

Manual

For Alexa

Version 1.0

English

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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).

The screenshot shows the ForAlexa login interface. At the top is the 'ForAlexa' logo. Below it is a yellow banner with a tip: 'Tip: You can switch the tutorial Assistant ON or OFF.' The main login area is titled 'Login' and contains an 'Email Address' field (annotated with a '1' in a blue circle), a 'Password' field (annotated with a '2' in a blue circle), and a 'Sign In' button. Below the password field is a toggle switch for the 'Assistant' (annotated with a '2' in a blue circle). At the bottom, there are two links: 'Not a ForAlexa member? Sign up ForAlexa' (annotated with a '3' in a blue circle) and 'Forgot your Password? Reset Password' (annotated with a '4' in a blue circle).

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.

The image shows a registration form titled "New User" on a dark background. It contains the following fields and elements:

- First Name:** A text input field with a person icon on the left.
- Last Name:** A text input field with a person icon on the left.
- Institution:** A text input field with a building icon on the left.
- Birthday:** A text input field with a birthday cake icon on the left, a placeholder "dd/mm/aaaa", and a calendar icon on the right.
- Email address:** A text input field with an "@" symbol icon on the left.
- Password:** A text input field with a key icon on the left and an eye icon on the right for toggling visibility.
- Sign Up ForAlexa:** A large blue button at the bottom of the form.

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).

For Alexa


Reset Password

5

First Name




Last Name



Birthday

 dd/mm/aaaa 

Email address



6

Figure 3. Password Recovery.

ForAlexa

Update Password

First Name

Last Name

Institution

Birthday

Email address

7 New Password

8 Update Password

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.**

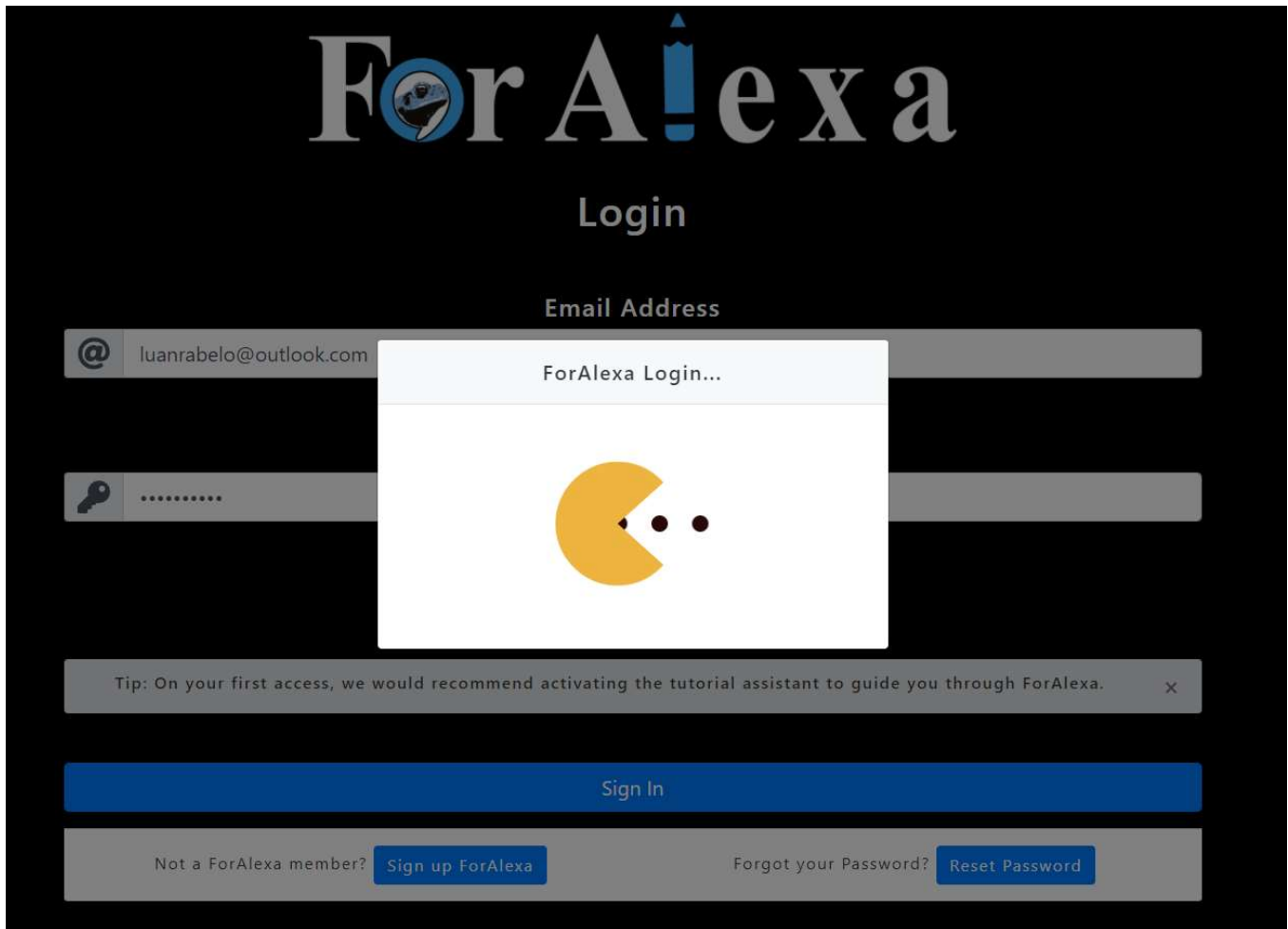


Figure 5. ForAlexa consulting the database.

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).

