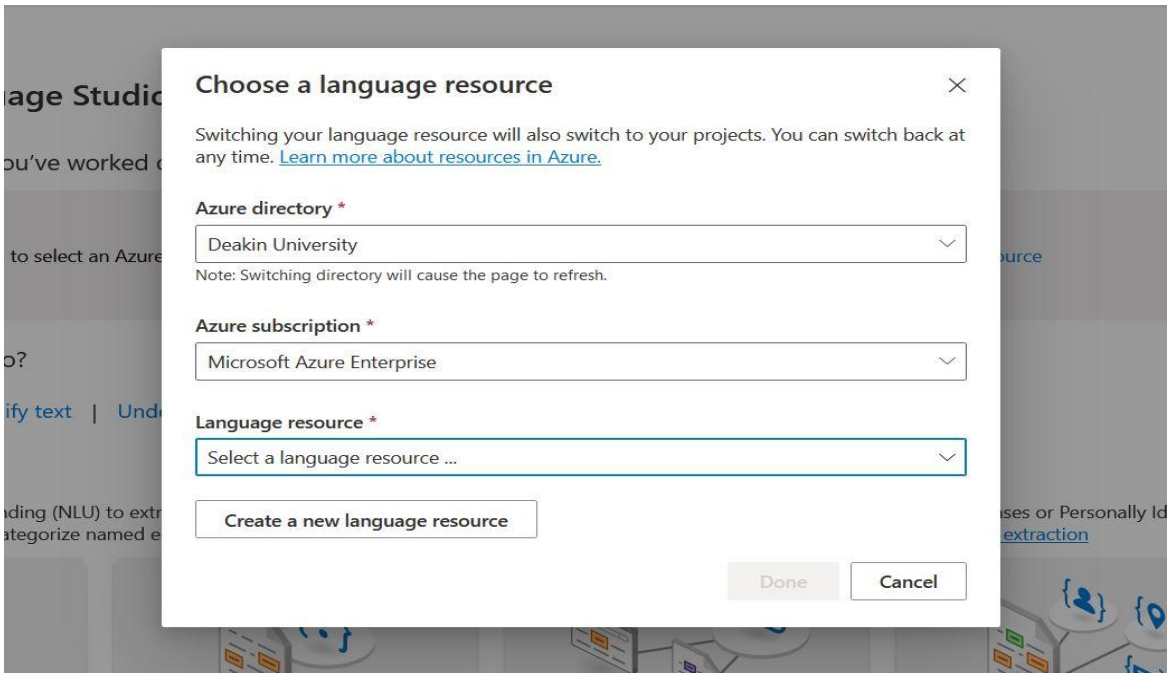
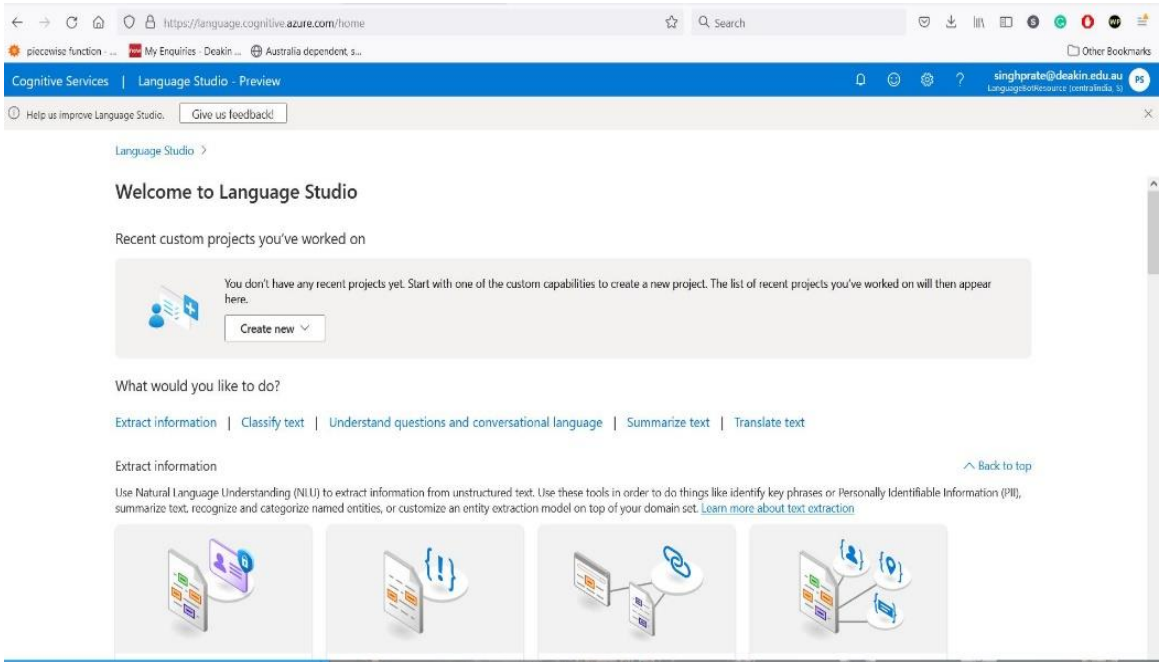
SIT 788

