to select which points are used in calculation. By omitting poor accuracy input point, calculation accuracy goes up. If there are 3 input points, 2 of these are switched. If there are more, 3 of these are switched.

If it is touched while location input mode, the mode is canceled.

Past locations record

Passing locations are memorized every 10 minutes or over while you watch map. This interval is possible to change.(P.9) This application can't record automatic while you don't watch map. You must watch map at all points you want to record.


[] is key to display past inputted and passed locations. This key switches 3 modes. Present location display mode(or location input mode), Past location display mode, and Map only mode.

Last inputted location is displayed by “★” mark. Other inputted locations are displayed by “■” mark. And automatic record and excluded inputs are displayed by “▲” mark. By touch to “■▲★” symbol, time at the location is displayed. When symbols overlap in shrunken display, less priority one is not displayed.

Maximum location amount is 20. When it goes to exceed, past record is automatically thinned out.

Other operations

Switch to another map



[] is key to choose map. Until 2 maps, these records are held. Moreover, older record vanishes by choosing different map. Please notice to avoid choice mistake. If there is a sequence of inputted coordinates of the map, copy it to clipboard before this operation. These coordinates are inputted at same time of map choice.

Save memorized locations

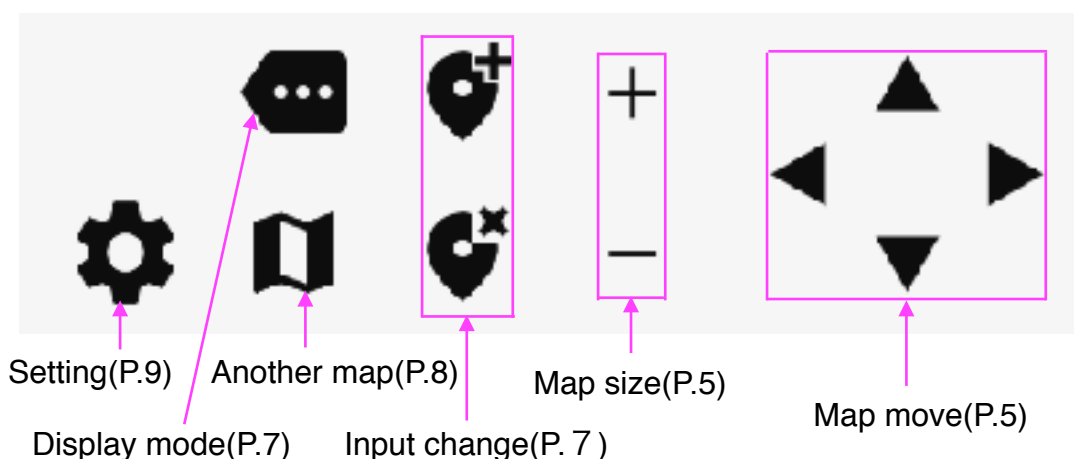
After you avail map, next day or later, file chooser automatically comes in application opening. Do save operation in the day if you want to hold the record. Record contents are erased at time application closing. Do save operation while this application stays alive.

At situation that this application displays present location, start another application (like E-mail) and do paste operation from clipboard. Number sequence of input location coordinates is pasted. Save it and copy it in next time. You can omit location input operation. And you can give it to other persons.

It includes no information with copyright, so you can post it SNS. Map image file is someone's work and has someone's right. Please don't post it on SNS. Stay in range of personal E-mail or link indication only. It includes no discriminant information about which map image is. It works even if it is copied to different map image. Please manage it appropriately.

Paste text can be replaced to pair of location(longitude, latitude) and time experience records. Touching [] key in menu(P.9) coming by [] key switches text. Notice that input location coordinates vanish instead of these.