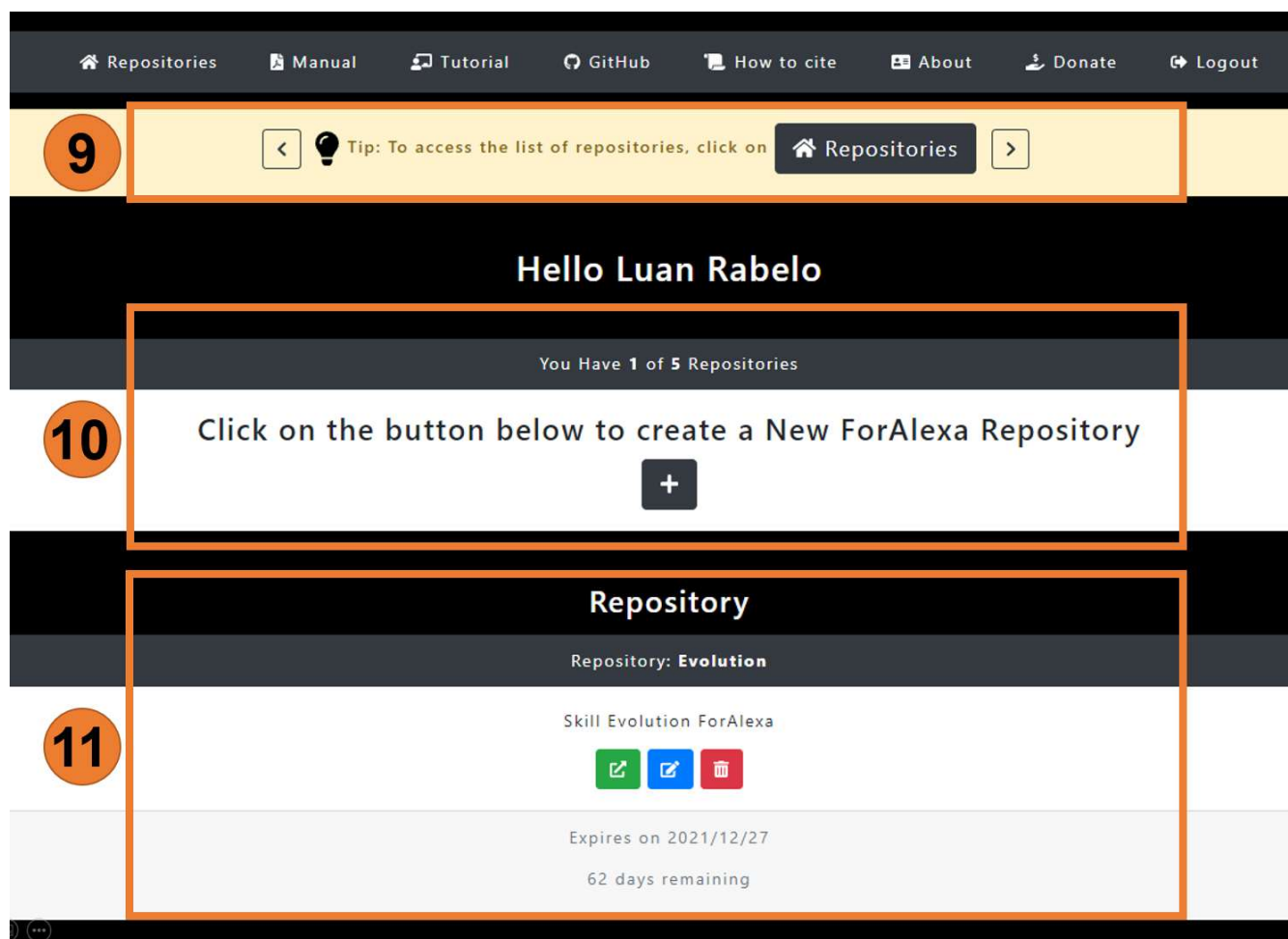


Figure 6. Repository Page and the List of Repositories (option 11). A developer can create up to five repositories, which are valid for 90 days.

