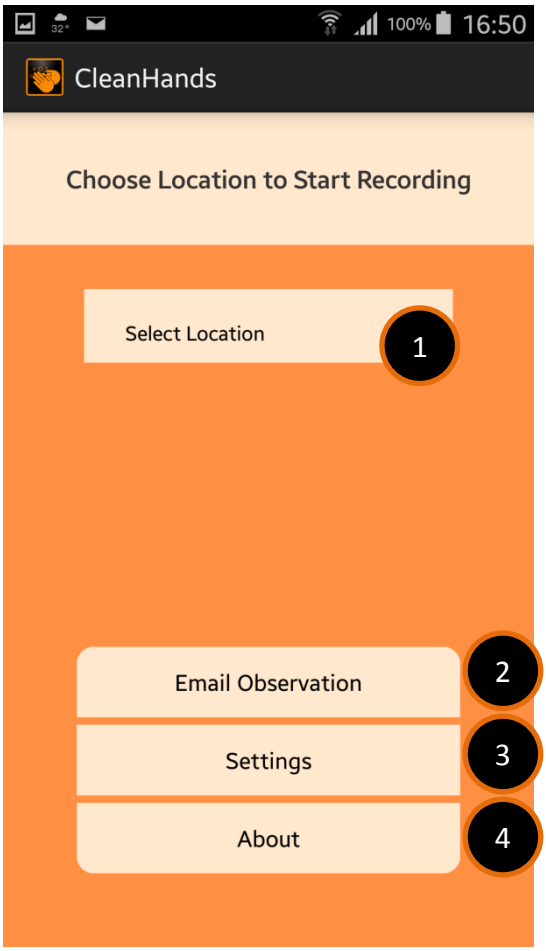
CleanHands

an interactive mobile application for use on Android devices which could be used to record hand hygiene observations at the point of care on mobile computing devices or smartphones, and transmit this information for data analysis

A joint collaboration between
Infection Control, Changi General Hospital and Singapore University of Technology and Design

RECORDING OBSERVATIONS



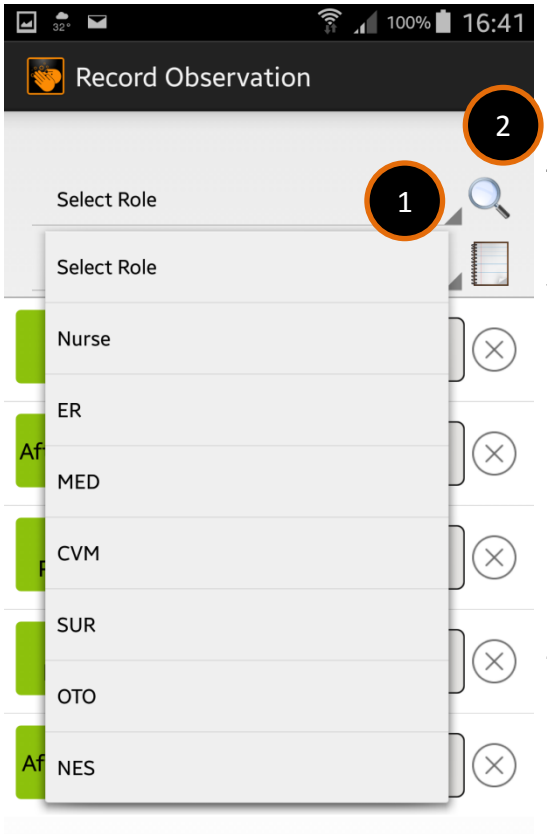
1
Select location to start recording.
Locations can be configured in the **Settings** menu.

2
Use this to checked your emailed observations, or to email a current set of emailed observations

3
To amend various settings

4
Self explanatory!

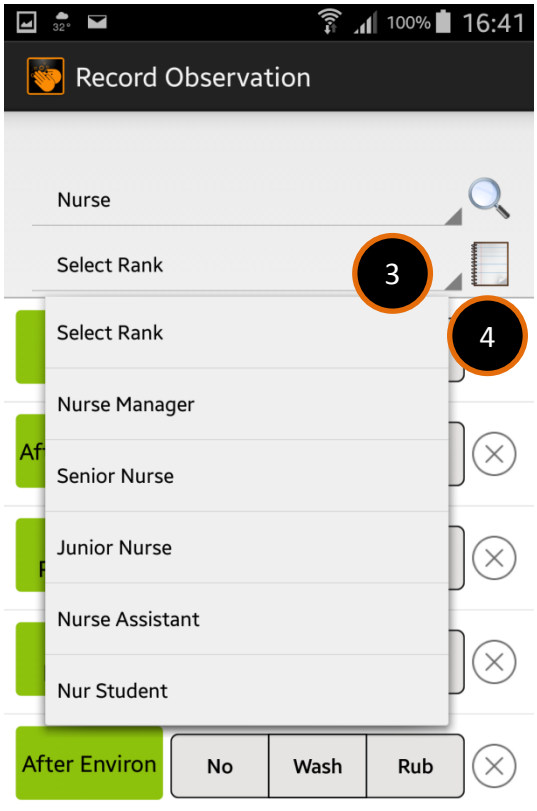
RECORDING OBSERVATIONS



1
Select job role of the person being observed. This is a mandatory field.
The default job role options listed here are dependent on the **Location**.

You can change or define the default job roles for each Location by going to **Settings>Location>{Edit}**

2
If the default job role options listed here are not suitable, click on the magnifying glass icon to search for the full list of job role options available in the dictionary.

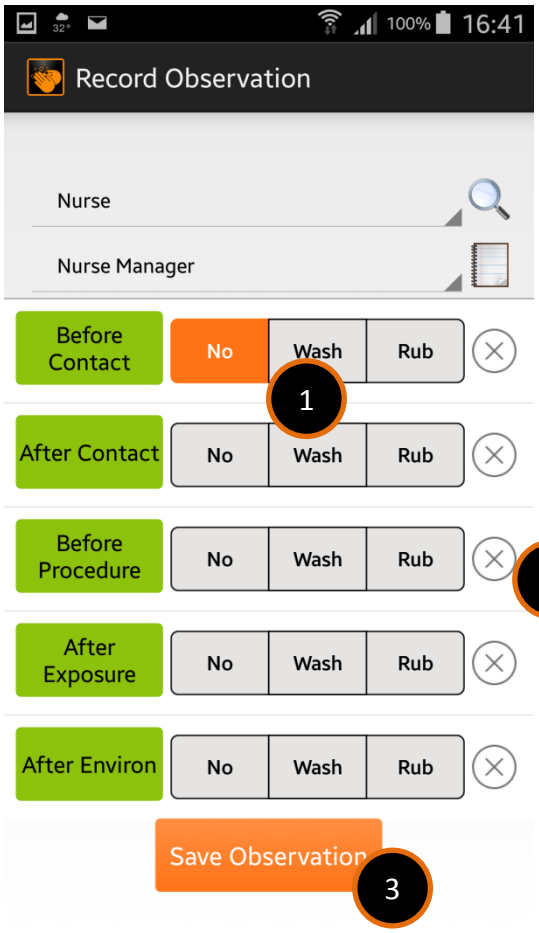


3
Select job rank of the person being observed. This is a mandatory field.
The default job ranks options listed here are dependent on the **Job Role**.