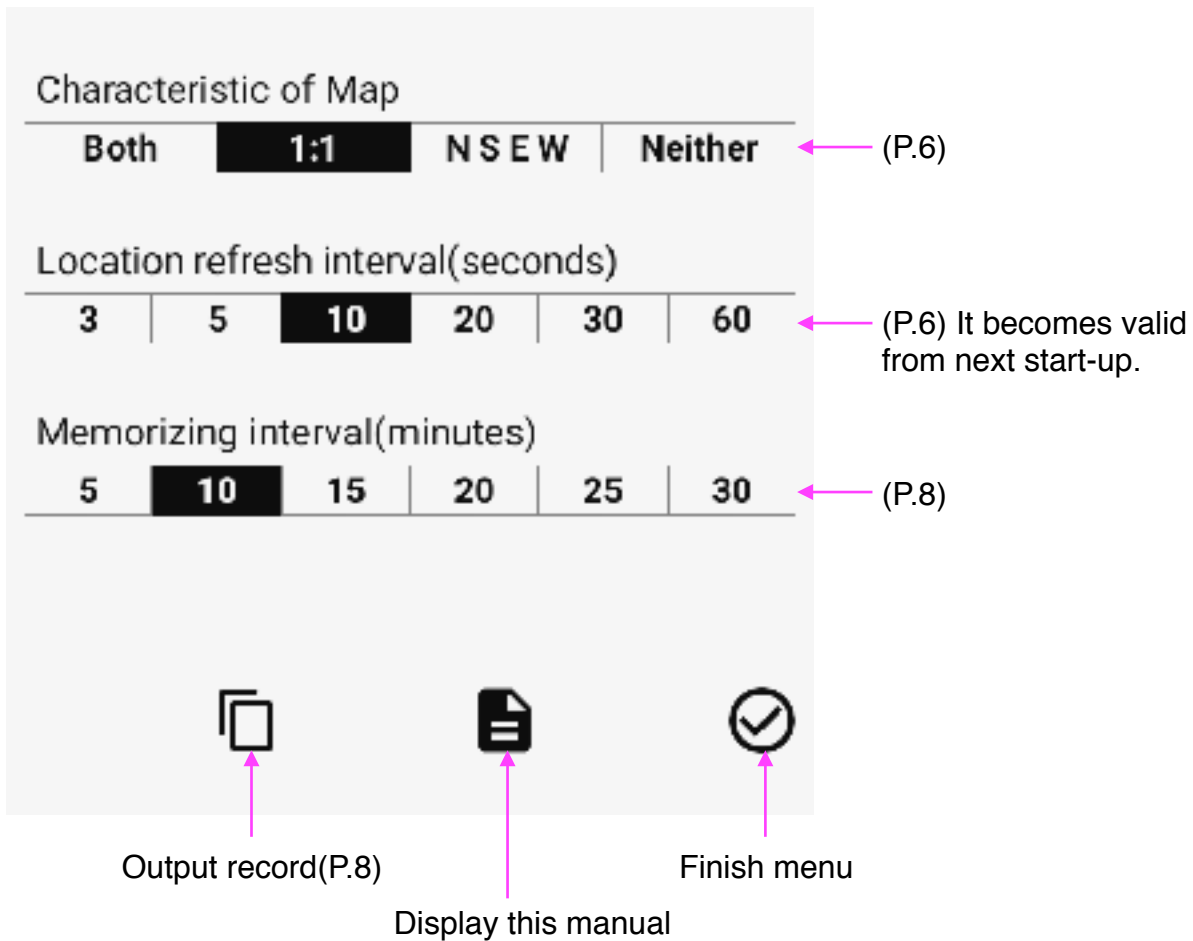
Keyboard



Following unit rotation, keyboard location and key arrangement changes.

Setting menu

[] is key for below setting screen.



The screenshot shows the settings menu with three sections: "Characteristic of Map", "Location refresh interval(seconds)", and "Memorizing interval(minutes)". Each section has a row of options with one option highlighted in black. Pink arrows point from text annotations to these highlighted options and to icons at the bottom of the screen.

Characteristic of Map					
Both	1:1	N S E W	Neither	(P.6)	

Location refresh interval(seconds)					
3	5	10	20	30	60

(P.6) It becomes valid from next start-up.

Memorizing interval(minutes)					
5	10	15	20	25	30

(P.8)

Output record(P.8) Display this manual Finish menu

“Neither” setting in “Characteristic of Map” assumes that map form is parallelogram. This application calculates in other square case tentatively. But map and calculation seldom agree. It is surely wrong location in almost cases.

I recommend not to use “Location refresh interval” less than 10 seconds setting. These settings make battery depletion of Android.

Troubleshooting

- **Location signal error is displayed and the state continues for a long time.**

There are three cases. One is that present environment is impossible to get location. Other is that location signal takes time and has not decided yet. Rest is that setting is impossible to detect location signal.

If position signal is blocked due to place such as tunnel, forest, valley, building area, or due to weather such as cloudy or rain, you need to move to reachable place or wait until clear weather. If error occurs in open space and under fine weather and still several minutes after, please check following.

Finish this application once. Start Maps application that is originally included in Android and do operation to show present location. After a while, your present location should be displayed in Maps. (In my experience, it needs a few minutes or more in some conditions. When signal used is changed from previous, even if signal wave situation is OK, time may be necessary.)

If Maps can't show present location, Android setting seems to be wrong. Please confirm below setting. Below expression may differ by model and version. Replace with your model's same kind contents. Different application can be wrong inversely by this setting change. Record original setting and make it possible to return original situation. And even you once set, by your usages after, Android may change these automatically.