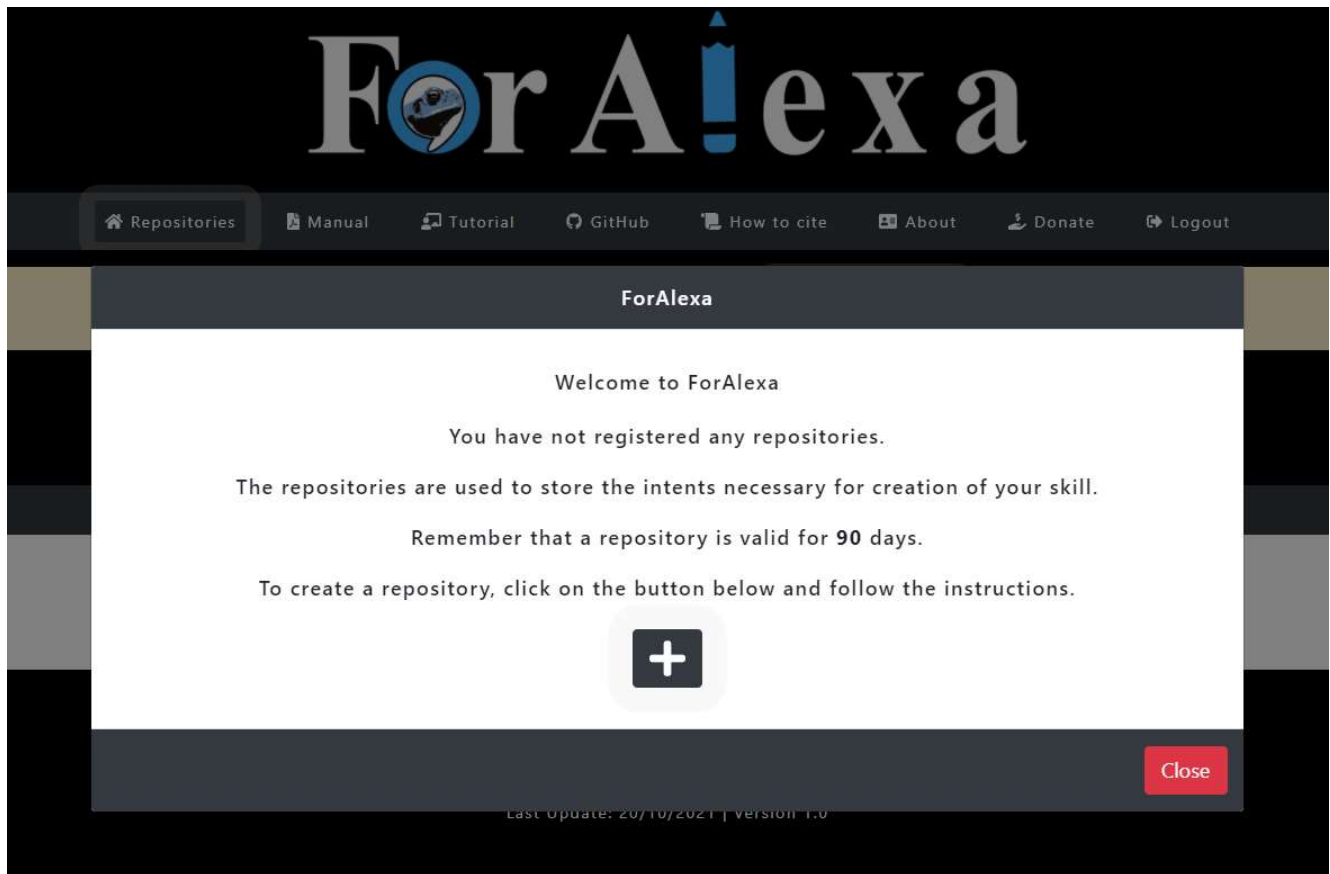


Figure 7. Tips for the creation of repositories in ForAlexa.

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.

The screenshot shows a 'New Repository' form with the following elements and numbered callouts:

- 12**: Repository Name input field containing 'i.e. Evolution Skill'.
- 13**: Description input field containing 'i.e. Evolution Skill created for the Evolution discipline.'.
- 14**: Terms and conditions section with text: 'Each user can create up to 5 repositories on the ForAlexa server. Each repository is available on the ForAlexa server for a maximum of 90 days. After 90 days, the repository is deleted automatically.' and a checkbox labeled 'I accept the terms'.
- 15**: Green 'Create Repository' button.

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.

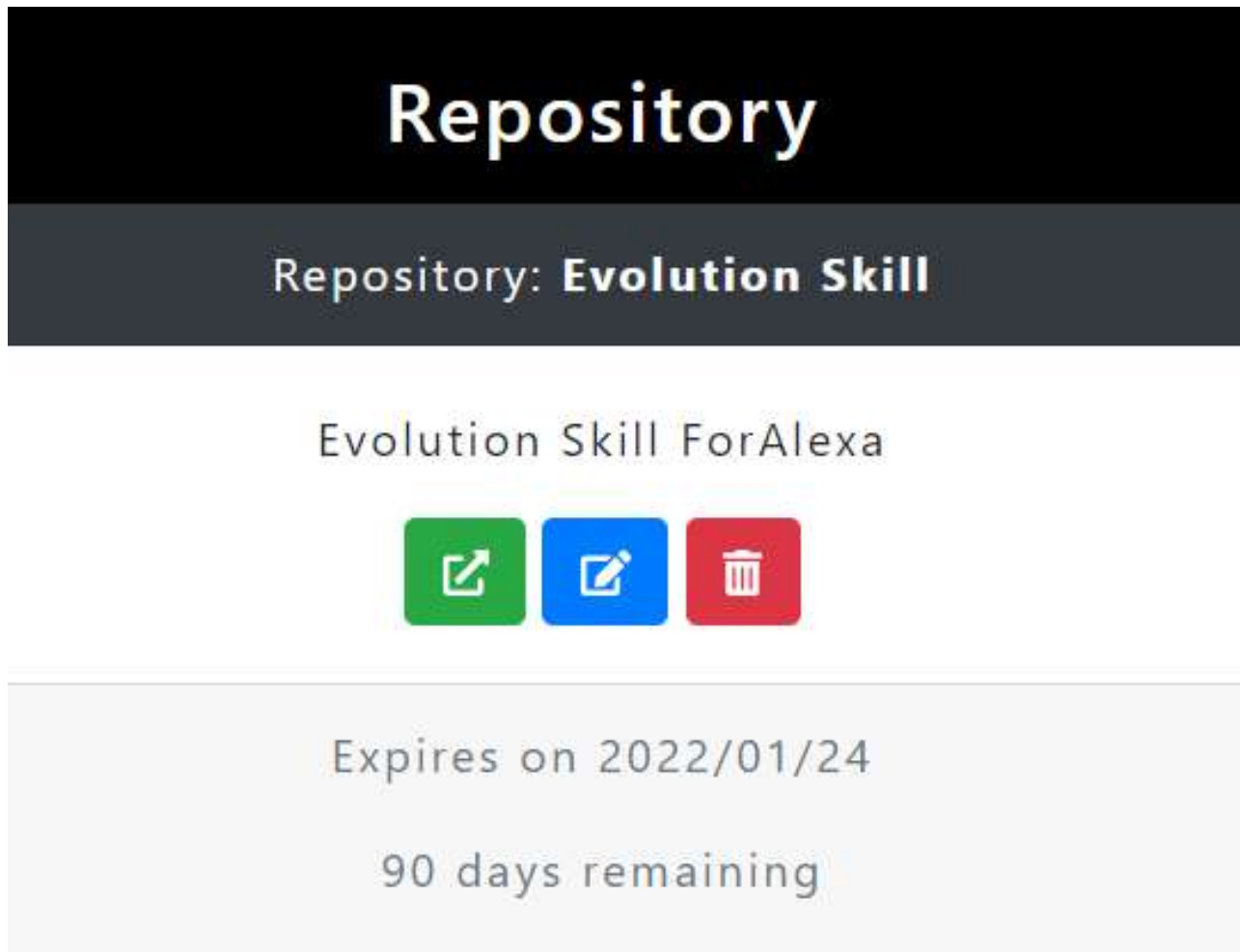


Figure 9. Options for accessing, editing or excluding a repository.