You can change or define the default job roles for each Location by going to **Settings>Job Rank>{Edit}**

4
Click on the notepad icon to enter free text for this observation.

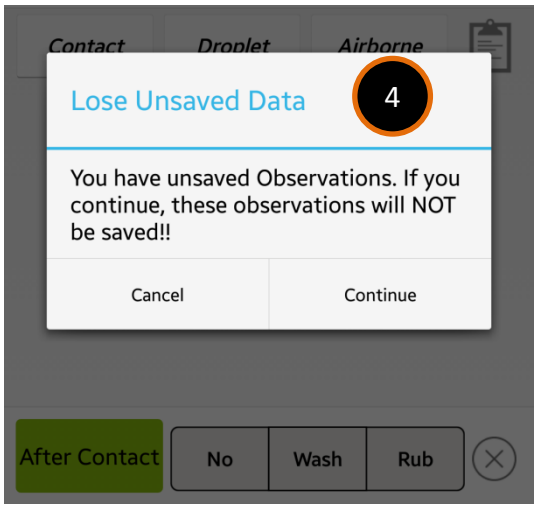
RECORDING OBSERVATIONS



1
Select the observation being recorded, according to the "5 moments of hand hygiene".
You may record observations for more than one moment, for the same person, before saving the observation.
Record if No hand hygiene was performed (**No**), or if handwashing was performed (**Wash**), or if an alcohol hand-hygiene product was applied (**Rub**).
The selected observation is highlighted in orange.

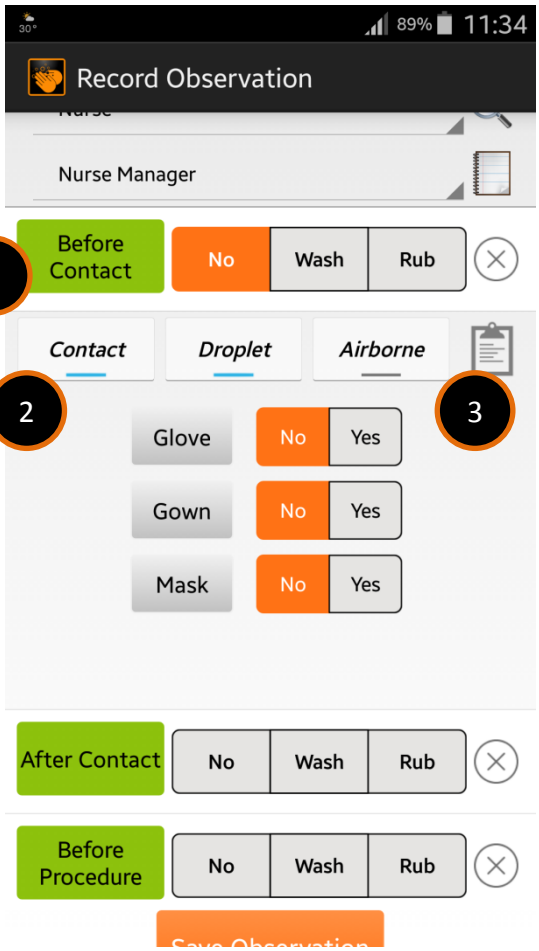
2
To clear a recorded observation, tap on the "X" icon.

3
To save the observation tap on **Save Observation**.



4
If you tap the "Back" button on your phone **before** saving the observation, this warning dialogue will appear. If you tap "**Continue**", your observation will NOT be saved.

RECORDING OBSERVATIONS



1
Tap on any green "**moment button**" (e.g. Before Contact in this example) to expand the recording for the use of personal protective equipment (PPE) for patients under different types of isolation precaution.

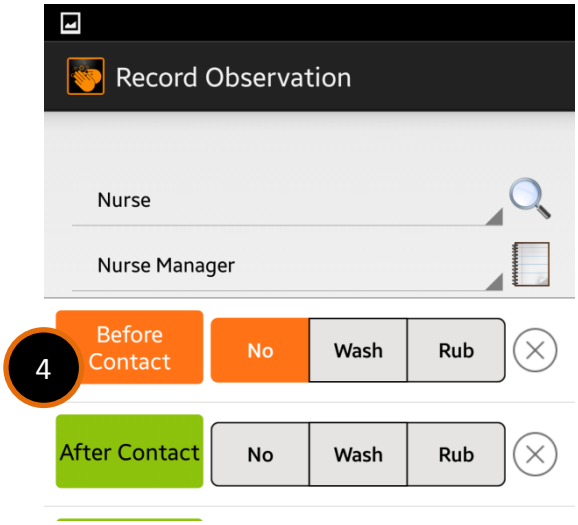
2
The three isolation precautions listed, together with the corresponding PPE to be shown, are

Contact	Glove, Gown
Droplet	Mask
Airborne	N95

Selecting the appropriate isolation precaution will insert the PPE as listed above.

Tapping on the "X" button will also clear all PPE recorded data.

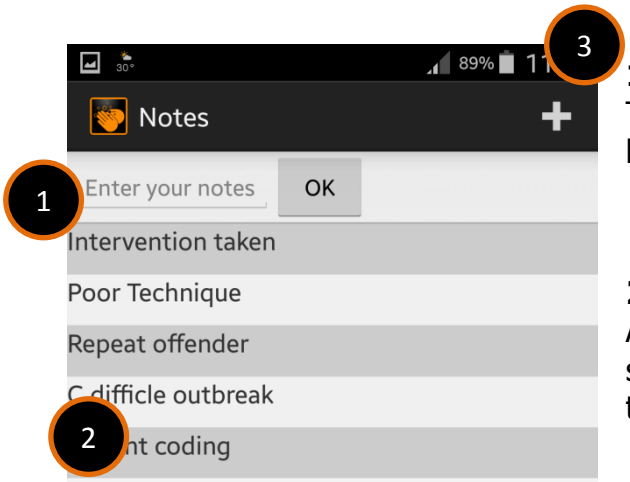
3
Tapping the notepad icon allows free text notes to be appended for this recorded observation.



4
Tapping on the green "**moment button**" again (e.g. Before Contact in this example) will close the recording of PPE for this observed moment.

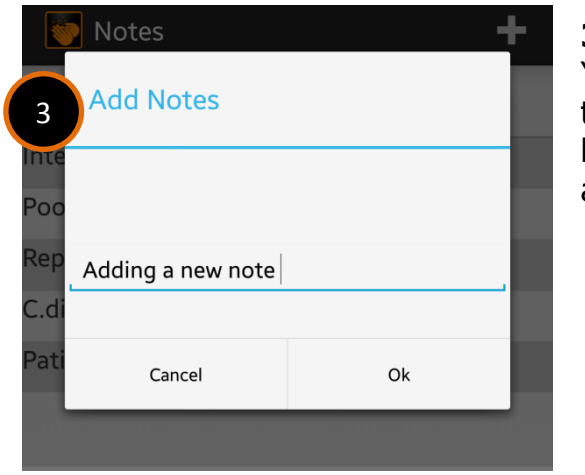
The green "**moment button**" will change colour to **orange** to indicate that there is entered PPE data recorded for this moment of observation.

