# Survey CTO: Features Checklist

**Device or Operating System Compatibility**

Which kind of devices or operating systems (OP) will the software work on?

SurveyCTO application mainly divided into two main parts

* SurveyCTO Collect (only available for android Operating System)
* SurveyCTO Client (available for Windows, Mac OSX and Java version for other flat forms too)

**SurveyCTO Collect**: SurveyCTO Collect is an Android app that data-collectors use to fill out forms on Android phones or tablets. To download and install, navigate to [your servername].surveycto.com/collect with your Android device’s browser, or manually install the following file onto your device.

**SurveyCTO Client:** The SurveyCTO Client is a desktop application that you can use to download, transport, export, and process your data. To download and install, navigate to [your servername].surveycto.com and navigate to about page in your desktop browser. You can select and download appropriate version for your OS.

**Usability**

How are questions, formats and rules created in the software? Does it require programming skills? Can it be created in-house, or does it require ongoing technical assistance?

Survey CTO uses variable lists in MSExcel. Each row in the variable list corresponds to a single variable, and each column is used to describe an attribute about that variable, including:

* Type: The data type for that variable (numeric, string, categorical: select only one; categorical: select all that apply, etc.)?
* Name: the variable name as it will appear in the data when it is downloaded from the server in .csv format.
* Label and Label:languagename: The question text in English and local language, including any question numbers.
* Hint and Hint:languagename: Usually reserved for instructions for an enumerator. These appear as italicized text below the question text and above the space for entering a response.
* Appearance: the way that answer options will be displayed, for example as radio buttons that show all responses or a drop-down menu that requires the surveyor to click on the answer space before (s)he can see the options.
* Constraint: constrains the answer options to a certain range, if a numeric variable. This can include requiring a certain number of decimal places.
* Constraint message and Constraint message:languagename: if an enumerator enters a response outside of the constraint, a customized message can be displayed giving them instructions about what to do, or describing their mistake.
* Relevance: specifies skip patterns, which are implemented automatically.
* Required: forces an enumerator to enter a response to the question before moving forward.
* Required message and Required message:languagename: if an enumerator has failed to answer a required question, a customized message can be displayed giving them instructions about what to do, or describing their mistake.
* Media:image, media:audio, media:video and each in a local language: allows insertion of various types of media in English and a local language
* Calculation: allows insertion of prefilled data or allows for mathematical operations using answers entered by an enumerator (e.g. taking the difference between the first and second trials when taking height or weight)

**Question Types**

What types of data (questions) can be collected by the software, for e.g. text, numeric, single or multiple choices, date, time, photos, location, etc.?

Survey CTO can collect almost any type of data:

* Text, but only using Roman Letters, not other scripts
* Numeric, using a simple number pad;
* Categorical data (single choice or select all that apply) using drop-down menus, radio buttons, or touchpad interface;
* Date and time either automatically collected or input using calendar and clock interface;
* Photographs;
* Other multi-media; and
* GPS.

**Formatting and Organization**

What types of display formats are supported by the software like tables and matrices, sections, single-page grouping, hint text, colored fonts, video or audio content, etc.?

Survey CTO can display a question in Roman Script, Devanagari, and multiple other scripts, as long as the device in particular also supports display of that script. It also allows a surveyor or other user to toggle back and forth between English and other language versions of the same survey. However, formatting a question so that different parts are bold, italicized, highlighted, etc. is not possible. However, users can opt to insert a picture in place of inputting text for a question, which greatly expands the display options. If, for example, a user wishes to have part of a question highlighted in green, the user can format the question in a word processor exactly as they want it to appear, and then convert it to an image. That picture, of the formatted text, can be inserted in place of question text.

The one except is the “hint” text in Survey CTO, which appears between the question and the answer space in a smaller, less bold font than the question text. This can be reserved for instructions for the interviewer that are meant to be kept private, not read out loud to the respondent.

Survey CTO also allows users to determine how many questions should appear on a single page by inserting page breaks. A user can format a survey to avoid any need for scrolling up and down a page.

Video and Audio content can also be inserted into the module; however, it is important to note that the sound volume for multi-media content is limited to the capacity of the device.

**Logic Functions**

Does the software allow for logical, rule-based actions such as repeating of questions, skip rules, answer limits and validations, pre-loading of data, randomization, etc.?

Survey CTO can create automatic skip patterns based on the responses to previous questions. An automatic skip pattern rule can be built both for categorical and numerical answers. Skip patterns can also be based on responses to two different questions; for example, the protocol for taking anthropometry is to take two measurements and if they differ by more than a certain amount, to take a third measurement. Survey CTO can calculate the difference between the two measurements and either display or skip over the redundant third measurement as appropriate.

Survey CTO can limit numerical questions to certain values (i.e. 10 – 25, inclusive), or can require that a surveyor enter in a numerical answer to a certain number of decimal places (i.e. requiring 10.01, rather than just 10). Survey CTO can also validate the questions against the answers to previous questions, or can display the answers to previous questions to prompt the surveyor to probe more. The validation can be “hard”, in which a surveyor is not allowed to proceed with the survey until they have corrected the logical inconsistency, or can be “soft”, in which the surveyor is simply warned about the logical inconsistency, but allowed to proceed if they insist.