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.

For Alexa

- Repositories
- Manual
- Tutorial
- GitHub
- How to cite
- About
- Donate
- Logout

You have **9** Intents registered

☐ Assistant OFF

Intent name	Status	Type	Sample Utterances	Answer	After	Options
LaunchRequest		Required			—	
HelpIntent		Required			—	
CancelAndStopIntent		Required			—	
FallbackIntent		Required			—	
IntentReflector		Required			—	
Error		Required			—	
HelloWorldIntent		Required			—	
AMAZON.YesIntent		Required			—	
AMAZON.NoIntent		Required			—	

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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?**”.

For Alexa

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Launch Request

Intent Name

You must give a name to your intent. Intents represent actions that users can do with skill. These intents represent the core functionality of skill. It is a dialog or a conversation with customers in which Alexa asks questions and the user responds with the answers.

LaunchRequest

Note that Intent name can only contain case-insensitive alphabetic characters and underscores. Numbers, spaces, or other special characters are not allowed.

19 Skill Invocation Name

Users say a skill's invocation name to begin an interaction with a particular custom skill. For example, if the invocation name is "evolution professor", users can say: *Alexa, open evolution professor*

evolution professor

Brand names are only allowed if you provide proof of rights in the testing instructions or if you use the brand name in a referential manner that doesn't imply ownership (examples of terms that can be added to a brand name for referential usage: unofficial, unauthorized, fan, fandom, for, about).

20

If you say: "Alexa, open **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 do I have to tell you, ask me, questions about evolution?

Do not use line break

21

Update Intent

Last Update: 20/10/2021 | Version 1.0

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).

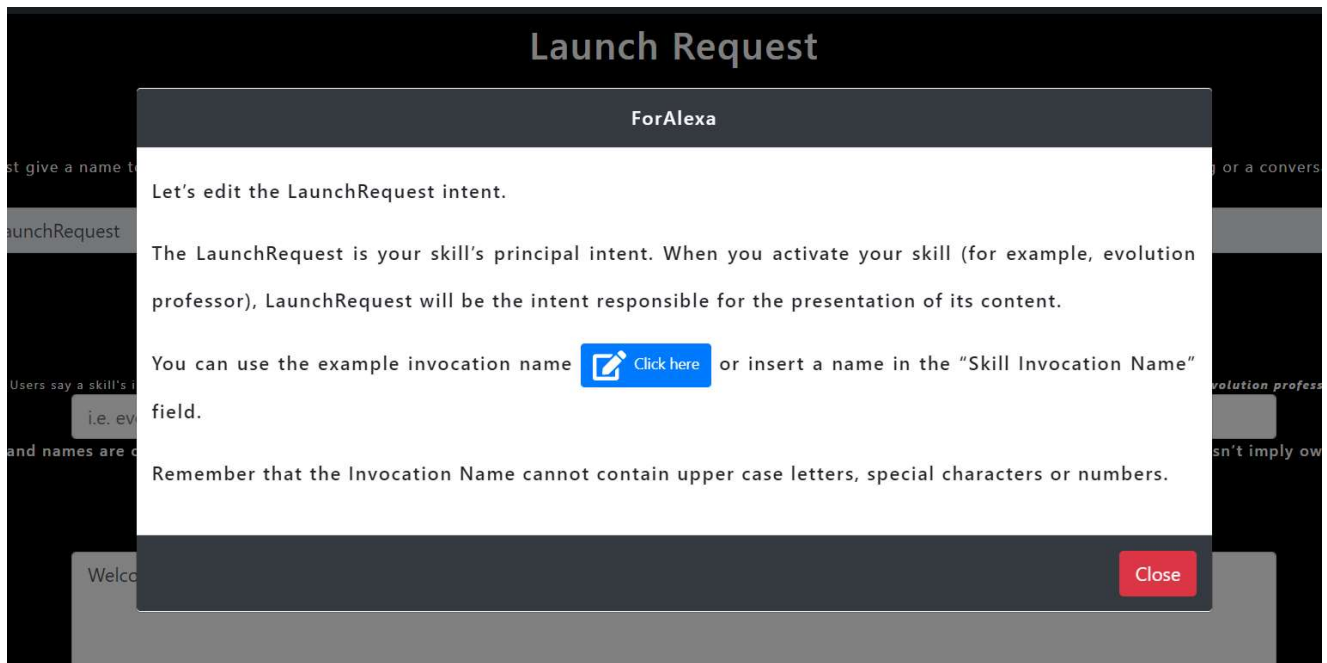


Figure 13. Tutorial assistant helping the developer to edit the LaunchRequest.

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"**.

ForAlexa

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Questions and Answers

22

Intent Name

You must give a name to your intent. Intents represent actions that users can do with skill. These intents represent the core functionality of skill. It is a dialog or a conversation with customers in which Alexa asks questions and the user responds with the answers.

i.e. Macroevolution

⚠ For instance, "Macroevolution" or click in to add a Random Intent Name

⚠ Note that Intent name can only contain case-insensitive alphabetic characters and underscores. Numbers, spaces, or other special characters are not allowed.

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Utterance

want to ask "what is Macroevolution" (utterance) for a skill called **"evolution professor"** (Invocation Name), you must write this question below, however, the whole sentence to ask will be: Alexa, ask to **"evolution professor"**, *what is Macroevolution?*

i.e. what is Macroevolution

or

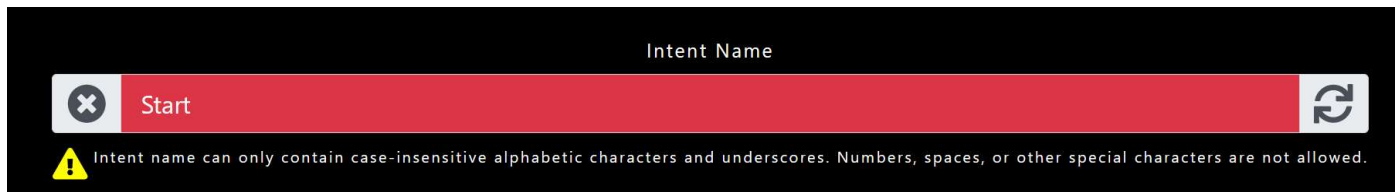
Add another way to ask this question (i.e. tell me about what is Macroevolution)

⚠ Samples utterance cannot contain numeric and special characters

24 + Add another way to ask this question

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).



