Manual

For Alexa

Version 1.0

English

Summary

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1. Accessing the Form

To access the ForAlexa form in Google Chrome, Safari or Microsoft Edge, enter the browser and type the address https://levo.ufpa.br/ForAlexa.

1.1. ForAlexa Login

If the developer has already registered on ForAlexa, it is only necessary to inform the e-mail and password in the respective fields and click on "**Sign In**" (option 1, Figure 1), after which, a message will be displayed, informing the developer that ForAlexa is consulting the database. If the e-mail and password are correct, ForAlexa will load the developer's repositories, otherwise, the user is informed that the e-mail or password are incorrect. While on the Login page, the developer can activate or turn off a ForAlexa tutorial assistant (option 2, Figure 1). This assistant can help the developer to create a skill interactively, in addition to demonstrating and explaining each step in the creation process.

If the developer is not registered, it will be necessary to click on "**Sign up to ForAlexa**" (option 3 in Figure 1), or, if the password has been forgotten, it can be reset by clicking on "**Reset Password**" (option 4, Figure 1).

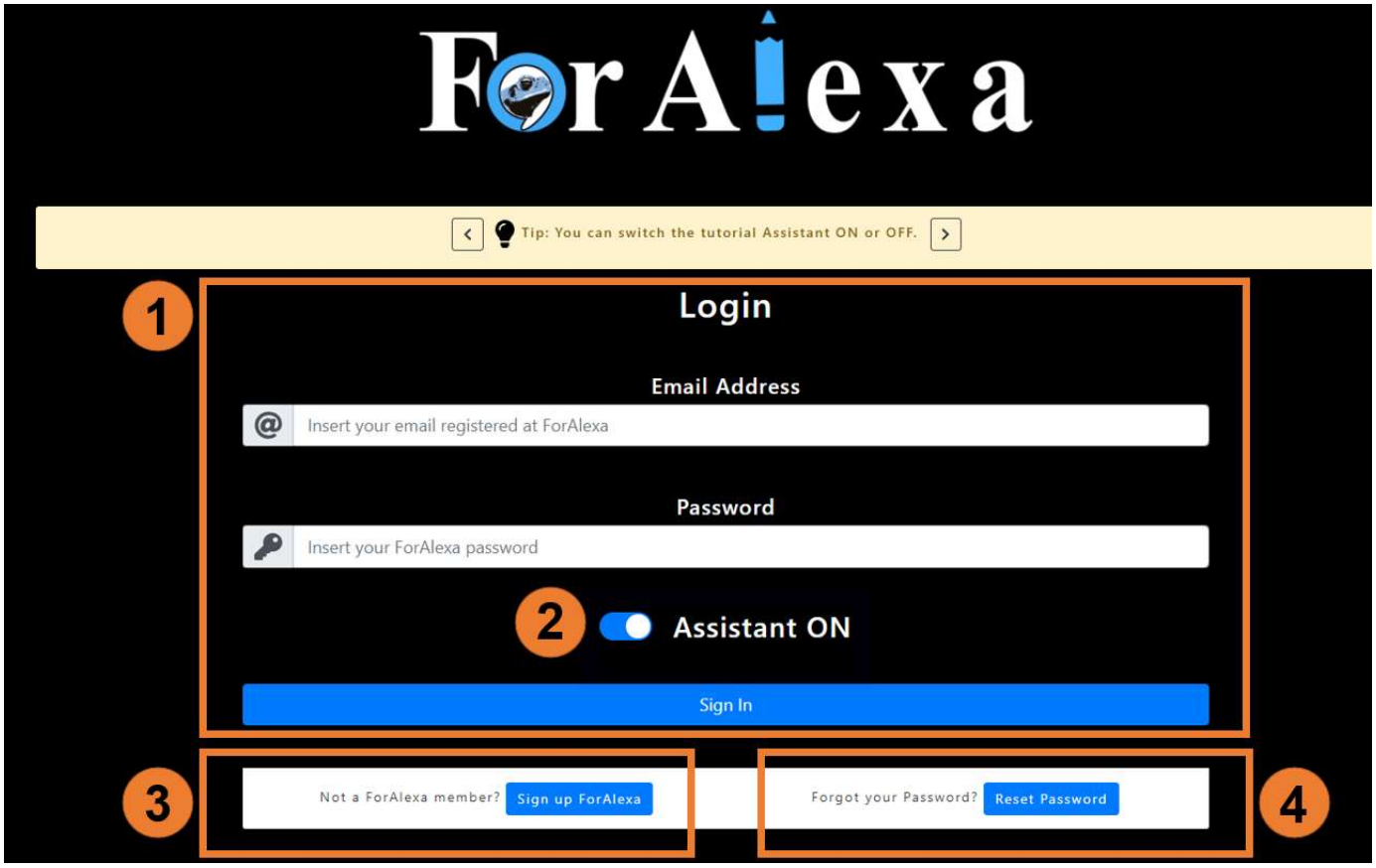

Figure 1. ForAlexa Login screen.

1.2. Developer registry

If the developer has not registered previously on the ForAlexa server, this can be done by clicking on "**Sign up to ForAlexa**" (option 3, Figure 1), which will load the developer registry (Figure 2). Note that all the fields are required here. The developer must inform some personal data to register and, if necessary, to recover their password. These data are stored on the institutional server at the Federal University of Pará.

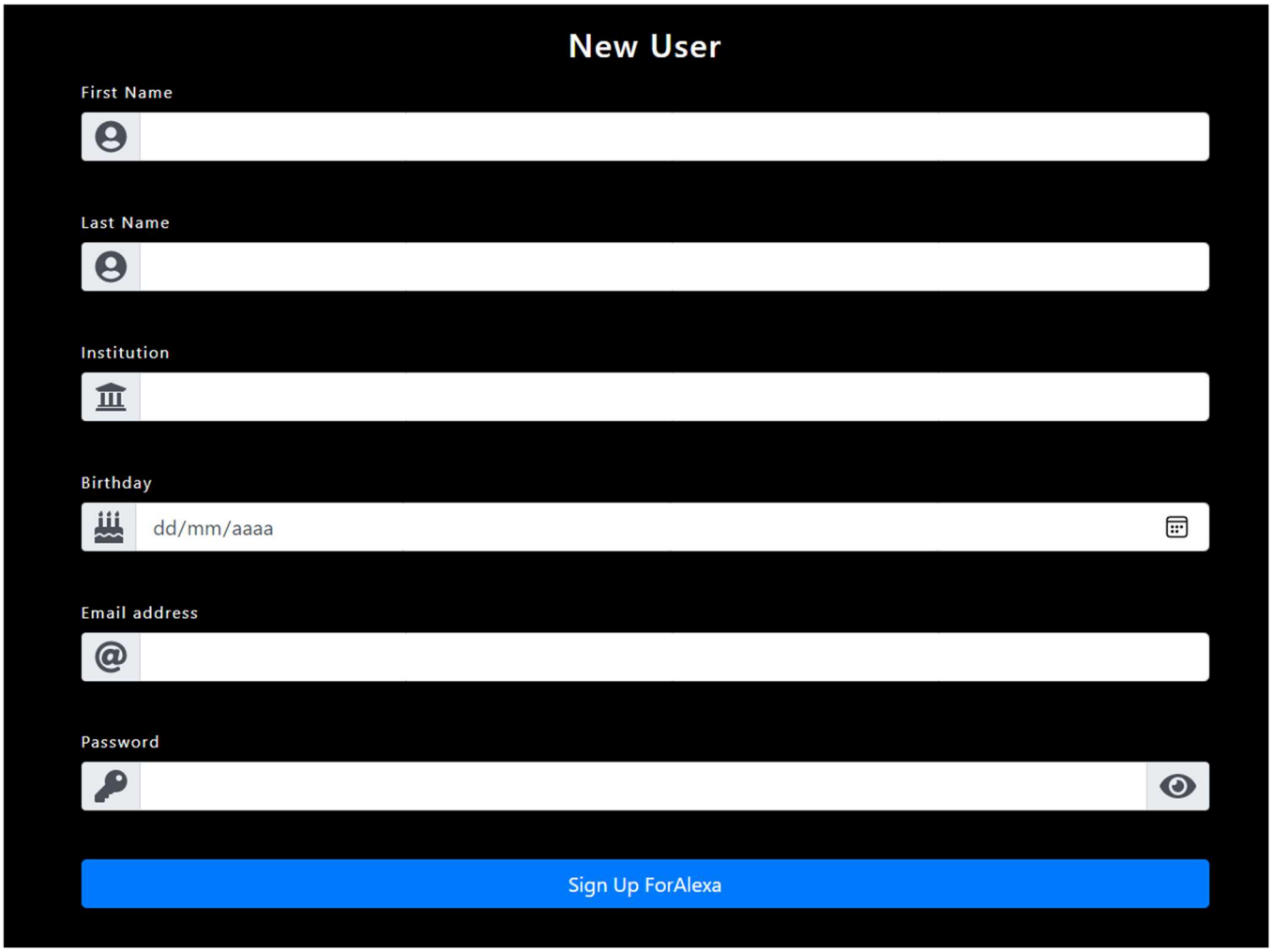

Figure 2. Developer registration form.

1.3. Password Recovery

If the password is forgotten, it can be recovered by clicking on "**Reset Password**" (option 4, Figure 1), which will load the password reset page (Figure 3). Here, the user must inform their personal data (option 5, Figure 3), except for their password, and then click on "**Reset Password**" (option 6, Figure 3). When ForAlexa recovers these data, the same page is loaded, this time allowing for the insertion of a new password, which will replace the old one (option 7, Figure 4), after which, the use must click on "**Update Pasword**" to save the new password (option 8, Figure 4).

Figure 3. Password Recovery.