Questions can be repeated in a “loop”, which Survey CTO refers to as a “group”. These “groups” are a series of questions to be asked in a particular order. For example, there could be a series of questions about each child in the household – age, birthdate, and gender. Survey CTO allows the user to add as many or as few of these groups as are needed, to capture the relevant data for all children in the household.

Data can be prefilled and used to populate questions or answer choices, or can merely be displayed on the screen.

Randomization of households or respondents is not possible with Survey CTO. It is also not possible to randomly select a subset of questions for a survey, such as to develop a backcheck survey.

**Deployment and Storage**

Can data-entry formats be updated remotely on the devices? How much data can be stored on the mobile devices? Can the data be edited after entry? Does it create back-ups?

Yes data-entry formats can be updated remotely on the device. All the data-entry formats will be placed in a secured SurveyCTO online server. This enables to update formats from anywhere and also android SurveyCTO Collect application can download and update with a click/touch on refresh button provided in “Get Blank Form” area when android device connected to internet.

Data storage capacity is dependent on model of android device and its internal memory capacities.

Data editing after entry is possible with SurveyCTO Collect application. This feature can be enabled or disabled depends upon project requirements.

SurveyCTO Collect can back up data up to 24 days in the android device (2 days in old versions). Whereas Servers managed by SurveyCTO manages 30 days mirrored back-ups. If you ask to restore your database for some reason, SurveyCTO can restore to any point in the last 30 days – but SurveyCTO will charge a fee of $199. (Of course, if the database restore is necessary due to some server or software fault on SurveyCTO end, they will not charge anything)

**User Management**

How does the software control user access? Can multiple users access the same questionnaires, edit data, etc?

SurveyCTO Administrator (Data Manager) can create different user logins for different users and purposes. You can send a request to Data Manager ([rama.krishna@ifmr.ac.in](mailto:rama.krishna@ifmr.ac.in)) to create different users and access permissions as mentioned below.

**Data collection only**: For surveyors collecting data with SurveyCTO Collect.

**Data manager (collection and download)**: For users who will be downloading data using the SurveyCTO Client will need this permission.

**Form and data manager (can administer forms):** For users who will be adding, updating, or deleting forms on the SurveyCTO Server will need this permission.

**Form, data, and user manager (can also administer users):**  For users who can also create additional manager accounts that share this capability.

**Security**

Is access to the software password protected? Is the data encrypted?

Data access from SurveyCTO Client is a password protected. Whereas, access to SurveyCTO collect is not password protected by default and this can be changed (protected) with admin settings page.

If you are collecting sensitive, personally-identifiable data, then you will want to encrypt it. The model of encryption supported by SurveyCTO is the following:

1. As soon as a surveyor marks a filled-out form as "finalized" (by, e.g., checking Mark form as finalized just after filling out the form), the form's contents will be encrypted using the form's public key.
2. From that point forward, the form can no longer be edited because not even the device on which the form was filled in can decrypt it.
3. If the form data is transmitted via a 3g or other Internet network, it is encrypted in transit. This is true for all form data regardless of whether the form itself is encrypted, but in a sense, then, encrypted forms are doubly-encrypted. Already-encrypted forms are encrypted with SSL for transport over the Internet.
4. The SurveyCTO Server stores the form data, but it remains encrypted and therefore unreadable by the server (and by anyone who might conceivably compromise the server).
5. When the form data is downloaded by the SurveyCTO Client, it is again doubly-encrypted, by both the original public key and the SSL protocol used for secure data transmission.
6. The SurveyCTO Client stores a local copy of the form data, but it remains encrypted and therefore unreadable.
7. The end-user who downloads the data presumably has the private key necessary to decrypt and read the data. However, for added security this user may choose not to store that private key on an Internet-connected computer. Thus, the user may first transport the data to a secure "cold-room" computer, and only then decrypt the data, export it for further processing, and begin the analysis.

To encrypt a form, it is first necessary to generate a public/private key pair. This same key pair will be used for encrypting and decrypting all of your sensitive data, so you will use the same pair for all of your encrypted forms.

Please contact Data Manager to develop Data-Formats encryption and key.

**Language Support**

Can local (non-Latin) fonts be supported by the software for displaying questions, as well as data entry?

Yes. SurveyCTO supports all fonts limited to android devices support for non-Latin fonts. For any non-Latin font, be sure to only use UNICODE fonts. Different mobile/tablet manufacturing companies provides only locally used UNICODE fonts specific to that region. For example Samsung tablets released in Africa will not have Indian script support and similarly, few of low cost china mobiles/tablets manufactures remove UNICODE fonts from the device to save memory. In such cases, we won’t be able to get local fonts on the devices.

The above also applicable to Data Entry and is also required additional keyboard application that supports local language input. For example [MultiLing Keyboard](https://play.google.com/store/apps/details?id=com.klye.ime.latin) in Google Play Store.