Intent Name

Start

! Intent name can only contain case-insensitive alphabetic characters and underscores. Numbers, spaces, or other special characters are not allowed.

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).

25 If you say: "Alexa, ask to **evolution professor**, *what is an allele?*", Alexa will say:

One of several forms of the same gene, presumably differing by mutation of the DNA sequence.

⚠ Do not use line break

26 **After Answer**

There are two options, Finish and Reprompt. Finish ends the Intent, while use Reprompt if you want that Alexa asks if you want to continue the interaction.

Another Question (reprompt) ▼

reprompt

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

Save

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**).

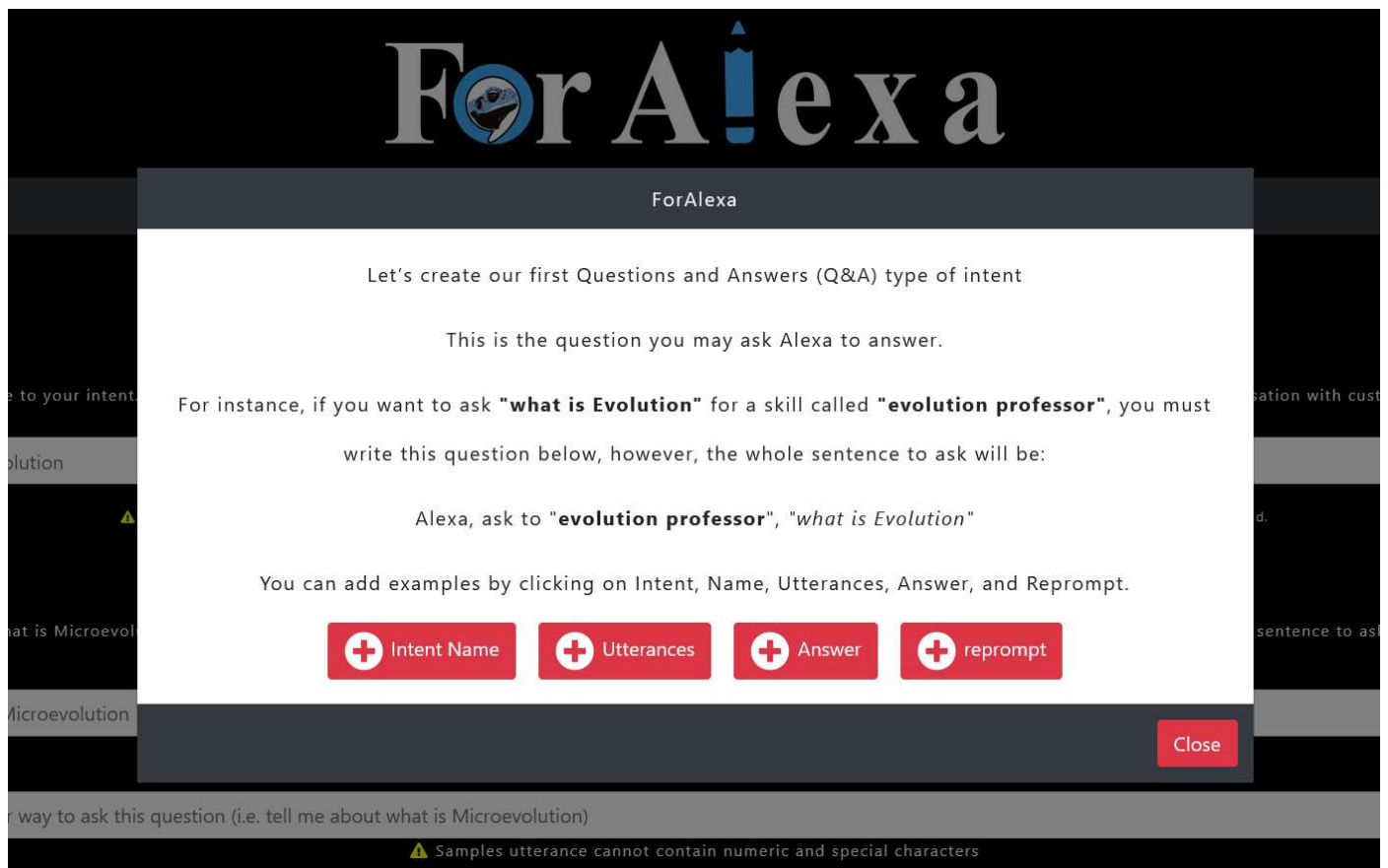


Figure 18. Tutorial assistant helping the developer create an Intent of the Questions and Answers type.

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).

Random Quotes

27 Intent Name

You must give a name to your intent. Intents represent actions that users can do with skill. These intents represent the core functionality of skill. It is a dialog or a conversation with customers in which Alexa asks questions and the user responds with the answers.

i.e. RandomEvolution

⚠ Note that Intent name can only contain case-insensitive alphabetic characters and underscores. Numbers, spaces, or other special characters are not allowed.
⚠ This Intent Name cannot be changed.

28 Utterance

If you want to ask "what questions on chapter one" (utterance) for a skill called **"evolution professor"** (Invocation Name), you must write this question below, however, the whole sentence to ask will be: Alexa, ask to **"evolution professor"**, *what questions on chapter one?*

i.e. questions about evolution

or

Add another way to ask this question (i.e. tell me about questions about evolution)

⚠ Samples utterance cannot contain numeric and special characters

29 + Add another way to ask this question

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.