1. Set [Battery]-[Power saving optimization]-[Choose battery saver] to [Smart Saving mode].
If the setting is besides it, GPS can't work by current consumption limitation. It is necessary to release limitation. Sufficient battery charge is necessary, too.
2. [Network & Internet]-[WiFi] Whether ON or OFF is?
Indoor operation, when it communicates on wifi, it gets location signal from wifi. So set ON.
Outdoor operation, when it doesn't use wifi, wifi detection must be forbidden. So set OFF.
3. Set [Security & location]-[Location]-[Use location] to ON.
In [Security & location]-[Location]-[App level permission] menu, set all [Maps], [Google Play Service] & [Any Image Map] ON.
Without permission of location, it can't display present location.

After setting change, start Maps and wait a while. Present location display function should be available. Even if location isn't shown though items until 3 are confirmed, try below items.

4. Set [Security & location]-[Location]-[Advanced]-[Google Location Accuracy]-[Improve Location Accuracy] to OFF.
It gets location signal only from GPS.
5. Close all applications and power off unit and power on. Start Maps again.
When application remains in background, setting change doesn't translate or cause of error is held in application in some cases.
Be careful to close application in any stages.

In my experience, in spite of all setting was right, Maps told that location usage was not allowed. Even if in the situation, it became right by this operation.

After you can watch present location in Maps, start this application and wait a while. Error is sure to be erased. If you have done all above but still location doesn't work, that situation exceeds my knowledge. The model may be no GPS.

- **"No GPS" error is displayed. And the state continues for a long time.**

This application uses "Google Play Service". Normally it should be already installed. But if you change OS version by yourself, you need to install this program. Or the model may be surely have no GPS.

- **You surely inputted locations, but still input demand message comes.**

At first, please confirm setting of map characteristic. Calculation comes off largely if setting mismatches.

When 2 points are too close to make sufficient accuracy, this application replaces previous location with new one in some cases. After walking 10 minutes or over, input 2nd point. And there are cases, these 2 points are insufficient for calculation mathematically. Input 3rd point. 3 points still remain possibility of insufficient. (But it is rare case.) In the case, please input 4th location.

- **Accuracy is bad**

At first, please confirm setting of map characteristic. Calculation comes off largely if setting mismatches.

Please judge carefully which is location gap reason. "Temporary thing by circumstance", "Calculation accuracy error" or "You are really going off route".

Positioning system, not only this application, has a fate that position information itself can shift depending on environment. For example, under highway, narrow street between buildings, near tall object like electric pole, tree. Positioning might be done by reflected signal.

Originally because location input is rough, this application doesn't intend to point accurate location. Displayed present location is approximate including error and you need to appoint it again if it goes apart from fact location. It is this application's premise. By that, this application doesn't aim to serious purpose. For example hard mountain climbing, a little mistake of path has possibility of distress. Inversely for playability up, this application shows calculation result position even if input location is judged mistake. I think calculation algorithm still has room for improvement. It needs various tests and problem detection, like all improvement I have done until now. I will continue to modify if this application gets good popularity.

- **Map you want to use is impossible to use**

I named it "Any image" but this application doesn't treat file that map maker doesn't suppose its users to print out. It doesn't treat and will not treat for future, file that are only oriented to watch on browser. (Browser map that facility locations are posted on it. Or "html" and same kind file types for browser.)

I recognize that present version still doesn't correspond many cases. I intend to add below items when motivation takes me.

- When large map is divided into plural images. At next map reading, all records of present map vanishes. Come and go between maps is impossible.

- Modified to hold records until 2 maps.

- When a map is divided into plural parts and packed in one image. Same as above, new input erases previous records.
 - I plan to add jump function in map image.
- Large map spread into 2 pages in **pdf** file.

- **Map is automatically rotated by Android tilt**

In Android setting, set “Display”-“Auto-rotate screen” to OFF. You can be fixed map direction.

- **There is no version except version for Android**

In fact, I developed Windows/iPhone version at same time, but I don't intend to release. For Windows. Handy models aren't selling any longer and advertisement in application is ended. Now, release is meaningless.

For iPhone. Apple doesn't correspond release without replacement of my Mac to new model. I obey Apple's principle to cut off petty developer.

Modification history

Modifications ➔ Ver1.03

- Various bug fixes.
- Android location acquisition interval seems to be set only when starting. I corresponded it.

Modifications ➔ Ver1.04

- Various bug fixes.
- Add input location correction function within 1 minute.

Modifications ➔ Ver1.05

- Various bug fixes.
- Location calculation accuracy up by using statistical method.

Modifications ➔ Ver1.21

- pdf file read.
- Alteration for detailed operability improvement.
- Various bug fixes.