RECORDING OBSERVATIONS: NOTES

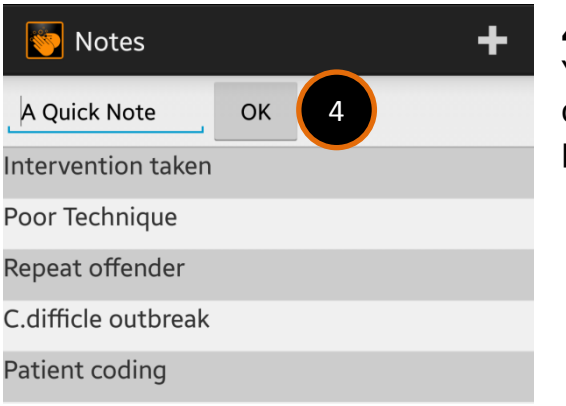


1
Tapping the notepad icon allows free text notes to be appended for this recorded observation.

2
A list of pre-defined note templates is available for selection. You may select one of the options by tapping on the relevant text.

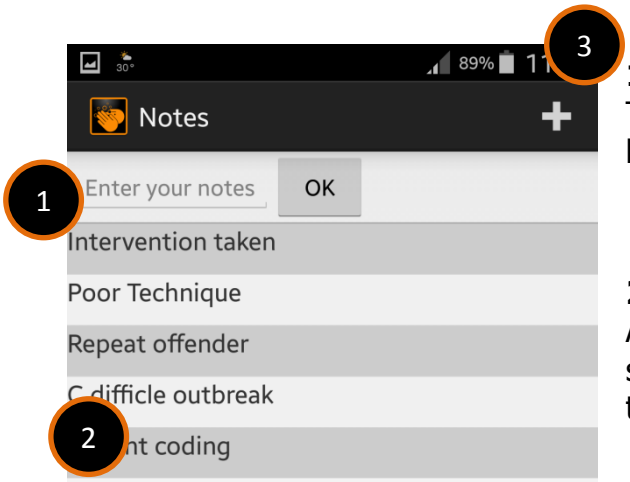


3
You may add to the list of pre-defined note templates tapping on the "+" sign. The text entered here will be stored in the app and will re-appear again when you open the Notes page in future.



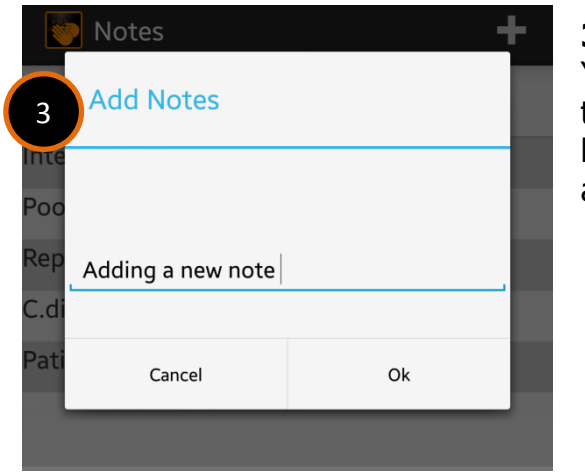
4
You may also enter free text specifically for this observation, without adding the text to the list of pre-defined templates.

RECORDING OBSERVATIONS: NOTES

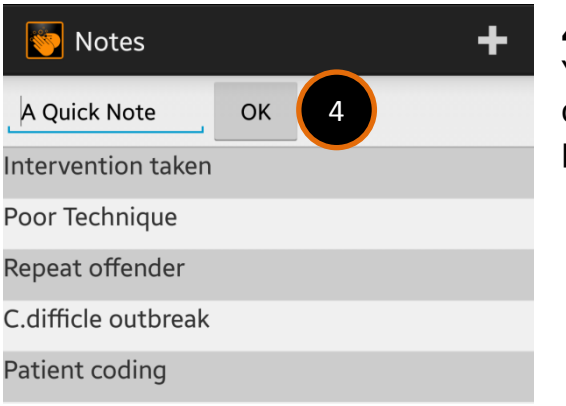


1
Tapping the notepad icon allows free text notes to be appended for this recorded observation.

2
A list of pre-defined note templates is available for selection. You may select one of the options by tapping on the relevant text.

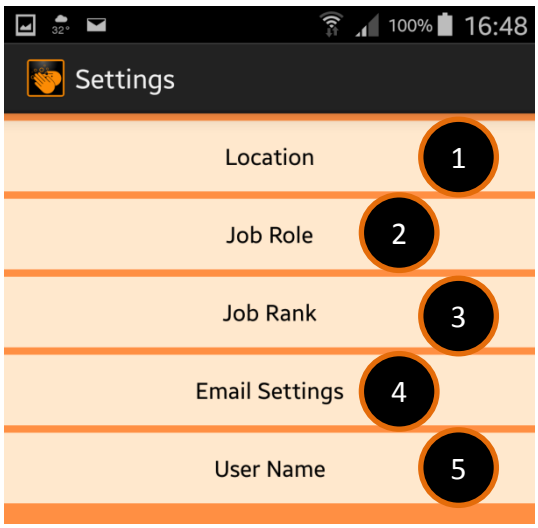


3
You may add to the list of pre-defined note templates tapping on the "+" sign. The text entered here will be stored in the app and will re-appear again when you open the Notes page in future.



4
You may also enter free text specifically for this observation, without adding the text to the list of pre-defined templates.

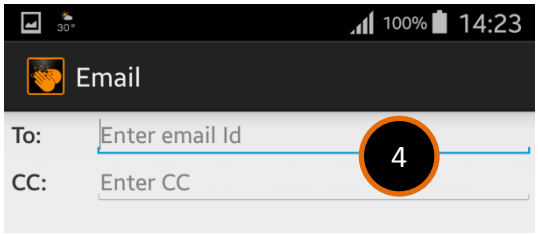
SETTINGS



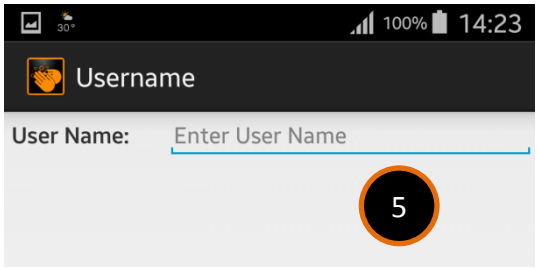
1
Allows addition and modification of Location.