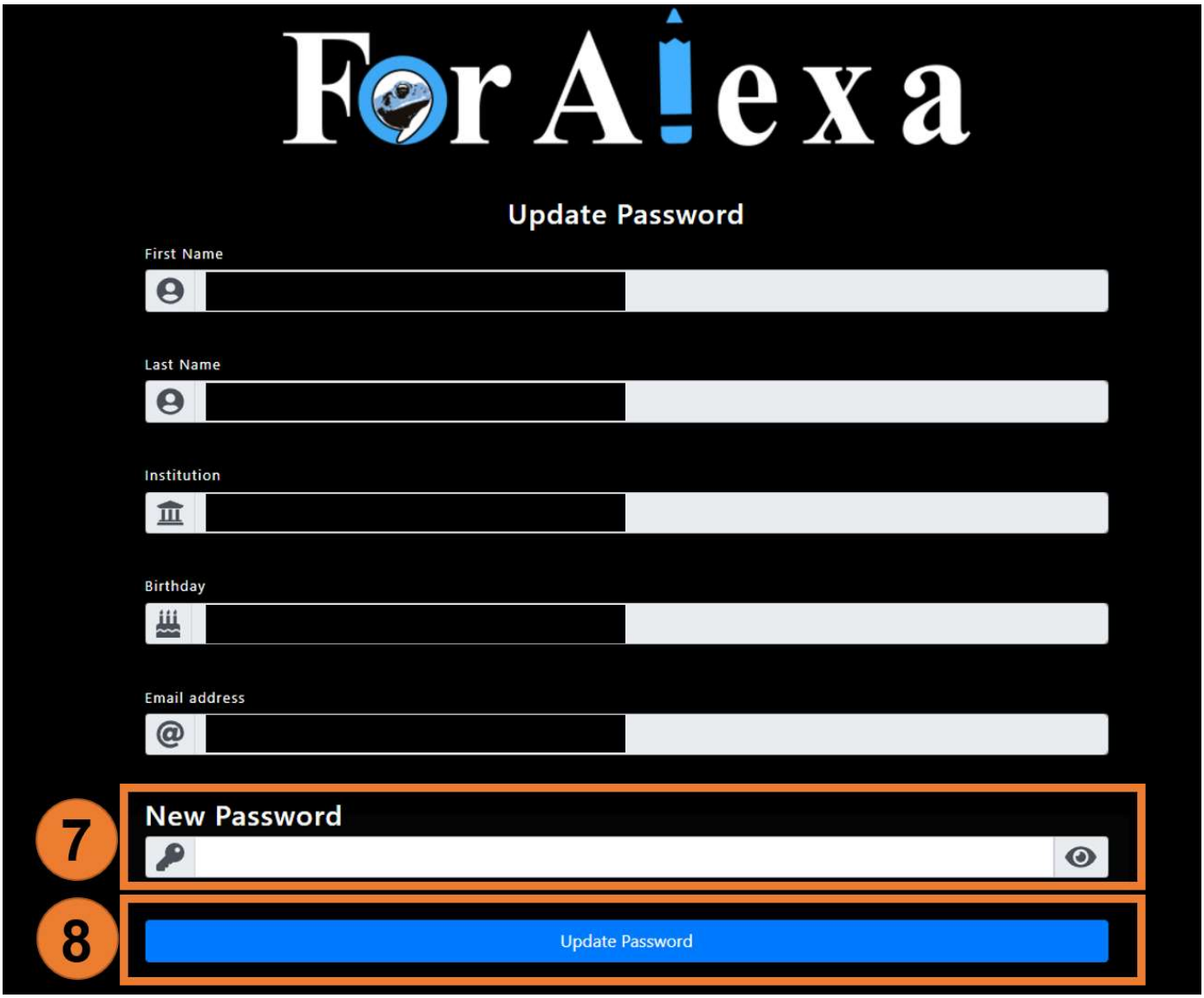

Figure 4. Resetting the ForAlexa password.

2. ForAlexa

Once the user has logged in to ForAlexa (option 1, Figure 1), the developer validation page will be loaded, which consults the database to verify that the e-mail and password provided already exist. If they are found, ForAlexa will load the list of repositories already registered by the developer, but if the e-mail is not in the database, ForAlexa will exhibit an error message (see 1.2 and 1.3).

Note that the whole Skill development process must be linked to a register in the database (e-mail and password). **In this case, we recommend the use of a standard e-mail in ForAlexa**.

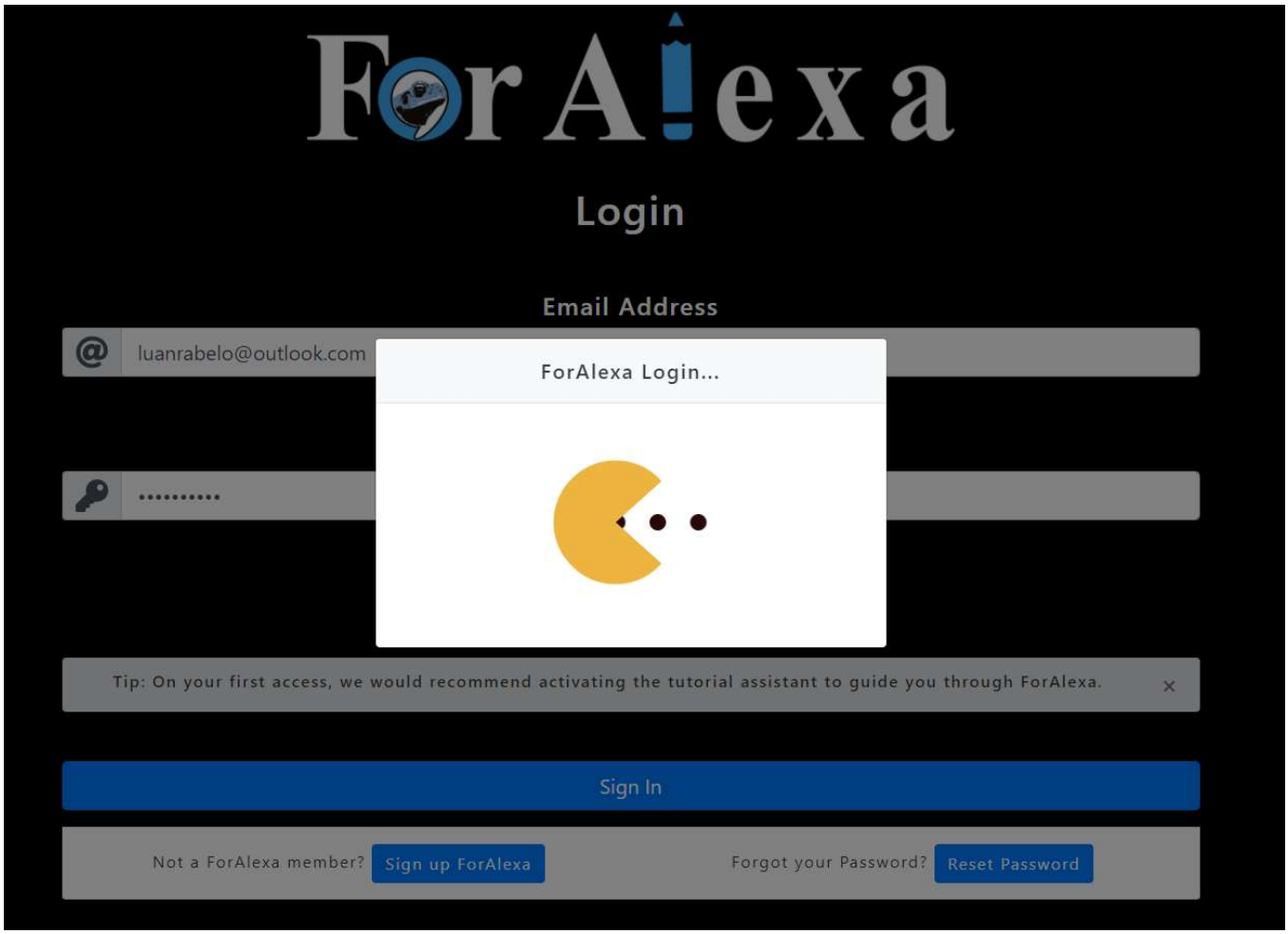

Figure 5. ForAlexa consulting the database.

2.1. Repositories

After validating the e-mail and password of the developer, a page containing the list of repositories will be loaded (Figure 6). If the developer has activated the tutorial assistant on the Login page (option 2, Figure 1), it will exhibit a brief description of the ForAlexa option menus (option 9, Figure 6), as well as information on each step in the process on the repository page, such as **Creation**, **Edition**, and **Access** (Figure 7).