The screenshot displays the 'Random Quotes' configuration screen. It features several input fields and buttons, each highlighted with a numbered orange circle:

- 30**: Title 'Random Quotes' and instruction 'Customize the introduction. When you first open the intent, Alexa says:'.
- 32**: Introduction text input field containing 'i.e. you can ask me'.
- 31**: Section header 'After the Introduction, Alexa says:'.
- 32**: List of random phrases, each with a 'Add a random phrase' button and a delete icon.
- 33**: A specific 'Add a random phrase' button.
- 34**: Text 'Alexa picks 1 random quotes from your list.' with a dropdown menu.
- 35**: Text 'Quotes 2' with a dropdown menu.
- 36**: Text 'Afterward, Alexa says:' and a corresponding input field containing 'i.e. If you want, you can ask me another question, for example, ...'.
- 37**: A large green 'Save' button at the bottom.

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).

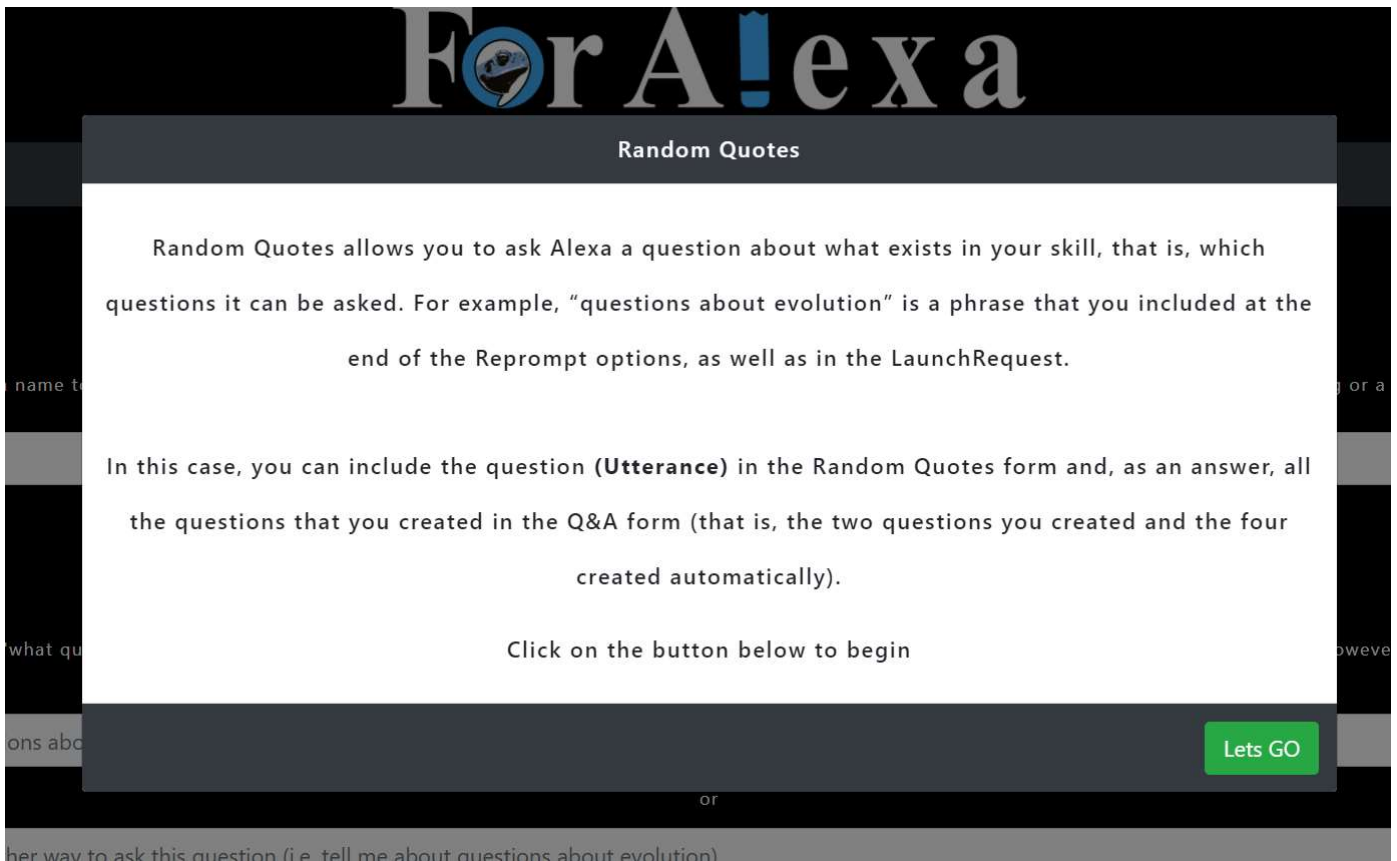


Figure 21. Tutorial assistant helping the developer to create an Intent of the Random Quotes type.