2
Allows addition and modification of Job Roles.

3
Allows addition and modification of Job Rank, and association of Job Ranks according to Job Role.

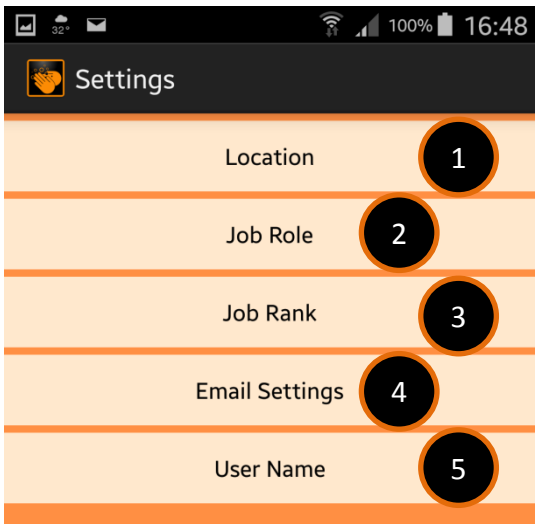


4
Allows user to enter email addresses. These are the email addresses to which observations will be sent via email, when tapping on "**Email Observations**".



5
Allows the user name to be entered. The username is populated in the .csv file which is used to capture hand hygiene observation data.
The username allows the captured data to be linked to the defined observer using the CleanHands app on this particular device.

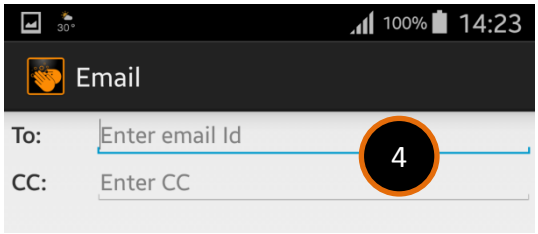
SETTINGS



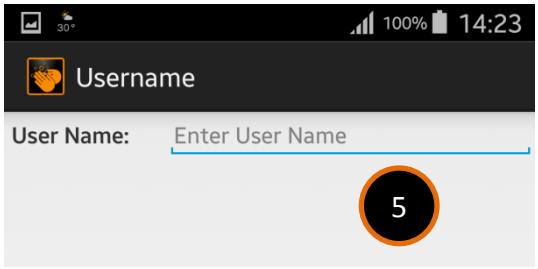
1
Allows addition and modification of Location, and to define the Job Roles attached to any particular Location.

2
Allows addition and modification of Job Roles.

3
Allows addition and modification of Job Rank, and association of Job Ranks according to Job Role.

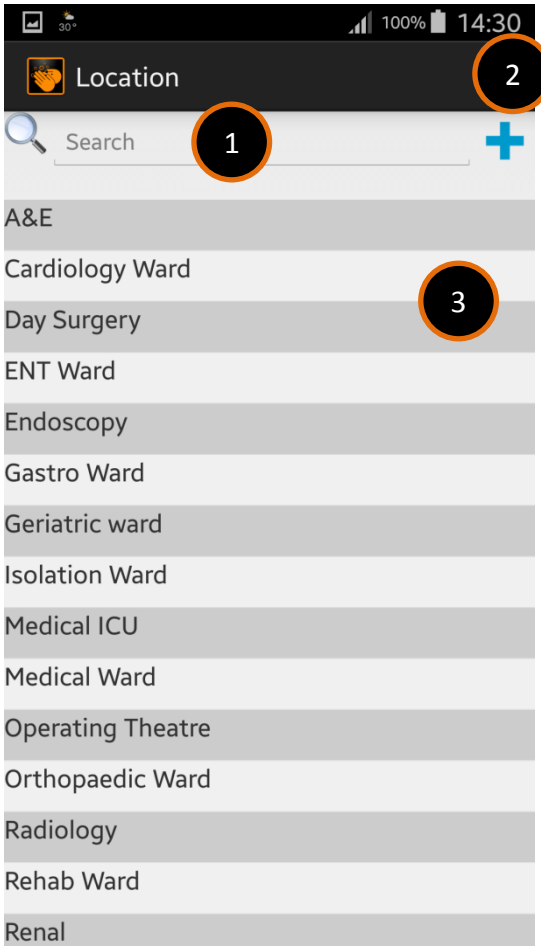


4
Allows user to enter email addresses. These are the email addresses to which observations will be sent via email, when tapping on "**Email Observations**".



5
Allows the user name to be entered. The username is populated in the .csv file which is used to capture hand hygiene observation data.
The username allows the captured data to be linked to the defined observer using the CleanHands app on this particular device.

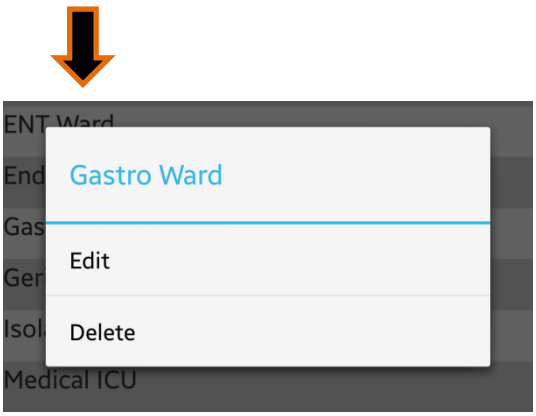
SETTINGS > LOCATION



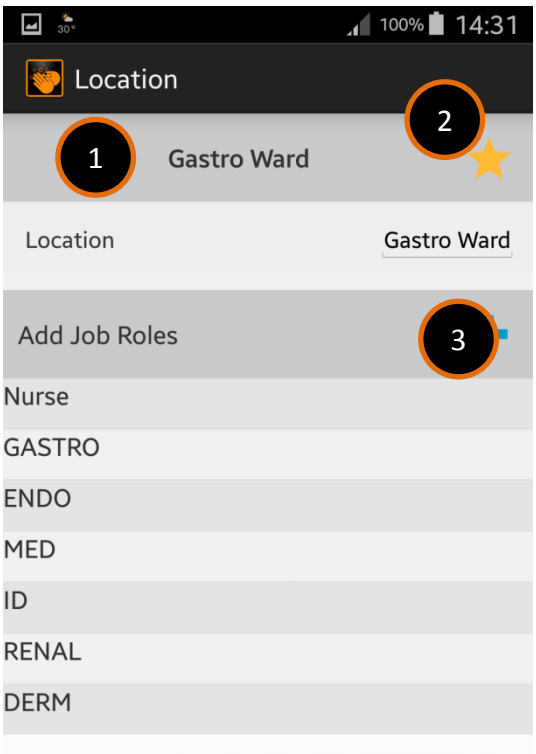
1
Type text to search for a Location.