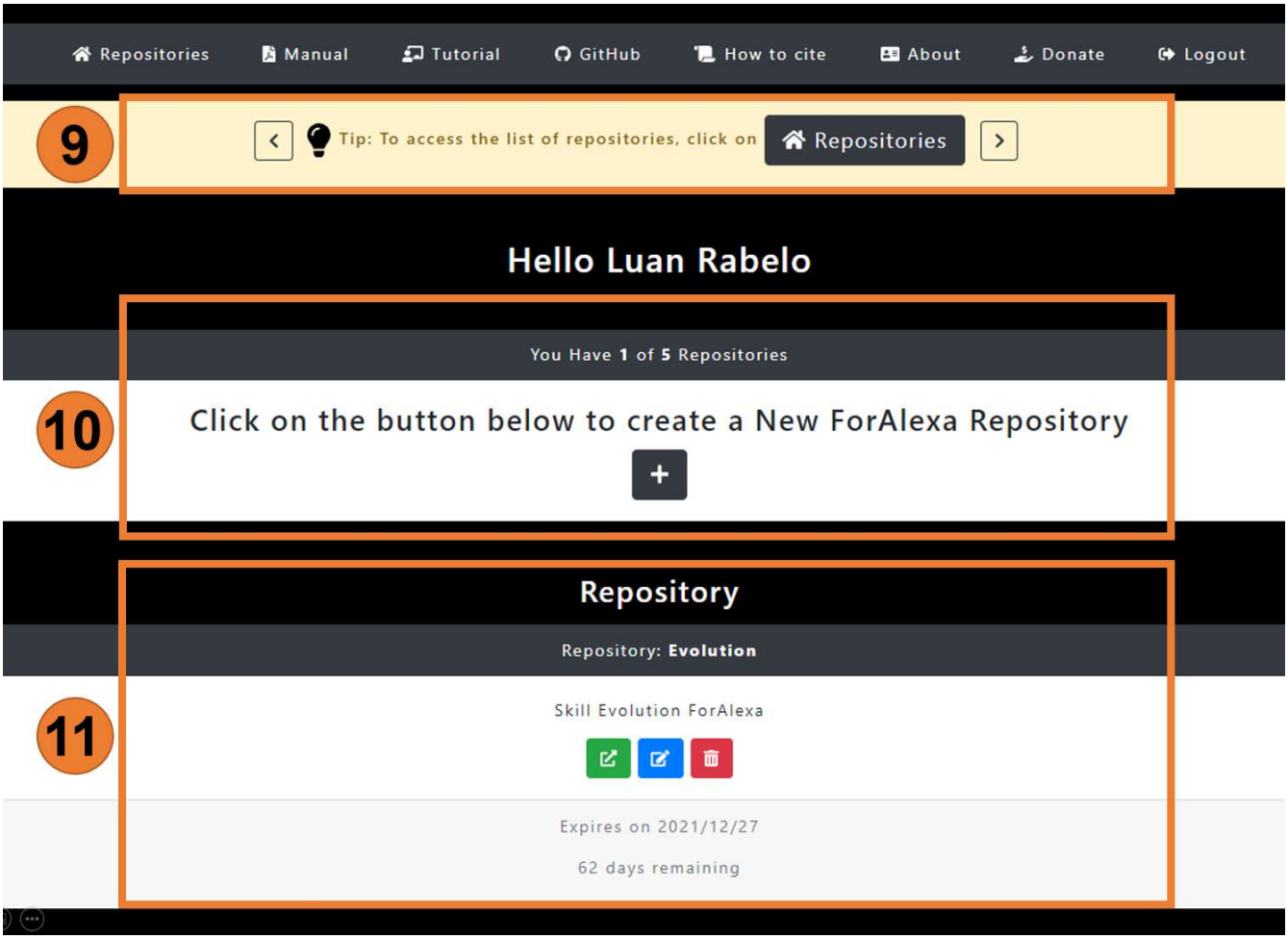

Figure 6. Repository Page and the List of Repositories (option 11). A developer can create up to five repositories, which are valid for 90 days.

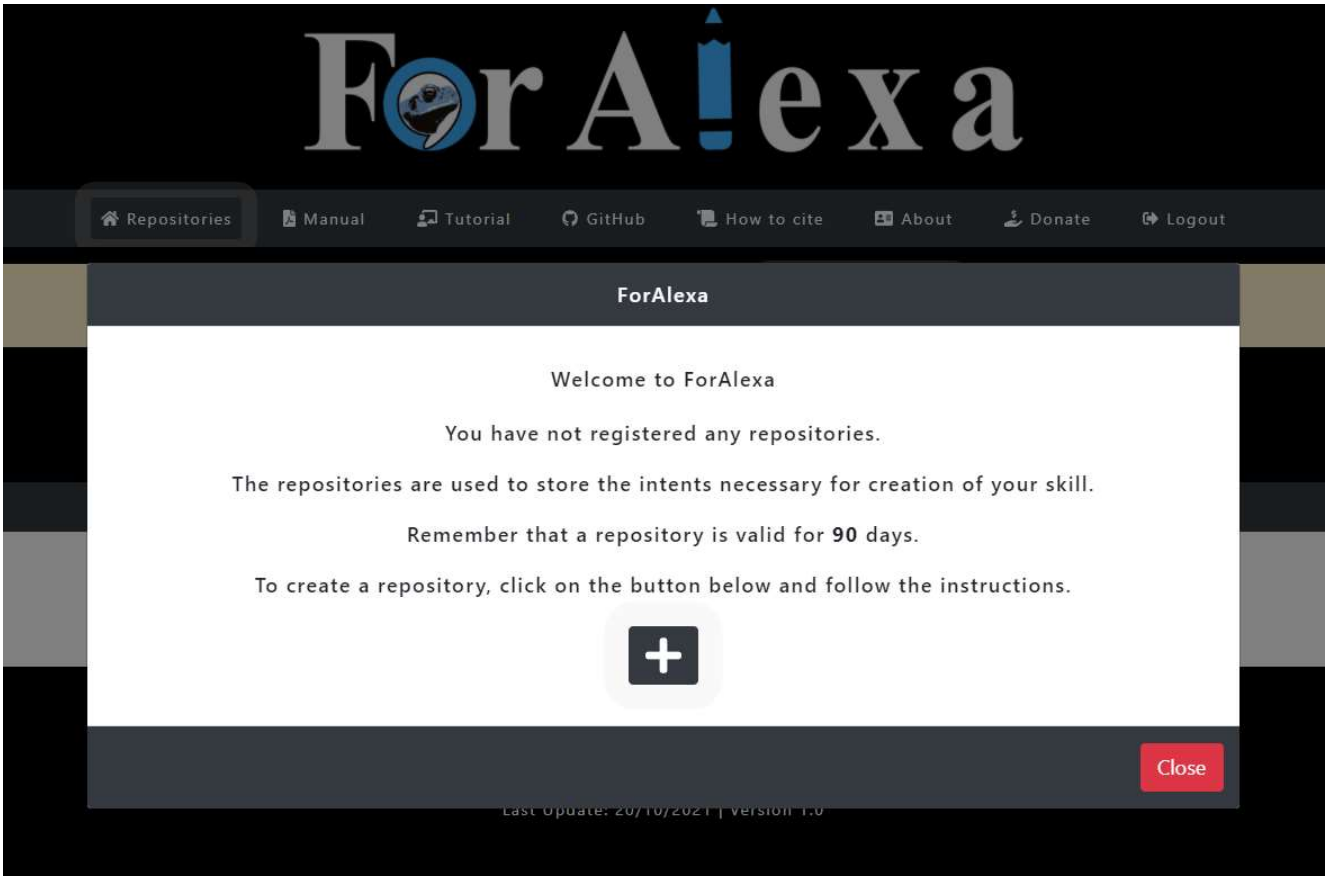

Figure 7. Tips for the creation of repositories in ForAlexa.

On the Repository Page, the developer can add new repositories (option 10, Figure 6) or access, edit or delete existing repositories (option 11, Figure 6). Each repository contains the Intents (see below) necessary for the creation of a skill. A developer can create up to five repositories (option 10, Figure 6), each of which can contain an infinite number of Intents. **However, each repository is valid for only 90 days, after which, it will be deleted from the ForAlexa server, together with its contents.**

To create a repository, click on "**Create a New ForAlexa Repository**" (option 10, Figure 6). This will load the creation page (Figure 8), which requires a name for the repository (option 12, Figure 8) and allows for an optional description (option 13, Figure 8). It is also necessary to accept the terms of the 90-day validity (option 14 Figure 8). Then click on "**Create Repository**" (option 15 Figure 8) to save the new repository.

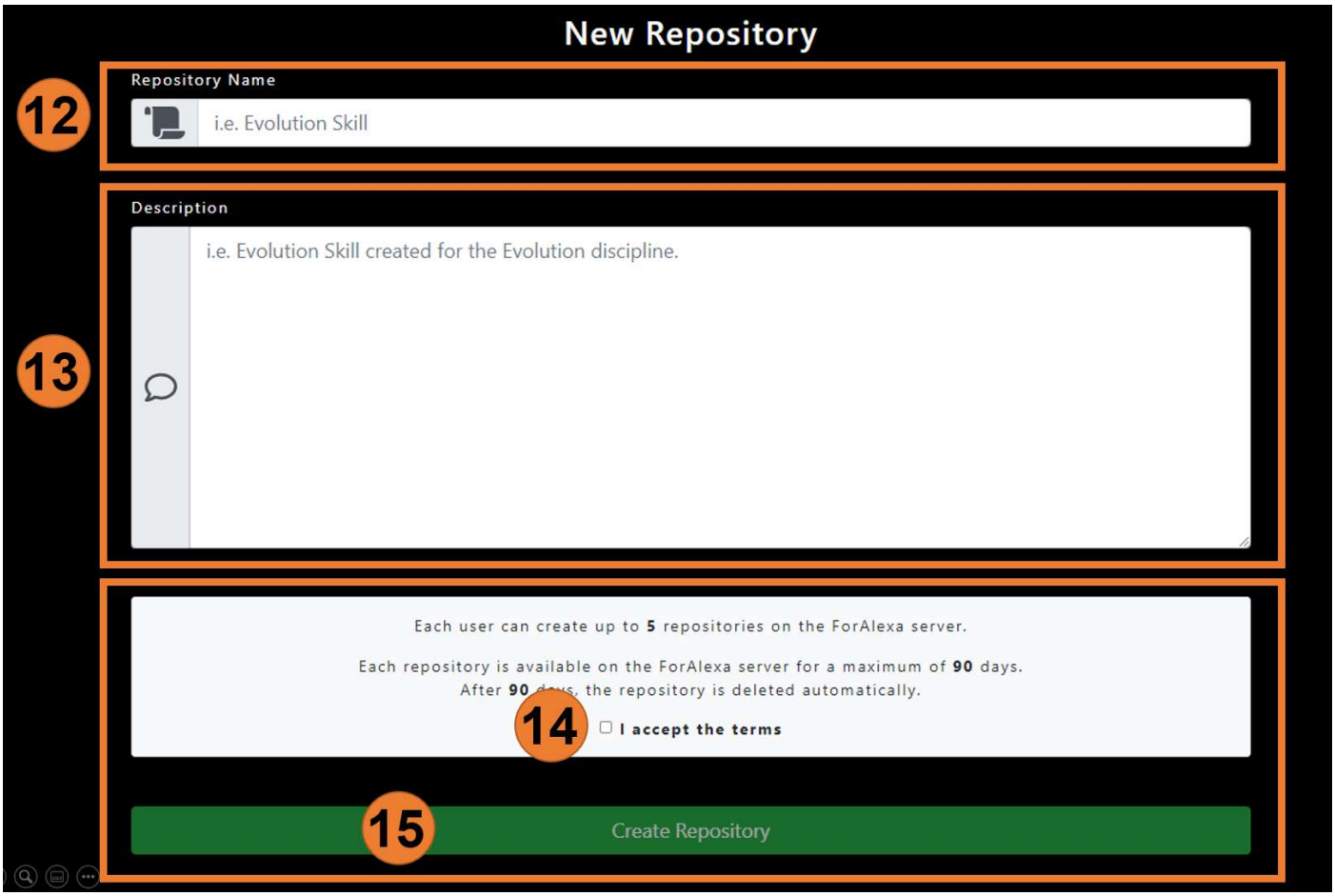

Figure 8. Creating a New Repository.