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

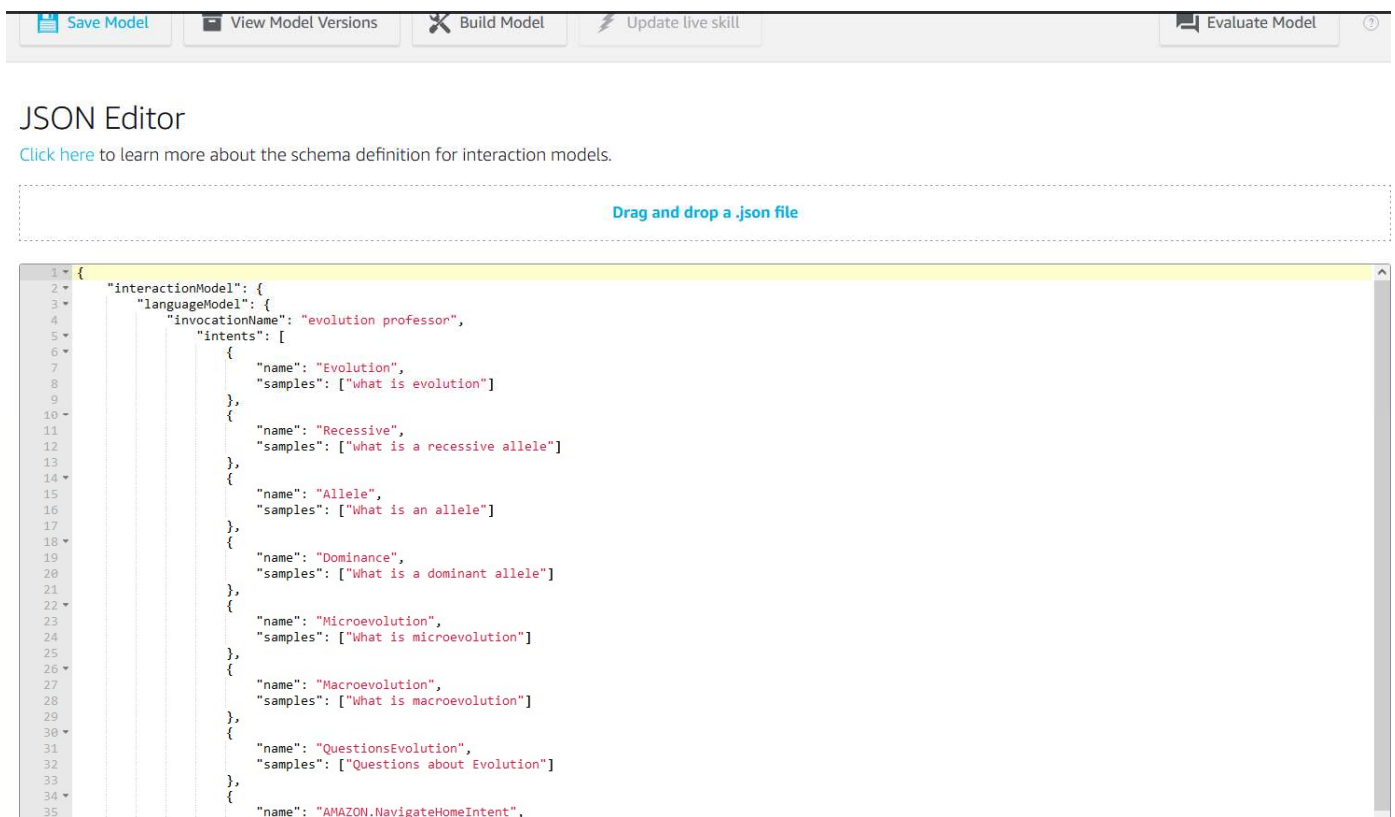


Figure 23. Area for the importation of a json file created in ForAlexa.

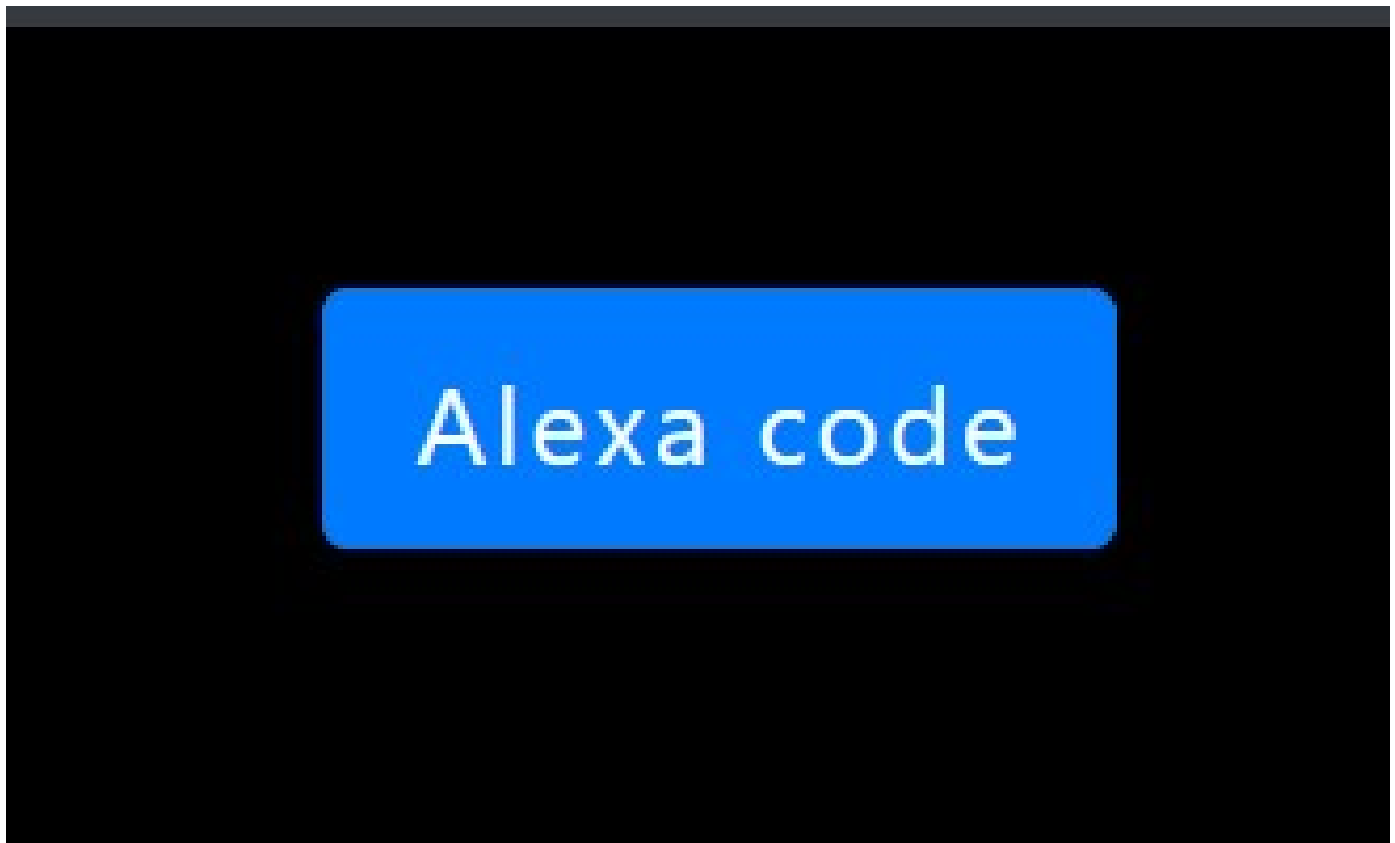


Figure 24. Button used to visualize the source code of a skill.