2
Allows addition of new Locations.

3
List of Locations.
"Tap and Hold" on a Location to Edit or Delete.



SETTINGS > LOCATION > EDIT



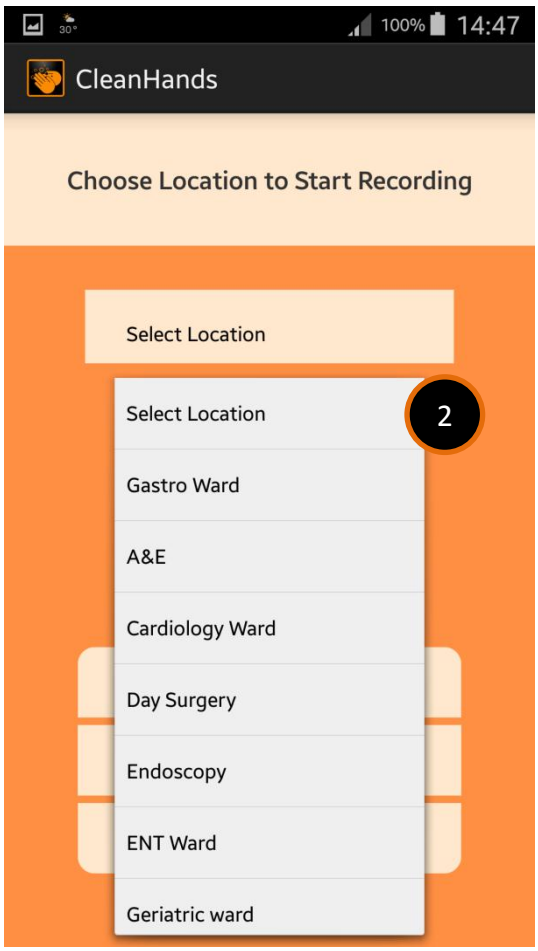
1
Name of Location that you are editing.

2
Tap this star to define this Location as a favourite. Favourite locations are displayed first in the "Select Locations" field on the start page.

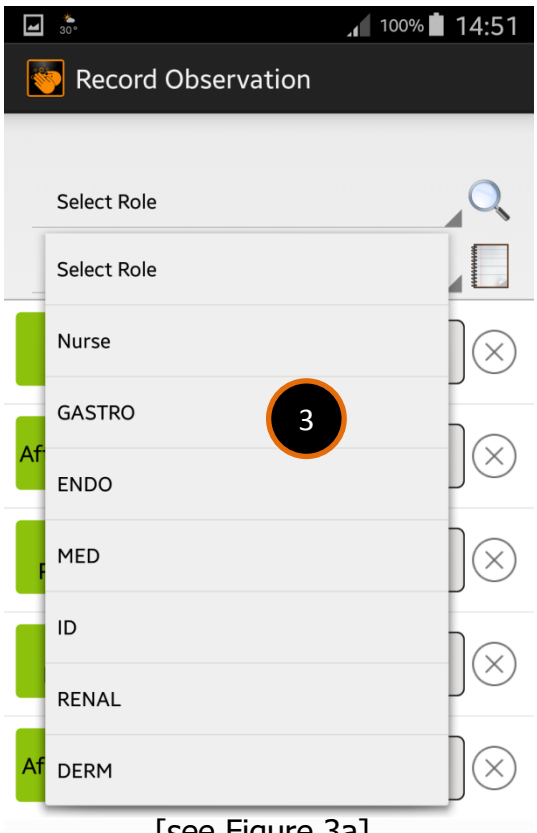
The order of display is:
Favourite locations (alphabetical order)
All other locations (alphabetical order)
[See Figure 2a, below].

A favourite location is indicated by a yellow-orange star.

3
List of Job Roles linked to this location.
The linked Job Roles will be displayed when selecting this location on the start page.
[see Figure 3a, below].

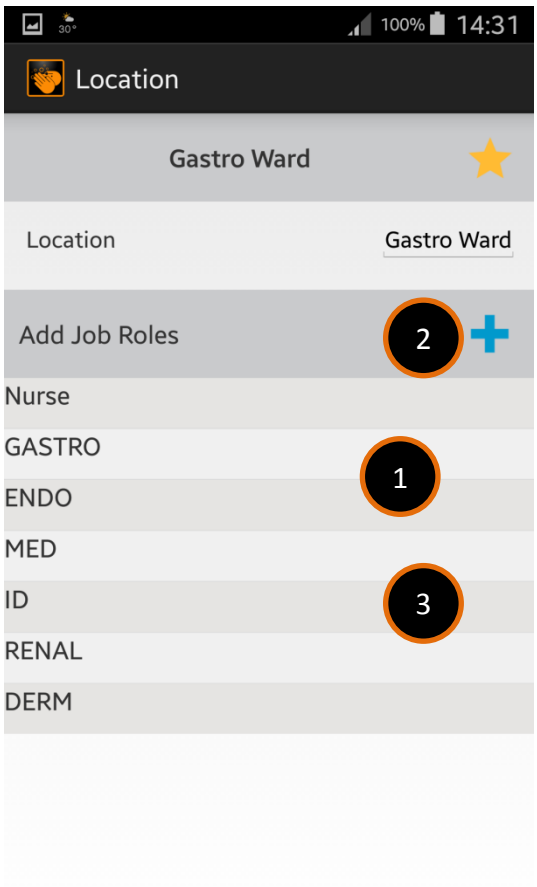


[see Figure 2a]



[see Figure 3a]

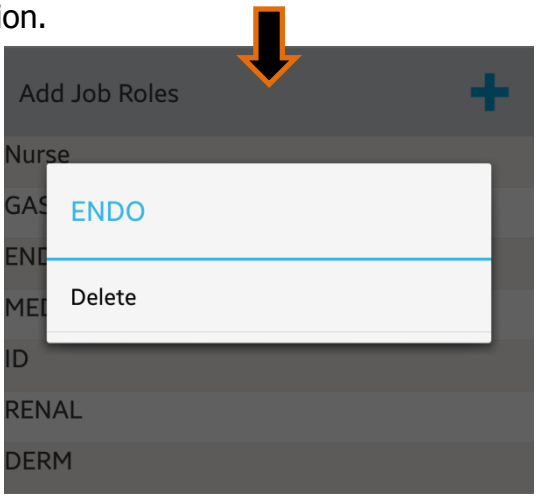
SETTINGS > LOCATION > EDIT > ADD JOB ROLE

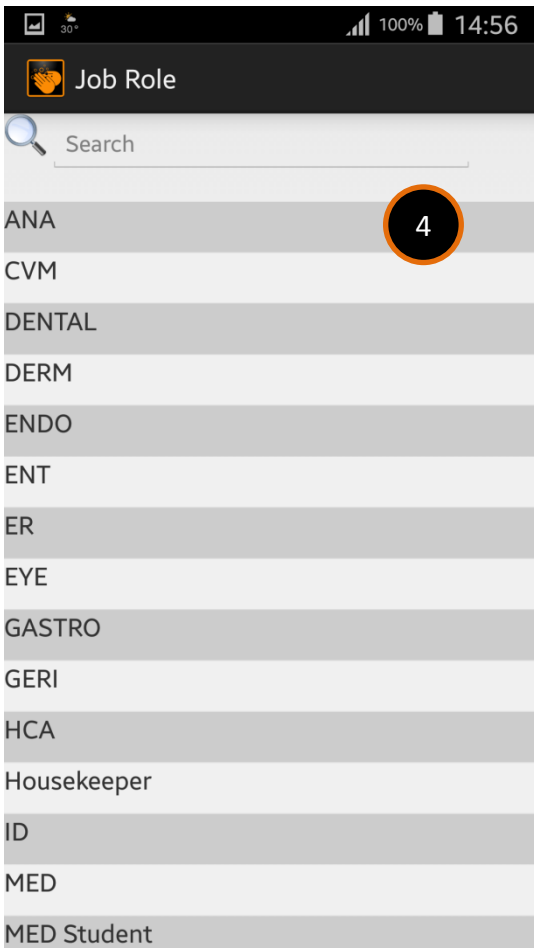


1
List of Job Roles linked to this location.
The linked Job Roles will be displayed when selecting this location on the start page.
[see Figure 3a, below].