Once the repository has been created, ForAlexa returns to the initial page with a new repository registered (option 11, Figure 6), where the developer has the options of accessing the repository, editing its description or deleting it (Figure 9). When accessing a repository for the first time, ForAlexa will validate some data. (1) ForAlexa will verify if the repository already has the required Intents for the creation of a skill and, if not, ForAlexa will create and load a list of Intents for the developer. This makes the first access to a repository slightly slower than the subsequent accesses; (2) ForAlexa will also verify whether all the required Intents have been registered, if not, the missing Intent(s) will be identified and registered. If all the Intents already exist in the database, ForAlexa will skip the creation of these intents and load the list for the developer.

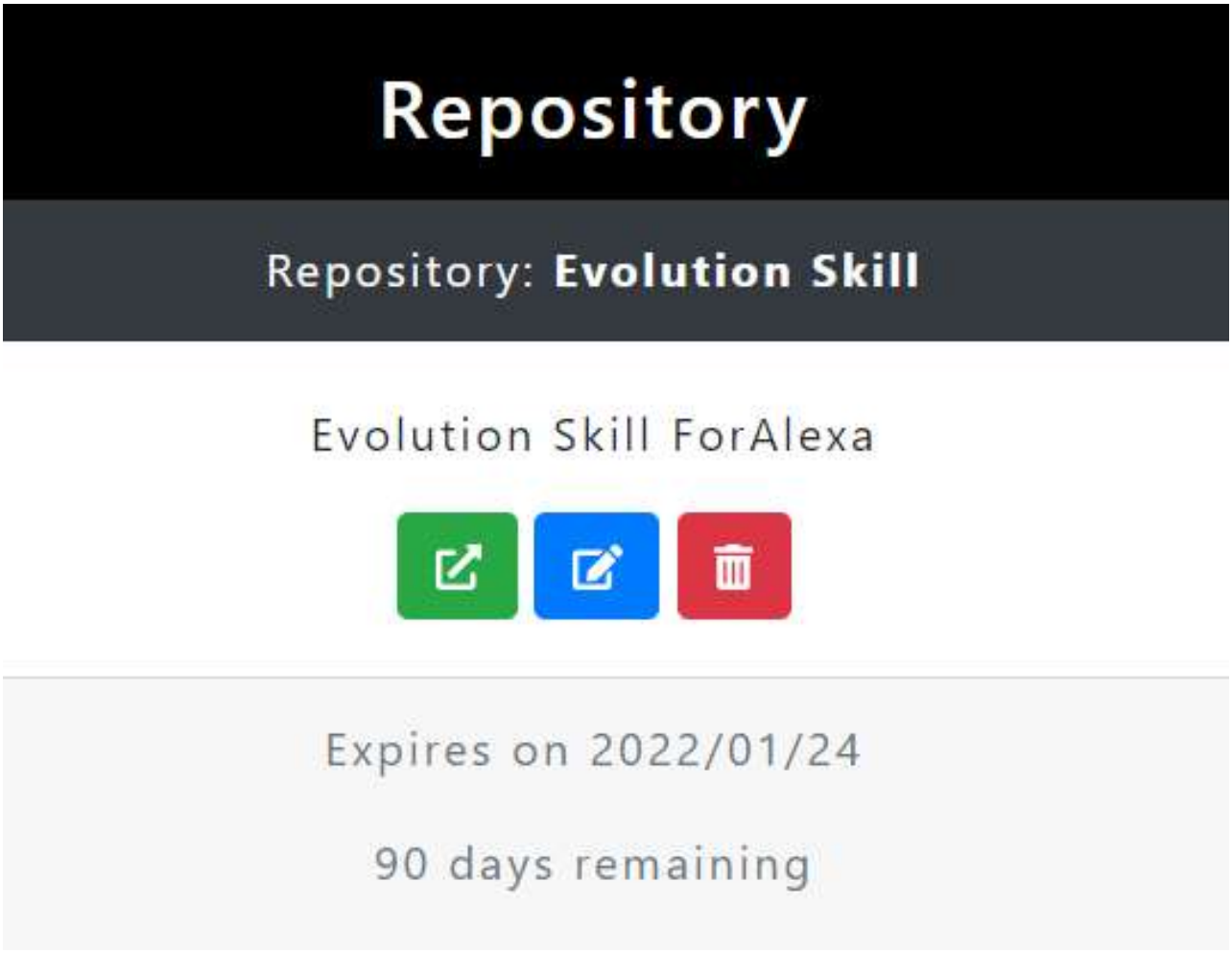

Figure 9. Options for accessing, editing or excluding a repository.

3. Creating a Skill

When accessing a repository, the developer will be presented with a list of the required Intents (Figure 10), and we would recommend editing the "**LaunchRequest**" Intent first. For this, click on the "**Edit**" icon in "**Options**" (option 16, Figure 11). If the tutorial assistant is activated (option 2, Figure 1), a brief tutorial will help the developer here.

Intent name	Status	Type
LaunchRequest	⊗	Required
HelpIntent	⚠	Required
CancelAndStopIntent	⚠	Required
FallbackIntent	⚠	Required
IntentReflector	⚠	Required
Error	⚠	Required
HelloWorldIntent	⚠	Required
AMAZON.YesIntent	⚠	Required
AMAZON.NoIntent	⚠	Required

Figure 10. Required Intents for the implementation of operational skills.

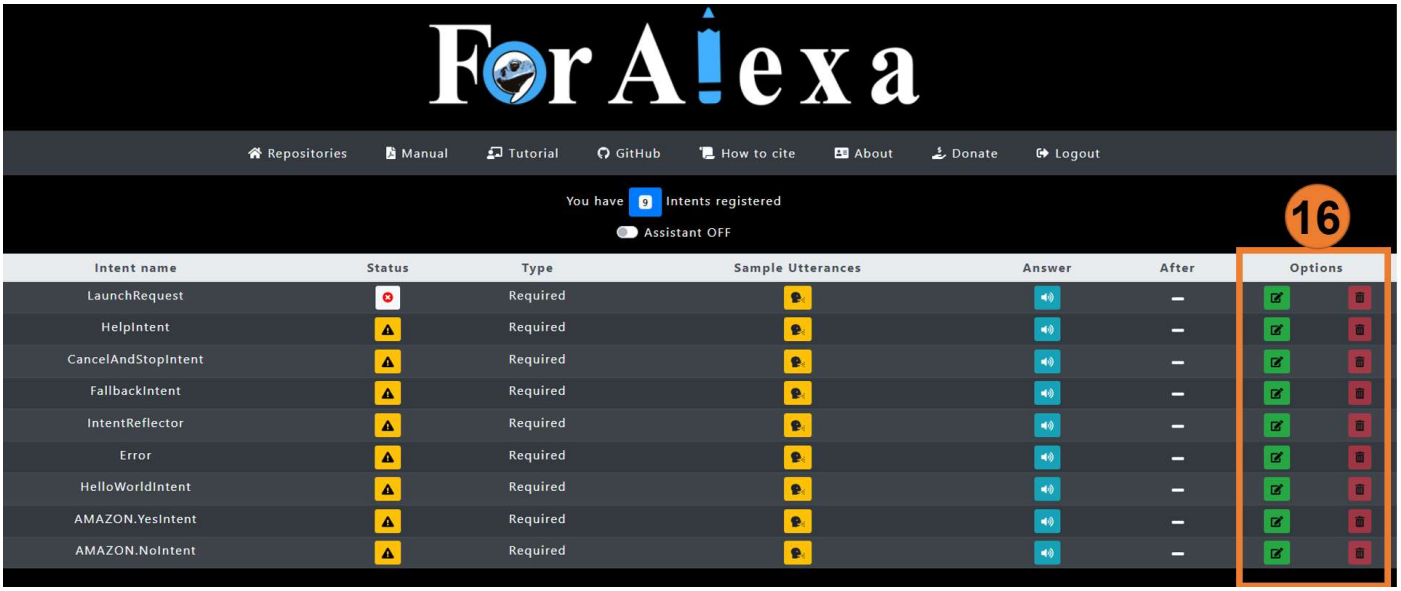

Figure 11. Page containing the list of Intents, and the options for the creation of new Intents or the exportation of existing Intents.

4. Configuring the LaunchRequest and the welcome message

This Intent is responsible for the skill invocation name. For example, if the LaunchRequest is "**evolution professor**", the skill will be activated by the command "**Alexa, open evolution professor**". To add an invocation name, fill in "**Skill Invocation Name**" (option 19, Figure 12). Once the Skill has been requested, a welcome message will be displayed, where the developer can inform what will be said to the user when the Skill is activated (option 20, Figure 12). This field has three rules:

- Invocation names must have at least two words (2–50 characters);
- The characters can only be letters or spaces, no special characters are accepted;
- No upper-case letters in any of the words.