Assignment 6.1: LUIS and QnA Maker

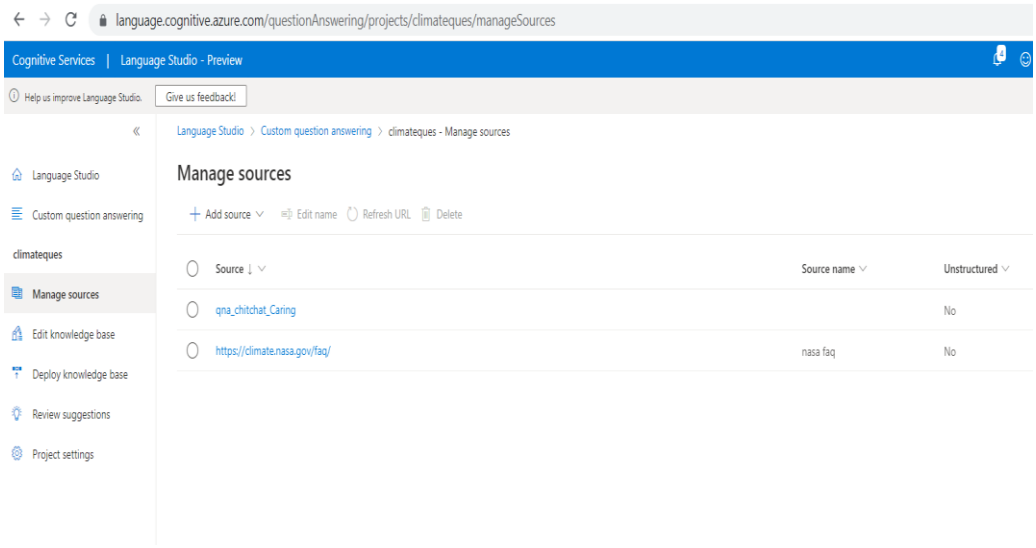
Step 1: To create a custom QnA Bot we first need to create a language resource:



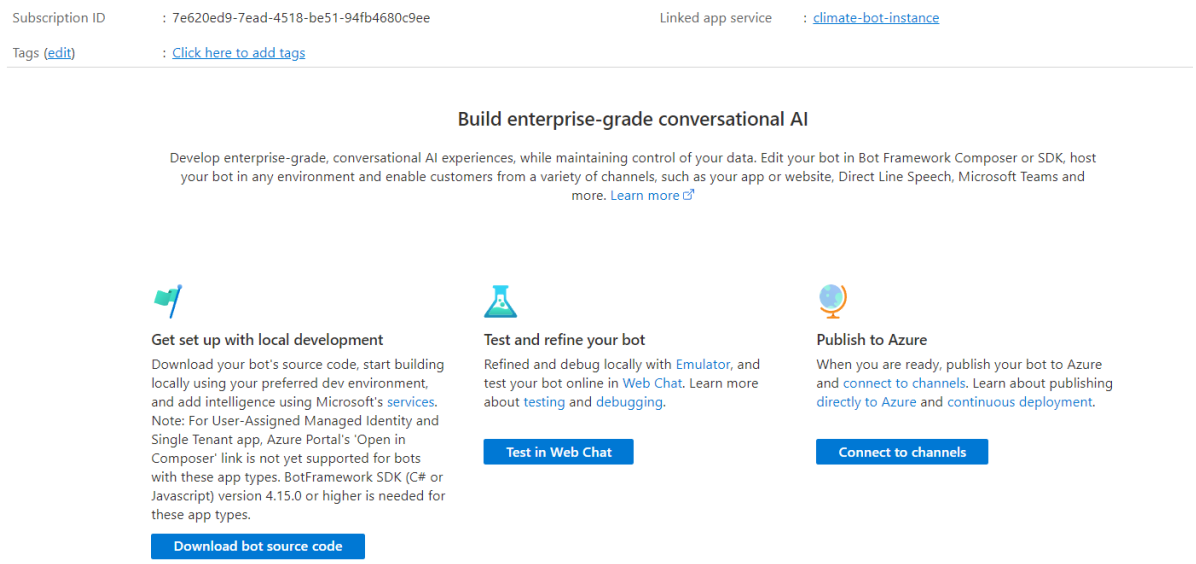
Step 2: Once the language resource is created, we link Azure Language Studio with the created language resource:



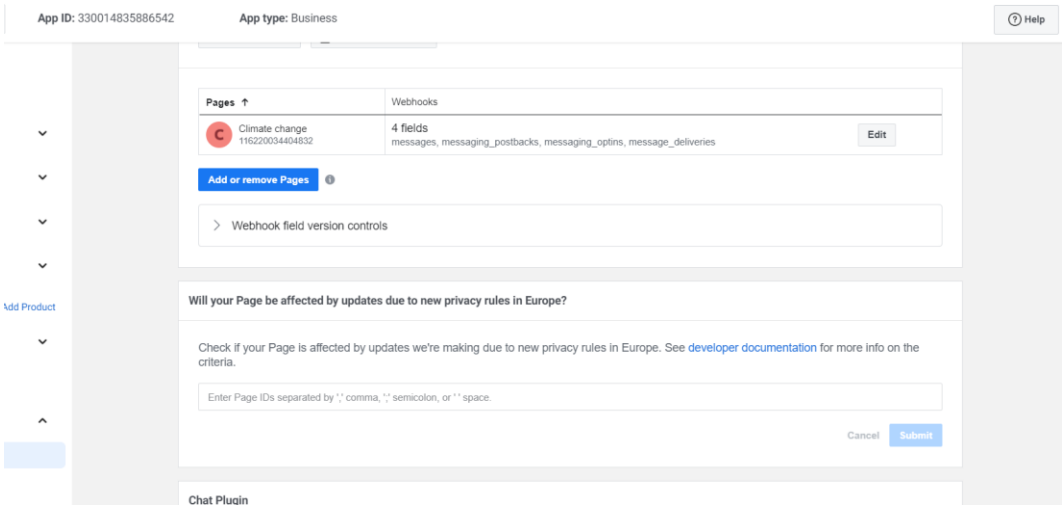
Step 3: In the Language Studio we create a new project for custom QnA Bot. To this project we add knowledge base for the bot to use. As this is a bot that answers questions related to climate change we add question bank from [1]:



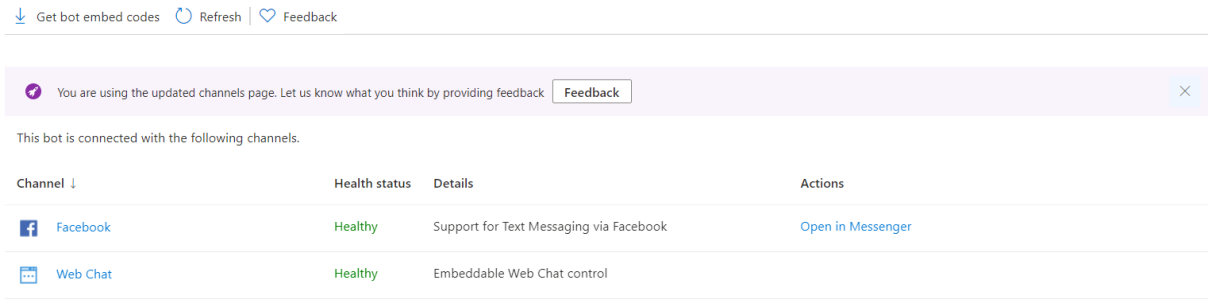
Step 4: Then deploy this knowledge base and create the bot. The following picture shows the published bot:



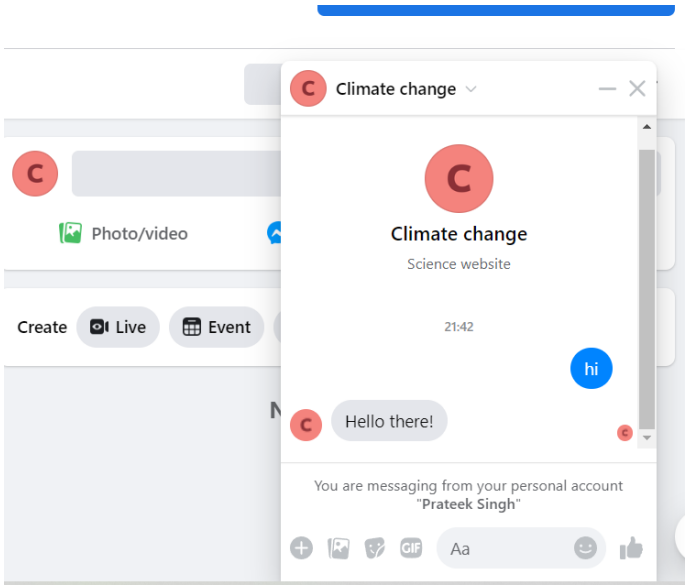
Step 5: Once the bot is published, it is linked to the FB page using channels section. Use the Meta for developers to connect the bot to the FB page:



After publishing we can see the bot is active on the FB page as well as the Testing Web Chat channel:



We can interact with our bot in real time on the FB page:



Step 6: To test the deployed bot with Azure SDK, first the dependencies must be installed:

In [1]:
```
!pip install azure-ai-language-questionanswering
```

```
Requirement already satisfied: azure-ai-language-questionanswering in c:\users\singh\anaconda3\lib\site-packages (1.0.0)
Requirement already satisfied: msrest>=0.6.21 in c:\users\singh\anaconda3\lib\site-packages (from azure-ai-language-questionans
wering) (0.6.21)
Requirement already satisfied: azure-core<2.0.0,>=1.19.1 in c:\users\singh\anaconda3\lib\site-packages (from azure-ai-language-
questionanswering) (1.21.1)
Requirement already satisfied: requests>=2.18.4 in c:\users\singh\anaconda3\lib\site-packages (from azure-core<2.0.0,>=1.19.1->
azure-ai-language-questionanswering) (2.25.1)
Requirement already satisfied: six>=1.11.0 in c:\users\singh\anaconda3\lib\site-packages (from azure-core<2.0.0,>=1.19.1->azure
-ai-language-questionanswering) (1.15.0)
Requirement already satisfied: requests-oauthlib>=0.5.0 in c:\users\singh\anaconda3\lib\site-packages (from msrest>=0.6.21->azu
re-ai-language-questionanswering) (1.3.1)
Requirement already satisfied: isodate>=0.6.0 in c:\users\singh\anaconda3\lib\site-packages (from msrest>=0.6.21->azure-ai-lang
uage-questionanswering) (0.6.1)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\singh\anaconda3\lib\site-packages (from msrest>=0.6.21->azure-ai-
language-questionanswering) (2020.12.5)
Requirement already satisfied: chardet<5,>=3.0.2 in c:\users\singh\anaconda3\lib\site-packages (from requests>=2.18.4->azure-co
re<2.0.0,>=1.19.1->azure-ai-language-questionanswering) (4.0.0)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\singh\anaconda3\lib\site-packages (from requests>=2.18.4->azur
e-core<2.0.0,>=1.19.1->azure-ai-language-questionanswering) (1.26.4)
Requirement already satisfied: idna<3,>=2.5 in c:\users\singh\anaconda3\lib\site-packages (from requests>=2.18.4->azure-core<2.
0.0,>=1.19.1->azure-ai-language-questionanswering) (2.10)
Requirement already satisfied: oauthlib>=3.0.0 in c:\users\singh\anaconda3\lib\site-packages (from requests-oauthlib>=0.5.0->ms
rest>=0.6.21->azure-ai-language-questionanswering) (3.2.0)
```

Step 7: After that, the required libraries are imported and connected with the Question Answering Client:

In [2]:
```
from azure.core.credentials import AzureKeyCredential
from azure.ai.language.questionanswering import QuestionAnsweringClient
```

In [3]:
```
#connect with created resource using endpoint and secret key
endpoint = "https://westus2.api.cognitive.microsoft.com/"
key_cred = AzureKeyCredential("2ed59c25a82542c78db18f0a5a2d0485")
_project_name = "climateques"
client = QuestionAnsweringClient(endpoint, key_cred)
```

Step 8: The bot can be tested using sample questions, the confidence level for the questions which are difficult are significantly low than those of easy ones.

In [4]:
```
sample_questions = ["What is global warming",
                    "Is Sun causing global warming?",
                    "How do we tackle climate change"]
for ques in sample_questions:
    bot_output = client.get_answers(question = ques,
                   project_name = _project_name,
                   deployment_name = "production")

    for answer_ele in bot_output.answers:
        print ("Question: {}".format(ques))
        print ("Ans: {}".format(answer_ele.answer))
        print ("Conf: {}".format(answer_ele.confidence))
        print("_____________________________")
```

```
Question: What is global warming
Ans: “Global warming” refers to the long-term warming of the planet. “Climate change” encompasses global warming, but refers to
the broader range of changes that are happening to our planet, including rising sea levels; shrinking mountain glaciers; accele
rating ice melt in Greenland, Antarctica and the Arctic; and shifts in flower/plant blooming times.
[detailed answer](https://climate.nasa.gov/faq/12)
Conf: 0.7513
_____________________________
Question: Is Sun causing global warming?
Ans: No. The Sun can influence Earth’s climate, but it isn’t responsible for the warming trend we’ve seen in recent decades.
[detailed answer](https://climate.nasa.gov/faq/14)
Conf: 0.98
_____________________________
Question: How do we tackle climate change
Ans: Major climate research organizations worldwide have developed mathematically rigorous, peer-reviewed data-processing metho
ds to identify and compensate for changes in observing conditions.
[detailed answer](https://climate.nasa.gov/faq/38)
Conf: 0.4743
_____________________________
```

References

[1] https://climate.nasa.gov/faq/