2
Tap the "+" sign to add a Job Role to this Location.

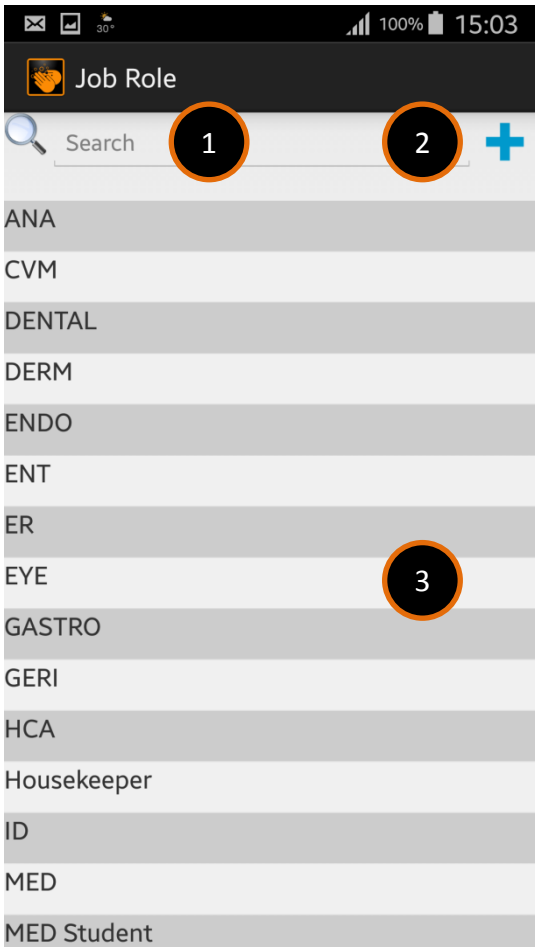
3
List of Locations.
"Tap and Hold" on a Job Role to remove it from this Location.





4
Select or search for a Job Role to add to this Location.

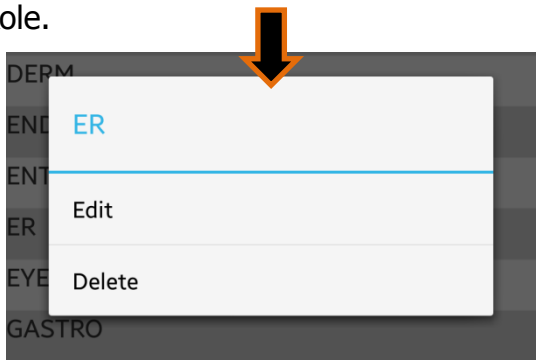
SETTINGS > JOB ROLE

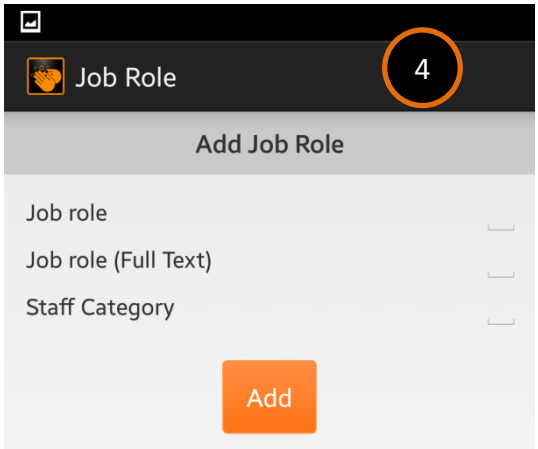


1
Type text to search the list of Job Roles.

2
Tap the "+" sign to define a new Job Role.

3
List of Job Roles.
"Tap and Hold" on a Job Role to edit or delete the Job Role.





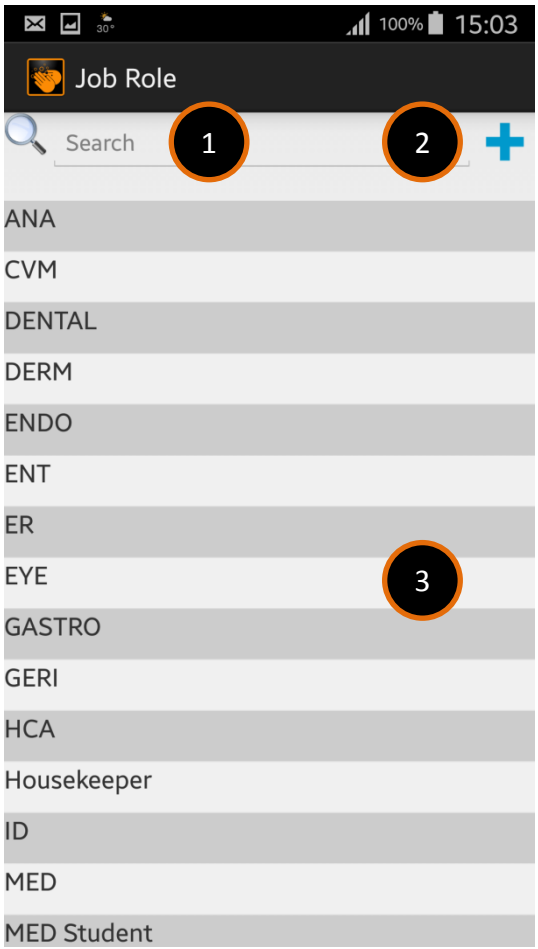
4
Fill the following fields for each new Job Role.

The following fields are not displayed in the mobile app, but will be populated in the recording .csv data file to assist in data analysis.

Job role (Full Text)
Allows longer text description to be used.

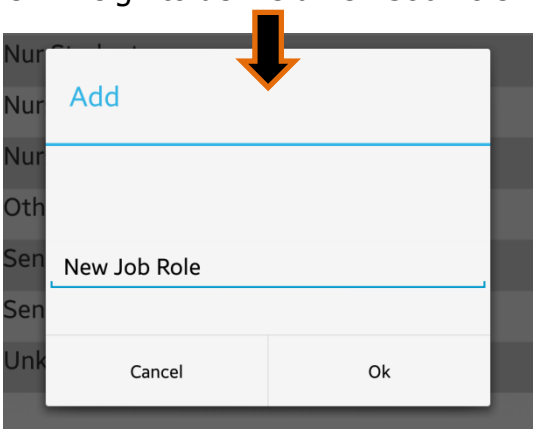
Staff Category
Allows staff category for this job role to be defined. Used for data analysis of hand hygiene by staff category.