One important tip here is to use simple phrases, given that Alexa is still learning some languages and, in any case, simple is always better. Here is an example:

Example 1

Skill Invocation Name: **evolution professor**

Alexa will say: "**Hello, Welcome to the evolution professor skill. My name is Alexa and I will guide you through the questions in this skill. If you would like to know what questions I can answer, ask me, questions about evolution?".**

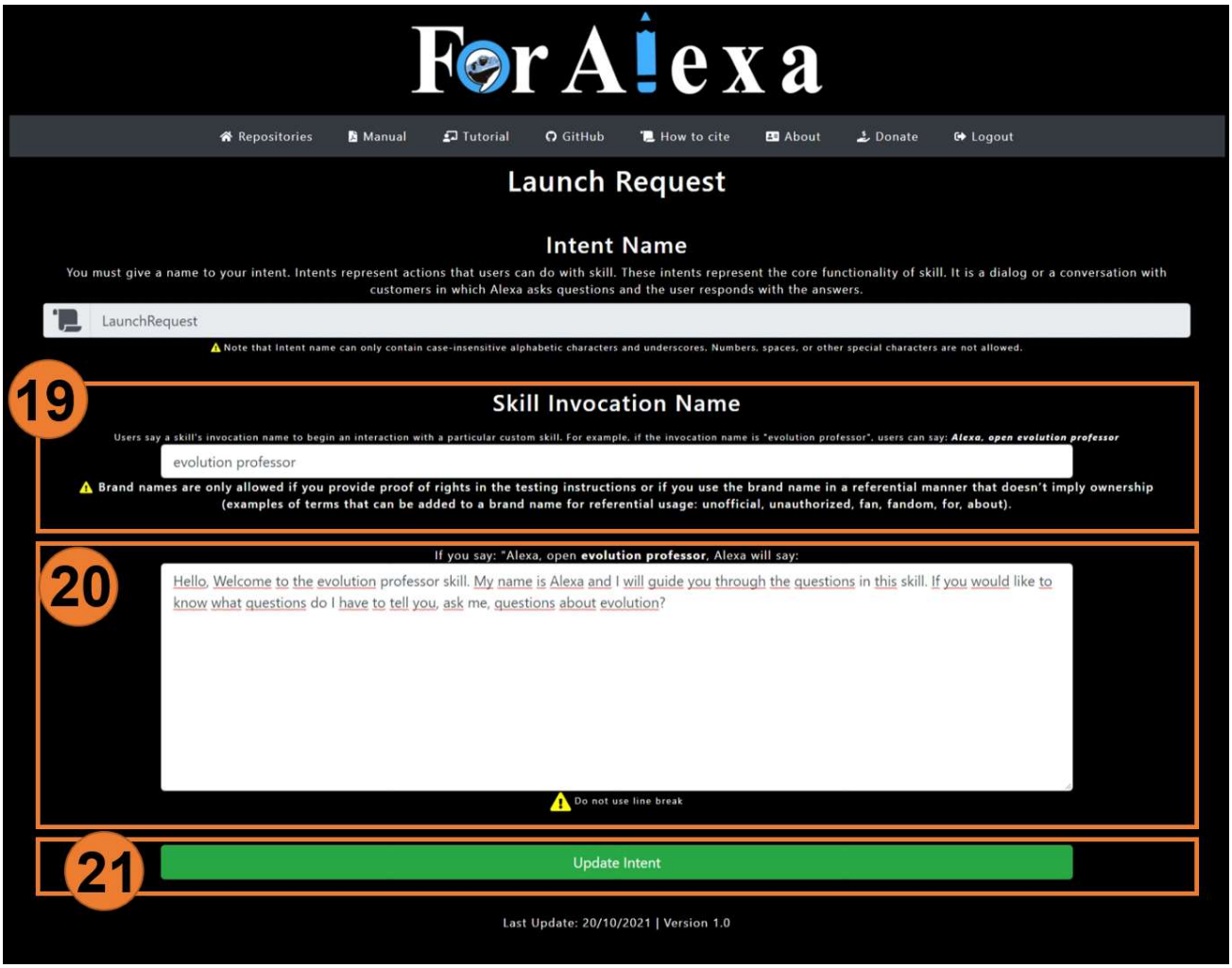

Figure 12. Intent editing form (LaunchRequest).

Once the data are inserted, click on **Update Intent** (option 21, Figure 12) to save the changes. If the tutorial assistant is activated (option 2, Figure 1), a tutorial will guide the developer through the edition of the LaunchRequest, inserting the information shown in Example 1 (Figure 13).

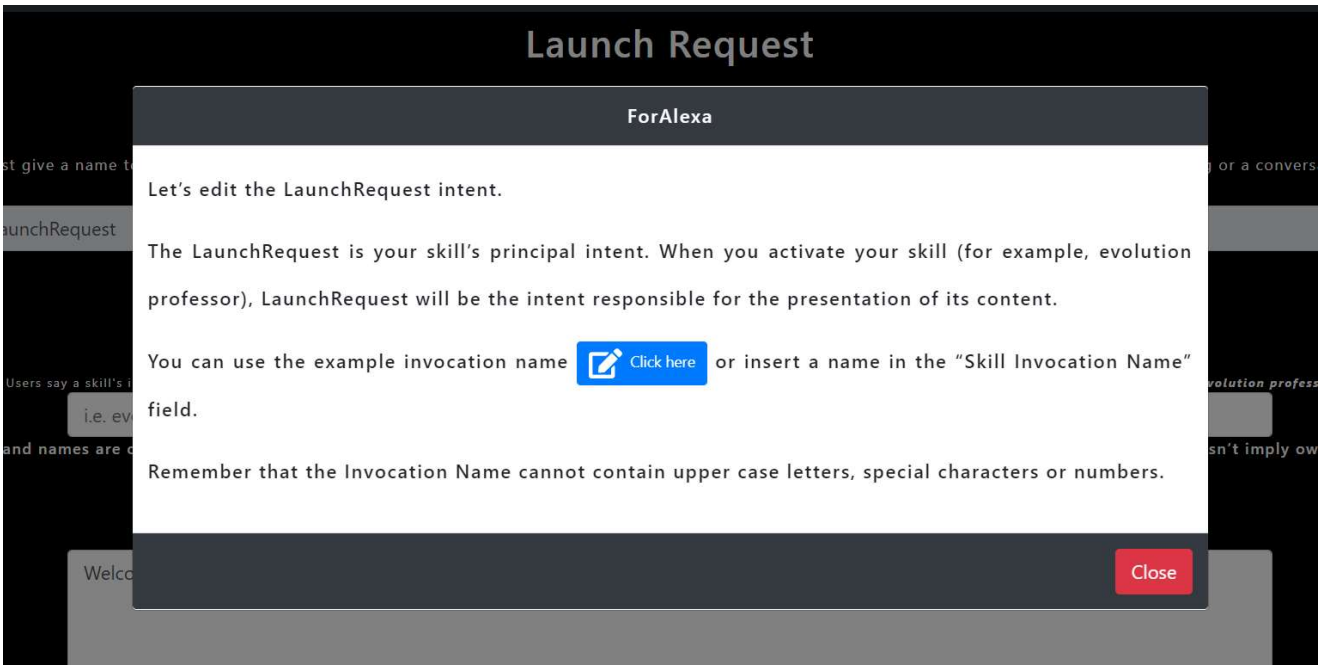

Figure 13. Tutorial assistant helping the developer to edit the LaunchRequest.

5. Registering New Intents

5.1. Questions and Answers

Let's register some new Intents of the **Question-and-Answer** type. On the page with the list of intents (Figure 11), click on **New Intent** and then on **Questions and Answers** (Figure 14).

Figure 14. Registering a new Intent.

This form is divided into two parts, the first part (option 22, Figure 15) refers to the Intent Name and its utterances (option 23, Figure 15). Insert the intent name, being careful to remember the rules for this field "**The intent name can only contain case-insensitive alphabetic characters and underscores. Numbers, spaces or other special characters are not allowed**".

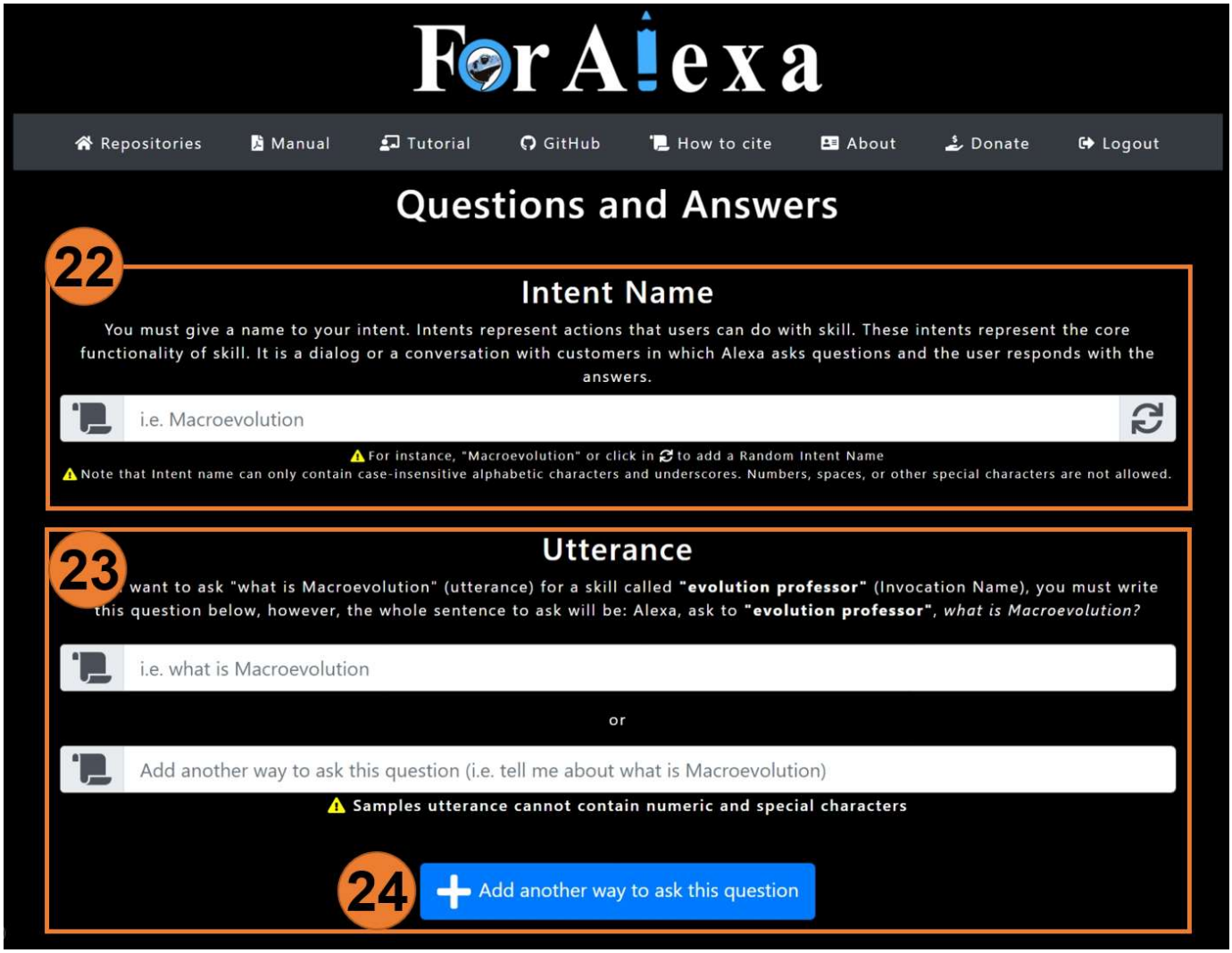

Figure 15. Questions and Answers form.

