Data enumeration process for Table 3 (APPG Extent of Data Recognised)

In this document, we delve deeper into the analytical process of identifying and categorizing various data elements and practices recognized by Automated Privacy Policy Generators (APPGs). The objective is to discern the scope and depth of data utilization, and the practices APPGs identify to support the formation of privacy policies.

Data Enumeration Process:
1. Identification of Major Aspects
Initially, the investigation categorizes the data recognition capabilities of APPGs into four broad categories:

App's Basic Information: This includes the foundational details about the app and its developer.
Users' Personal Information: This encompasses both general and sensitive personal data collected from the end-users.
Device Permissions: This section details the various permissions an app may request to access different functionalities on an end-user's device.
Third-party Services: This includes the recognition of data use and sharing with selected third-party services.

2. Traversal and Count for Question and Option
To evaluate the recognition capabilities of APPGs, we intend to collect all potential questions and options that users might face while using. As some questions will only be popped up after ticking some prerequisites questions, to guarantee the completeness, we follow the "Depth-First Searching (DFS)" strategy to conduct the exploration. For example, the Question 2 will only appear in the next page if we select "Yes" for Question 1 in the red bounding box.

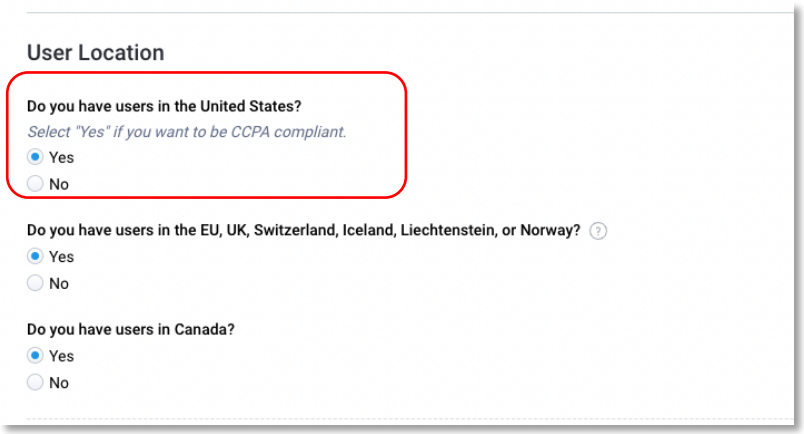
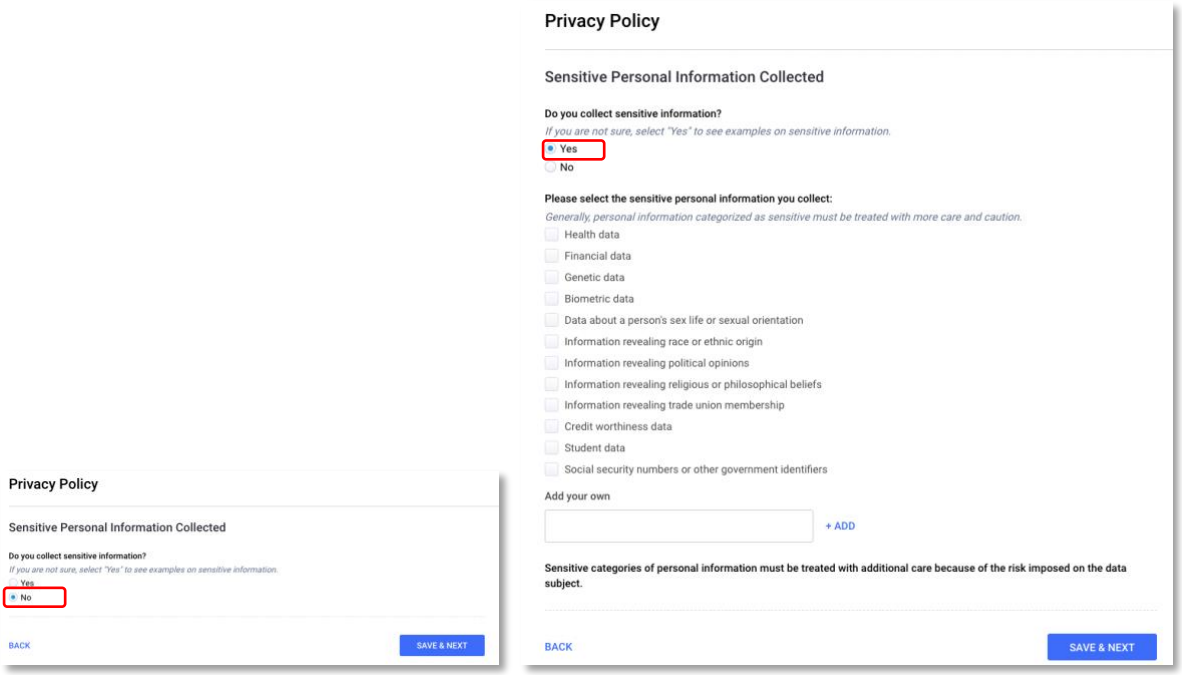


Figure 1 Question 1 in red bounding box

Figure 2 Question 2

Here is another example, the question about personal information selection will appear only “Yes” is selected for the first question.



During this process, we also counted the number of questions and recorded their types, which comes to the **Statistic summary** section in the Table 3. The “Minimum questions” denote the shallowest steps of our DFS strategy, and the “Maximum questions” denote the total unique nodes (questions) during our DFS traversal.

3. Data Classification

For each question and option mentioned in the previous step, two annotators independently judged whether it explicitly pertains to a specific data type, permission, or third-party service, then classified as ``recognised'' (\CIRCLE), otherwise ``absent'' (\Circle).

As it involves intensive manual work, to avoid the effect caused by potential human error, we employ the same strategy as introduced in the previous section.

Both annotators labelled ``recognised'' for 148 items and ``absent'' for 149 items. 6 items are labelled as ``recognised'' only by annotator A, and other 7 items are labelled as ``recognised'' only by annotator B. Thus, the Cohen’s Kappa $\kappa = 0.92$ for the initial manual labelling, which is an almost perfect level of agreement. For those disagreements, they discussed and agreed on the same answer.