SETTINGS > JOB ROLE

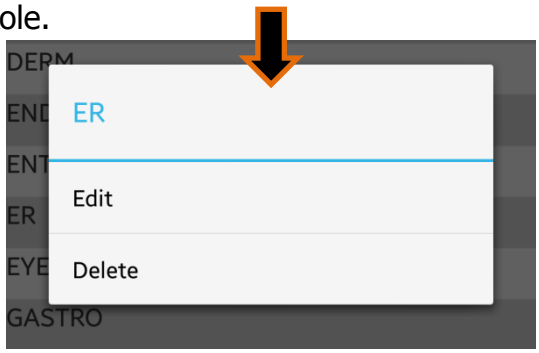


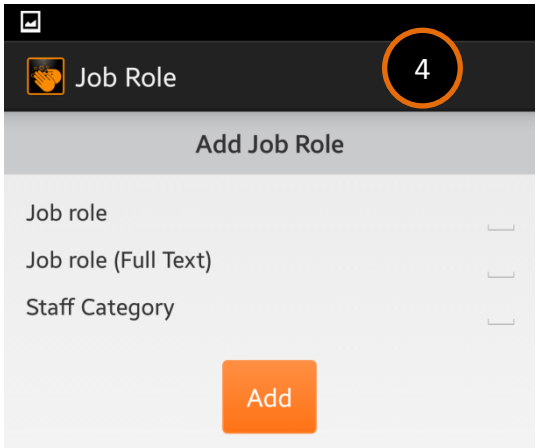
1
Type text to search the list of Job Roles.

2
Tap the "+" sign to define a new Job Role.



3
List of Job Roles.
"Tap and Hold" on a Job Role to edit or delete the Job Role.





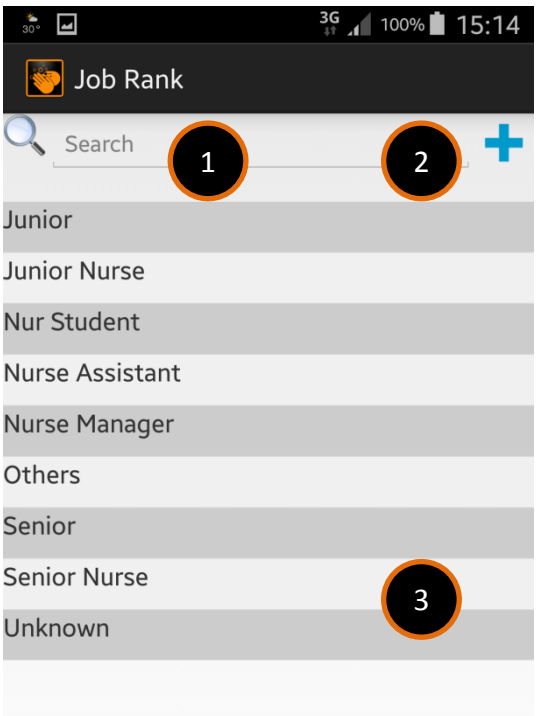
4
Fill the following fields for each new Job Role.

The following fields are not displayed in the mobile app, but will be populated in the recording .csv data file to assist in data analysis.

Job role (Full Text)
Allows longer text description to be used.

Staff Category
Allows staff category for this job role to be defined. Used for data analysis of hand hygiene by staff category.

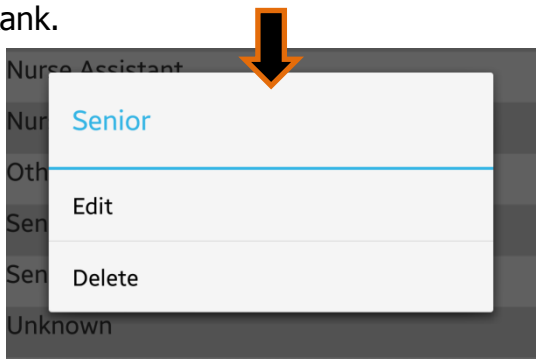
SETTINGS > JOB RANK

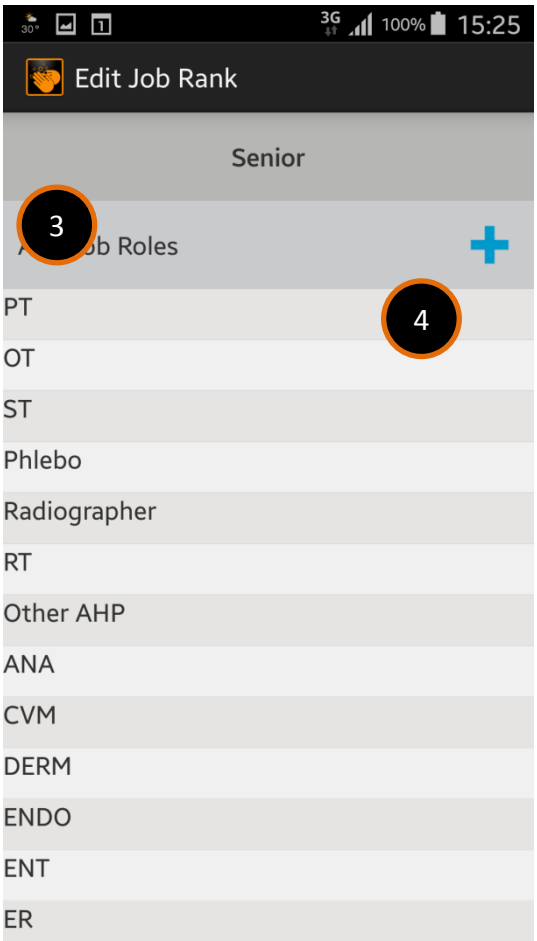


1
Type text to search the list of Job Ranks.

2
Tap the "+" sign to define a new Job Rank.

3
List of Job Ranks.
"Tap and Hold" on a Job Rank to edit or delete the Job Rank.





4
Editing the Job Rank

This allows you to define the Job Roles that will display this Job Rank in the Record Observation window.

Tapping on the "+" will Add a Job Role to this Job Rank.
In the example to the left, the Job Rank of **Senior** will be displayed for Job Roles listed on the screen (i.e. PT,OT,ST, etc.)

ABOUT THE APP

CleanHands
This app was developed collaboratively by Changi General Hospital and the Singapore University of Technology and Design. The app was developed to provide electronic recording of hand-hygiene monitoring for users of Android.

We acknowledge a debt of gratitude to the original iScrub app, which is available on iOS here.