Intent names cannot be duplicated. In this case, ForAlexa will inform the user that the suggested name already exists (Figure 16).

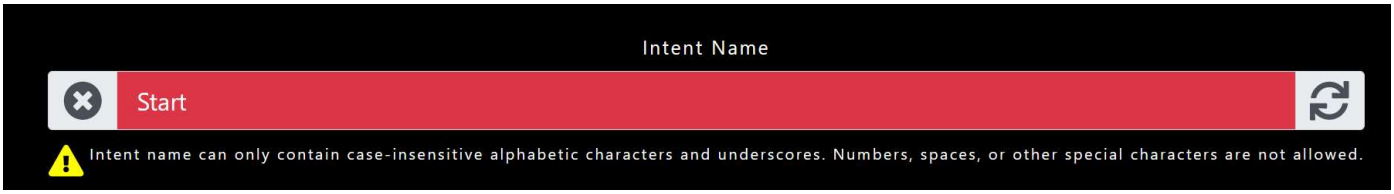

Figure 16. Intent Name already exists in the database.

After establishing the Intent Name, insert the utterances (option 23, Figure 15), which are the request phrases of an Intent. Here, the developer must consider all the different potential forms of request. For example, if a user wants to ask the skill “Who was Charles Darwin?”, but in the utterance, says only “Who was Darwin?” Alexa will respond with an error because the request phrase is either not registered in the database or is slightly different from that registered in the Intent. The developer is presented with only a standard two fields here, and if it is necessary to insert additional different ways of asking the same question, additional fields can be inserted by clicking on “**Add another way to ask this question**” (option 24, Figure 15). The second part of this form determines what Alexa will reply to a request (option 25 in Figure 17) and the subsequent action (option 26 in Figure 17).

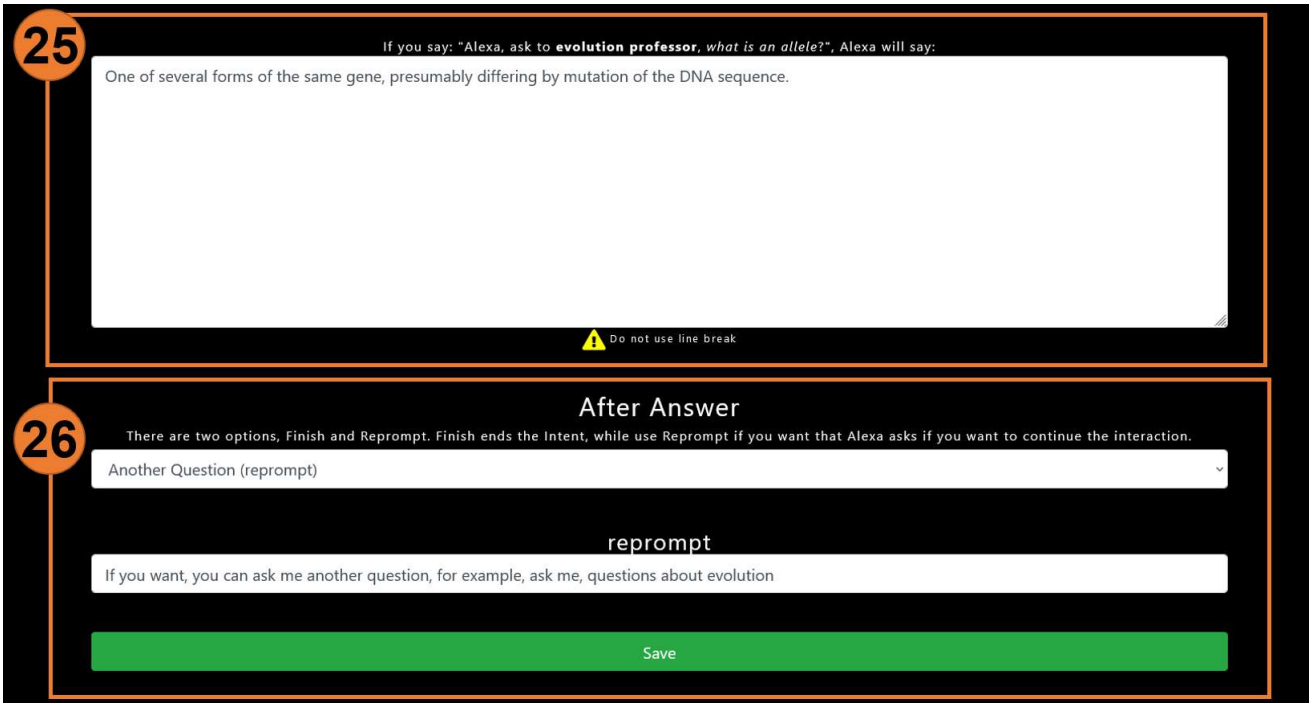

Figure 17. Second part of the Questions and Answers form.

The developer cannot use line breaks in "**Alexa will say**" (option 25, Figure 17). Some words may need to be adapted to guarantee that the user will understand them.

There are two options for "**After Answer**" (option 26 in Figure 17), Reprompt or Finish. If Reprompt is selected (default), a field is displayed (Figure 16), in which the developer must inform what Alexa will say after reading the answer (option 25, Figure 17). If Finish is selected, the skill will end after the answer is read (option 25 in Figure 17).

6. Examples of Questions and Answers

Some examples of Questions and Answers intents are given below:

Example 2

Intent Name: **Beginning**

Utterance: **What classes are taught in the evolution course?**

Alexa will say: **Mendelian Genetics and What is Evolution**

After Answer: **Choose the option, Another question (reprompt)**

Reprompt: **If you want, you can ask me another question, for example, questions about evolution**

Example 3

Intent Name: **Allele**

Utterance: **What is an allele?**

Alexa will say: **One of several forms of the same gene, generally differing through the mutation of the DNA sequence.**

After Answer: **Choose the option, Another question (reprompt)**

Reprompt: **If you want, you can ask me another question, for example, questions about evolution**

Example 4

Intent Name: **Dominance**

Utterance: **What is a dominant allele?**

Alexa will say: **The dominance of an allele refers to the extent to which it produces the homozygous phenotype when heterozygous.**

After Answer: **Choose the option, Another question (reprompt)**

Reprompt: **If you want, you can ask me another question, for example, questions about evolution**

Example 5

Intent Name: **Recessive**

Utterance: **What is a recessive allele?**

Alexa will say: **A recessive allele is one that is detectable in the phenotype only when homozygous.**

After Answer: **Choose the option, Another question (reprompt)**

Reprompt: **If you want, you can ask me another question, for example, questions about evolution**

Example 6

Intent Name: **Evolution**

Utterance: **What is evolution?**

Alexa will say: **In a broad sense, the origin of entities possessing different characteristics and changes in the proportions of these entities over time.**

After Answer: **Choose the option, Another question (reprompt)**

Reprompt: **If you want, you can ask me another question, for example, questions about evolution**

Example 7

Intent Name: **Microevolution**

Utterance: **What is microevolution?**

Alexa will say: **A broad term, which usually refers to slight, short-term evolutionary changes within a species.**

After Answer: **Choose the option, Another question (reprompt)**

Reprompt: **If you want, you can ask me another question, for example, questions about evolution**

Example 8

Intent Name: **Macroevolution**

Utterance: **What is macroevolution?**

Alexa will say: **A broad term, which usually refers to the evolution of substantial changes in the lineages of higher taxa.**

After Answer: **Choose the option, Another question (reprompt)**

Reprompt: **If you want, you can ask me another question, for example, questions about evolution**

It is important to note here that, if the tutorial assistant is activated, the developer will be presented with an interactive screen (Figure 18) in which one of the above examples can be inserted randomly (**Example 2 – Example 8**).