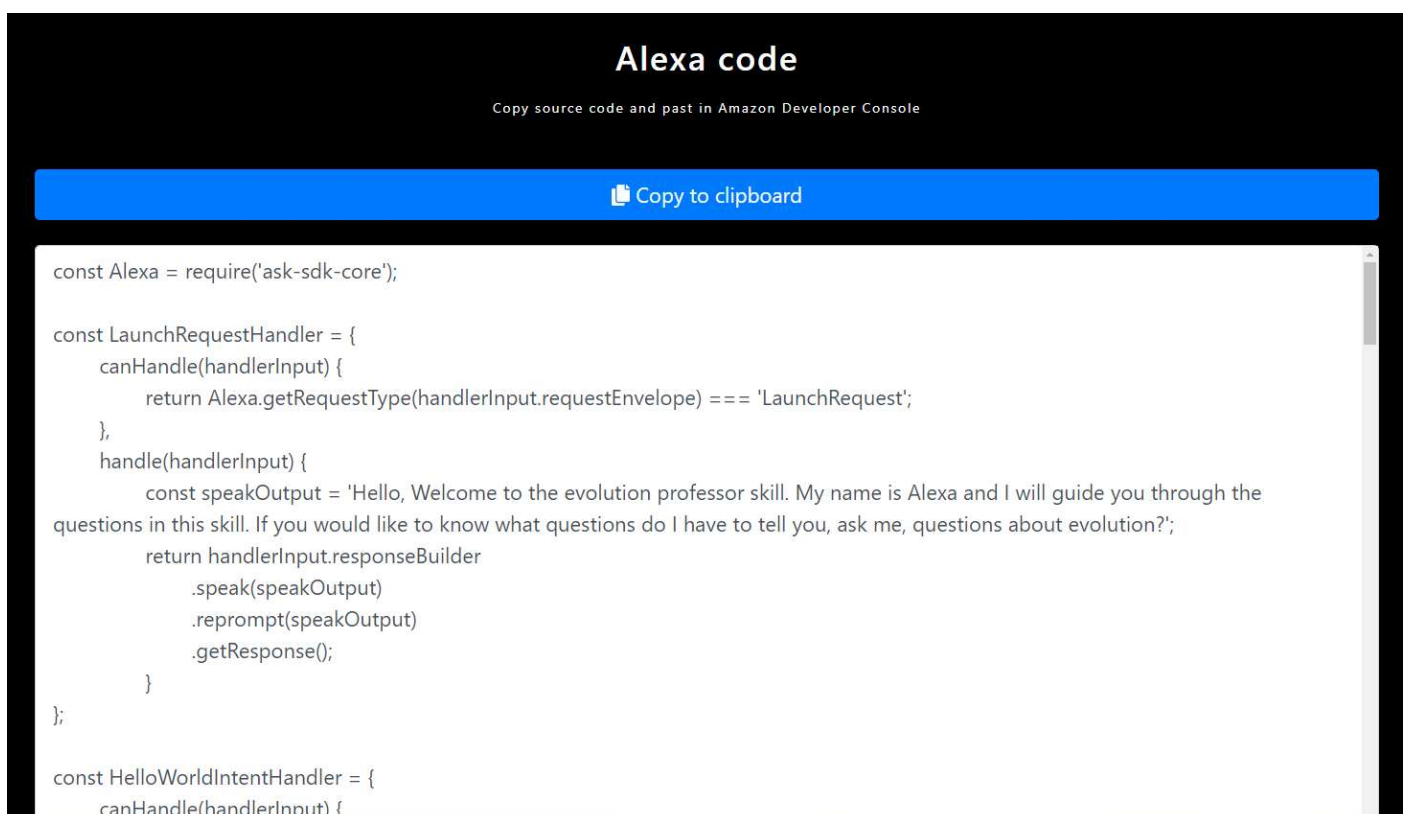


Figure 25. Source code of a skill created in ForAlexa.

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.

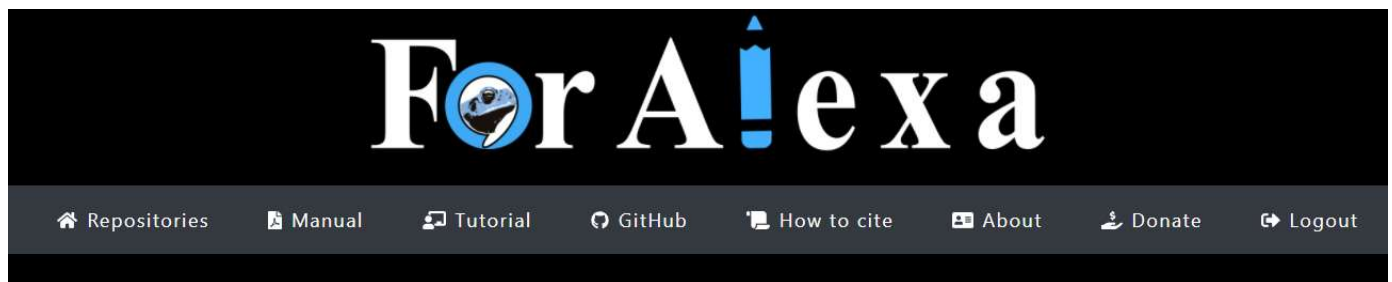


Figure 26. ForAlexa navigation menu.