Singapore University of Technology and Design
Sanjana Kadaba Viswanath
Yuen Chau
Changi General Hospital
Li Jie
Meng Qiu Sha
Tan Thean Yen
Acknowledgements
Hand hygiene icon downloaded from
https://thenounproject.com/ Megan Strickland

All rights reserved ©

The Small Print (literally)

License and Terms of Use

You are attempting to (a) download and or install (or have already done so) a software application (the "App") provided by Changi General Hospital Pte Ltd ("CGH") on either your personal mobile device or any other computing device owned or controlled by you for your own personal use, subject to compliance with these Terms.

By downloading, installing or using the App, you agree that you have read and understood the following terms of use (the "Terms") and agree to be bound by them. IF YOU DO NOT AGREE TO BE BOUND BY THESE TERMS, PLEASE REFRAIN FROM ANY FURTHER USE OF OR ACCESS TO THE APP, AND DELETE ANY COPIES OF THE APP IN YOUR CONTROL. When using or accessing the App (including future modifications), you agree that you must comply with any guidelines, rules, terms and conditions applicable to such use according to these Terms. CGH reserves the right to modify and update the Terms at any time. Your use of or access to the App after such modifications will signify your acceptance of the modifications and your agreement to be bound by them.

Disclaimer
You acknowledge and agree the App and any information contained in or provided through the App are provided "AS IS" and "AS AVAILABLE" with no warranties whatsoever. Your use of the App is voluntary and at your sole risk. The information available through the App is general in nature.
You are solely responsible for your reliance on the App and the outcome results or actions resulting from your use of the App and its content. CGH expressly disclaims any warranty either express or implied, including without limitation warranty of fitness for a particular purpose, merchantability, or non-infringement. CGH does not guarantee and does not promise any specific results benefits or outcomes from the use of the App.

Limitation of Liability
In no event will CGH and its affiliates be liable to you or any third person for any direct, indirect, consequential, exemplary, incidental, special or punitive damages, including lost profits arising from the use of the App, even if CGH has been advised of the possibility of such damages. You further agree that, notwithstanding anything to the contrary contained herein, CGH shall at all times not have any liability towards you for any cause whatsoever, and regardless of the form of the action arising out of the use of the App (including any modification, suspension or discontinuance of the App, in whole or in part, or any service, content, feature or product offered through the App) or in connection therewith.

Neither the course of conduct between you and CGH nor any trade practices shall act to modify the Terms. CGH may in its sole discretion assign its rights and duties hereunder to any third party at any time without consent or notice to you.

Waiver of Claims
You agree to waive any and all claims against CGH and affiliates that may arise from this agreement, and any and all claims that may arise from the use of the App by any third parties with or without your knowledge or consent. CGH and its affiliates make no claims, representations, and imply no warranties to the accuracy, reliability, fitness, or soundness of any content or recommendations in the App. CGH and its affiliates will not be responsible or liable for any factual or other error or defects in the App.

Indemnification
You agree to hold defend, indemnify and hold harmless CGH and any of its affiliates, advertisers, promoters or distribution partners for any loss or damage, including personal injury or death, resulting from anyone's use of the App controlled by or allowed by you, including any damage or loss resulting from any content provided on the App or transmitted by the App to any third-party.

License
CGH grants you a limited, royalty-free, non-exclusive, [personal and non-transferable] license for non-profit non-commercial and/or educational purpose. It may be included with CD-ROM/DVD-ROM distributions. You are NOT allowed to make a charge or obtain any benefit from third parties for distributing this App (either for profit or merely to recover your media and distribution costs) whether as a stand-alone product, or as part of a compilation, nor to use it for supporting your business or customers. It may be distributed freely on any website or through any other distribution mechanism, as long as no part of it is changed in any way and such distribution is subject to the Terms, for which any breach by the users of the distributed App and/or its contents shall be deemed your breach and responsibility. CGH may update or modify the App, in whole or in part the contents in its sole discretion. CGH shall NOT be liable to you or to any third party for any modification, suspension or discontinuance of the App, in whole or in part, or any service, content, feature or product offered through the App.
You may install and use an unlimited number of copies of the contents of the App. You may reproduce and distribute an unlimited number of copies of the contents of the App, provided that each copy shall be a true and complete copy, including all copyright and trademark notices, and shall be accompanied by a copy of these Terms.
Copies of the contents of the App may be distributed as a standalone product or included with your own product as long as contents of the App or App is not sold or included in a product or package that intends to receive benefits or profits through the inclusion of the App. The App may only be included in any free or non-profit packages or products.
The App and contents are licensed as a single product. Its component parts may not be separated for use on more than one device. You agree that the App, including any content made available through the The App, is the property of CGH, and are protected by applicable intellectual property laws. The App is licensed as a freeware, not sold, to you. You may utilize the App only as permitted by these Terms. You may not, and will not permit any other party to (1) modify, adapt, change, add, delete, alter, translate or create derivative works of the App; (2) sublicense, distribute, sell or otherwise transfer the App to any third party except in accordance with these Terms; (3) reverse engineer, decompile, disassemble or otherwise attempt to derive the source code or structure of the App; circumvent or attempt to circumvent any electronic protection measures or encryption in place to regulate or control access to the App or any product of the App. You may not remove, alter or obscure any copyright notice or any other proprietary notice that appears on or in the App.

No agency, partnership, joint venture, employer or franchiser relationship is intended or created by use of the App, whether between you and CGH, its affiliates or any third party.

Termination.
Without prejudice to any other rights, CGH may terminate this license if you fail to comply with any of these Terms. In such event, you shall destroy all copies of the App and its contents and cause copies of contents you have used in your product or distributed to be destroyed accordingly..

Governing Law
This Agreement shall be governed by, and will be construed under, the laws of the Singapore, without regard to choice of law principles. Any claim or dispute arising in connection with your use of the App shall be brought exclusively in the courts of Singapore. PLEASE NOTE THAT BY AGREEING TO THESE TERMS OF USE, YOU ARE: (1) WAIVING CLAIMS THAT YOU MIGHT OTHERWISE HAVE AGAINST CGH BASED ON THE LAWS OF OTHER JURISDICTIONS, INCLUDING YOUR OWN; (2) IRREVOCABLY CONSENTING TO THE EXCLUSIVE JURISDICTION OF THE COURTS OF SINGAPORE OVER ANY DISPUTES OR CLAIMS YOU HAVE WITH CGH; AND (3) SUBMITTING YOURSELF TO THE PERSONAL JURISDICTION OF COURTS LOCATED IN SINGAPORE FOR THE PURPOSE OF RESOLVING ANY SUCH DISPUTES OR CLAIMS.

Severability
If any provision of these Terms is found to be unlawful, void or for any reason unenforceable, that provision will be deemed severable from these Terms and will not affect the validity and enforceability of any remaining provision.

Miscellaneous
These Terms, together with all policies referred to herein, are the entire Agreement between you and CGH relating to the subject matter herein and supersede any and all prior or contemporaneous written or oral agreements or understandings between you and CGH relating to such subject matter.