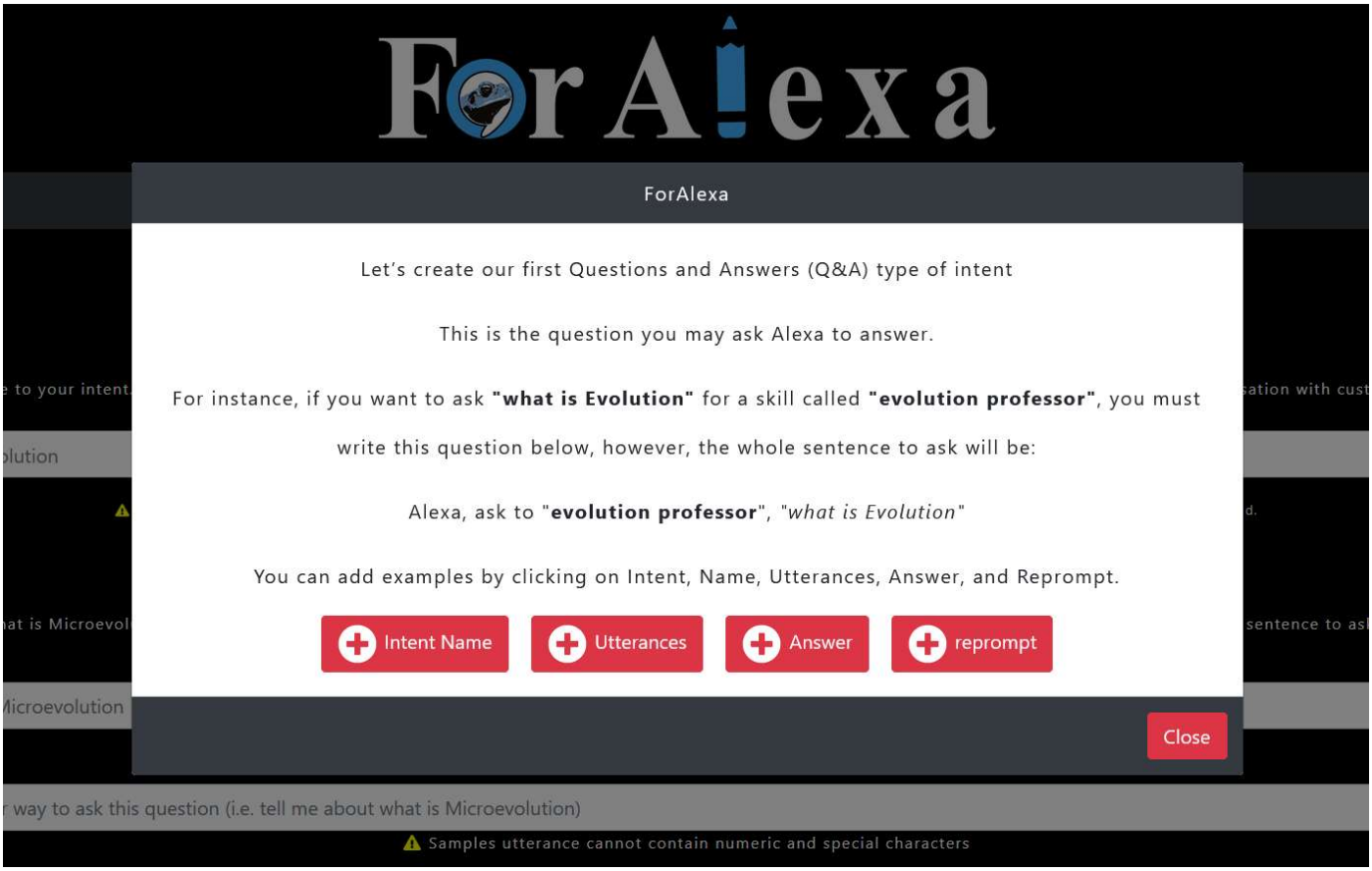

Figure 18. Tutorial assistant helping the developer create an Intent of the Questions and Answers type.

7. Random Quotes

Let's now register intents of the **Random Quotes** type. In the **New Intents** screen (Figure 14), select the **Random Quotes** option. Here, the procedure is the same as the Question-and-Answers (Q&A) form, where the developer must first inform an Intent Name (option 27, Figure 19) as well as an Utterance (option 28, Figure 19).

Figure 19. Random Quotes form.

The only difference here in comparison with the Q&A form is the type of information that Alexa will present once the intent is activated. The field “Customize Introduction” (option 30 da Figure 20) is not required, but allows the developer to personalize the interaction between Alexa and the user. More random quote fields can be added (option 31, Figure 20), and the quotes can subsequently be visualized (option 32, Figure 20) or deleted (option 33, Figure 20).

The developer must determine how many random phrases Alexa will be able to say to the user (option 34, Figure 20). It is important to note here that random quotes may be subject to a certain level of repetition. Where there are five random quotes, for example, the developer can set the system to randomly select three, where some phrases will inevitably be repeated. In this case, the developer will need to either increase the number of random quotes or reduce the number of phrases that are selected. (option 35, Figure 20) shows how many random quotes there are in the intent, which helps the developer design the content.

As in the introductory phrase, the final phrase, spoken after the random quotes, can also be customized (option 36, Figure 20). Once again, this is not required, but as for the introduction, it can amplify the possible interactions between Alexa and the user.

It is important to note that, once an intent is saved (option 37, Figure 20), it cannot be edited further, but only deleted for the creation of a new Intent with the same questions. It is thus vital at this stage that the developer avoids possible errors.

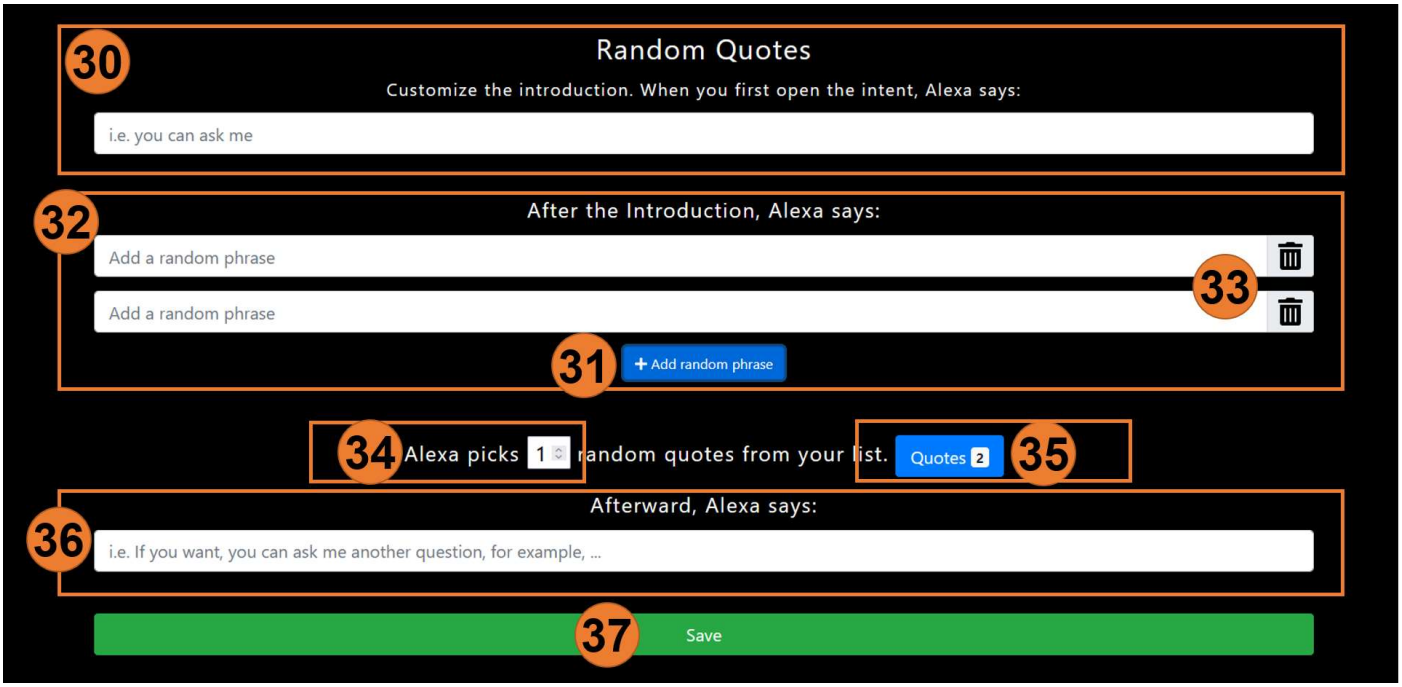

Figure 20. Random Quotes.

7.1. Examples of Random Quotes

Example 9

Intent Name: **QuestionsEvolution**

utterance: **Questions about Evolution**

Introduction: **You can ask me**

Random Quote 1: **What is an allele?**

Random Quote 2: **What is a dominant allele?**

Random Quote 3: **What is a recessive allele?**

Random Quote 4: **What is evolution?**

Random Quote 5: **What is microevolution?**

Random Quote 6: **What is macroevolution?**

Alexa picks: **2**

After, Alexa says: **If you want, you can ask me another question, for example, questions about evolution.**

In the Random Quotes form, we can insert all the utterances registered in the Q&A form (Examples 2–8). In this case, when the user activates this Intent (RQ), Alexa will select randomly two questions (utterances), while informing the user the correct way to ask a question in order to activate a specific Intent. It is important to note here that, once Alexa says the selected phrases, the final phrase, "**If you want, you can ask me another question, for example, questions about evolution**" induces the user to activate the Intent (RQ) once again, which will introduce them to the other phrases that activate the skill. If the tutorial assistant is activated, it will display some of the steps needed for the correct filling in of this form (Figure 21).

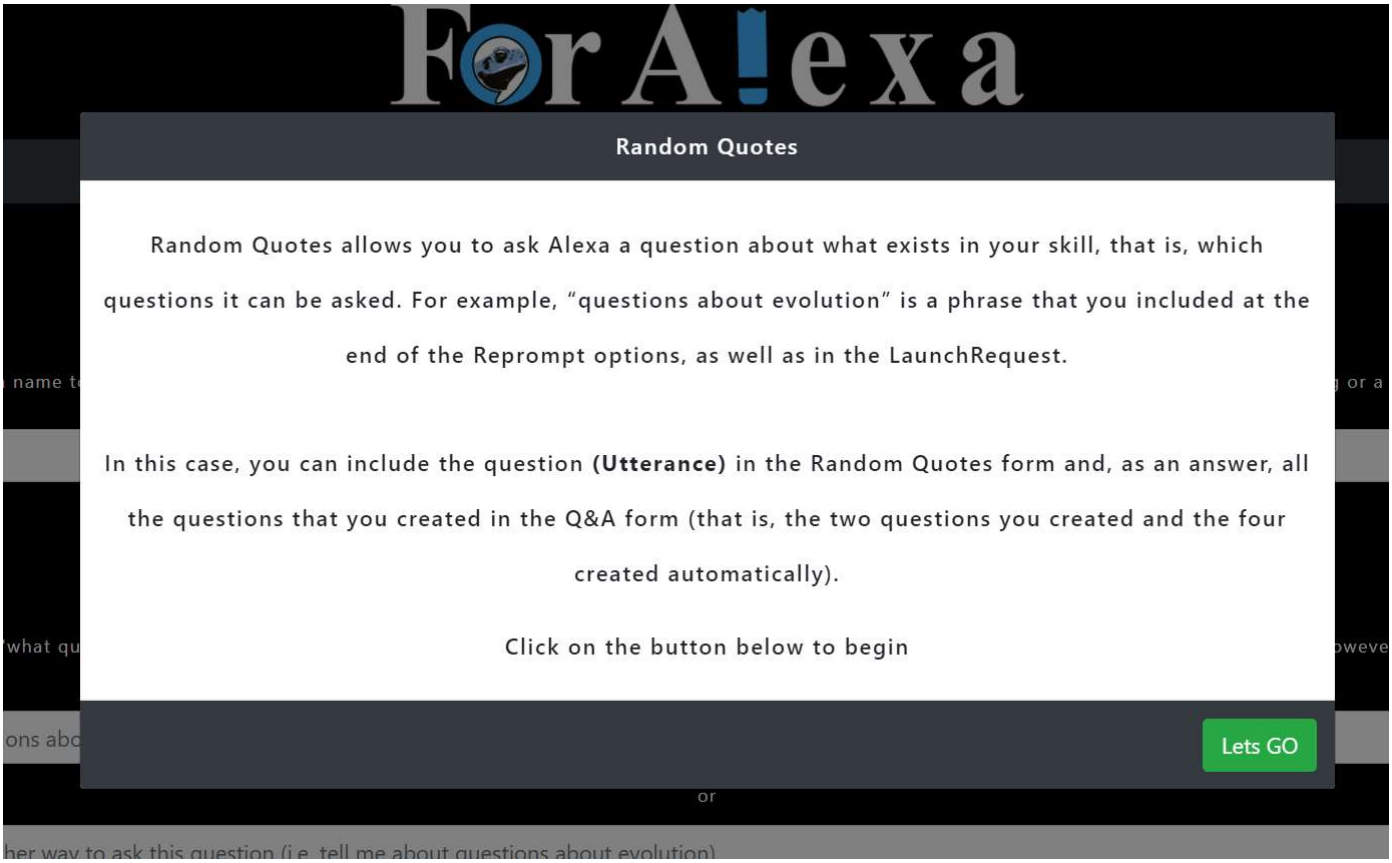

Figure 21. Tutorial assistant helping the developer to create an Intent of the Random Quotes type.

8. Json Files

Once the developer has created all the Intents (Q&A or RQ), they can create a json file containing these Intents, together with the utterances of each Intent (Figure 22). This file should be imported, together with the skill created by the developer, into the Amazon Developer Console (https://developer.amazon.com/alexa/console/) (Figure 23). It is possible to obtain the whole source code of a skill, by clicking on "Alexa Code" (Figure 24), which loads the page of the source code (Figure 25), which the developer can visualize, copy, and paste into the area of development of the Amazon Developer Console. For further details, consult the ForAlexa tutorials page.

Figure 22. Button for the creation of a json file

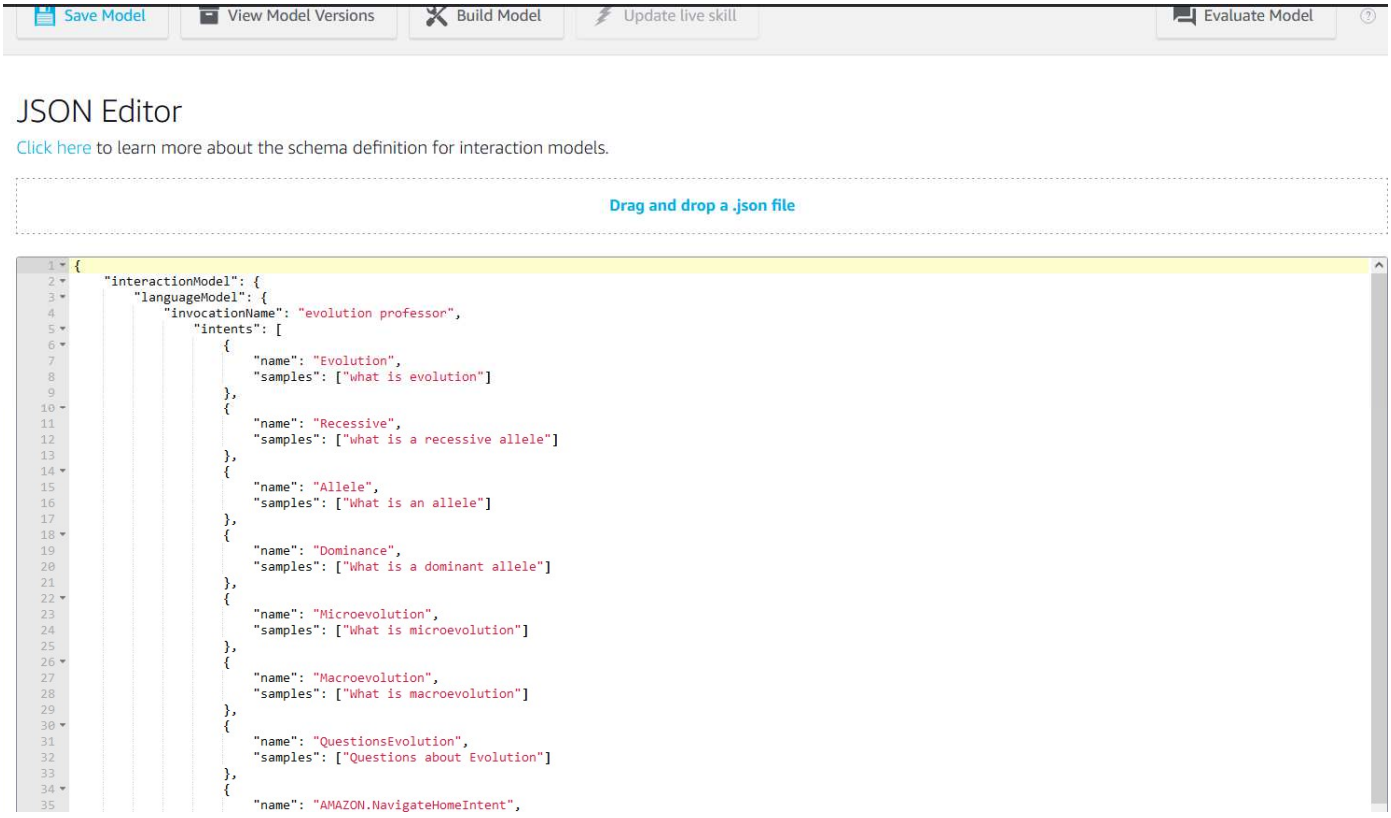

Figure 23. Area for the importation of a json file created in ForAlexa.

Figure 24. Button used to visualize the source code of a skill.

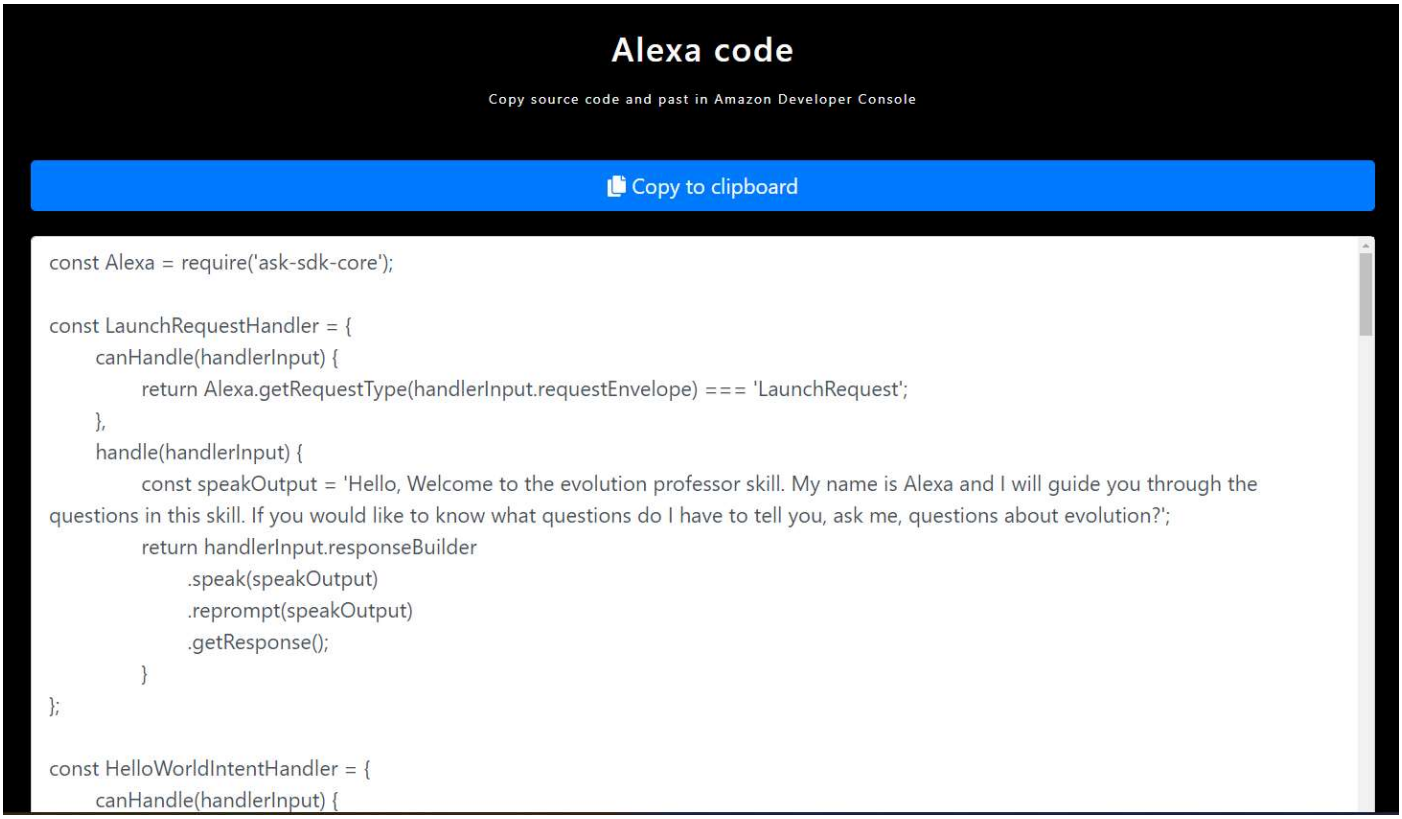

Figure 25. Source code of a skill created in ForAlexa.

9. Navigation menu

ForAlexa has a navigation menu with a number of useful links (Figure 26). The Home link redirects the developer from any other page to the list of repositories. The Tutorial link loads the tutorials page, where the developer can consult video tutorials explaining each step in the creation of a skill. The GitHub link leads to the repository containing the ForAlexa source code. “How to cite” refers to the reference for the ForAlexa paper, and “Donate” will help us to improve and continue the development of ForAlexa, in particular by providing more coffee lol (many thanks for your support!). The Logout is self-explanatory.

Figure 26. ForAlexa navigation menu.