Rafał Gosiewski

WeatherBot

Chatbot for Messenger

This document is short documentation for the final project of course
SINF – Soluciones TI para sector informediario
at UPV - Universidad Politecnica de Valencia
during my Erasmus studies.

Table of contents

Description

This project was created as an introduction to chatbots technology, and at the same time is to be used as a quick help during the conversation. The main design assumption is to create a tool that can be found in the field of public data, or so-called open data. I decided within this sector to create a tool based on already existing on the network and published data that can be used using the shared API.

Chatbot, which I created, is designed to help the user find events taking place in his current location and inform him about the weather in the context of his own weather preferences. In addition, the assumption was to create a tool to recommend nearby events based on weather preferences in the context of weather forecast. Unfortunately, the latter has not been implemented in the end due to lack of time and other tasks.

The Messenger platform was chosen as a response to the offers of future projects, so I wanted to make the most of the opportunity and learn new things that might come in handy in the future.

How to use

By Messenger:

1. The first thing you cannot do without is to set up an account for Messenger. Importantly, you can do it without creating an account directly on the Facebook platform.

   Go to https://www.messenger.com/ and create account following all instructions.

2. When you have active account then search for **WeatherBotUPV** or go directly to the https://www.messenger.com/t/WeatherBotUPV address.

3. Your conversation starts after confirmation.

By Facebook:

1. When you have account on Facebook platform you can look for the page **WeatherBotUPV** or go directly to the page https://www.facebook.com/WeatherBotUPV/
2. Choose option **Use application (***Użyj aplikacji **–** on the screen) which is the main button below the header.

Funcionalities

User preferences

Each user at the beginning, right after the welcome message, is asked for configuration his profile, which means to share his location (or send the one which he want to follow) and response for 5 short questions about his comfort temperate, wind, rain and sun conditions.

After that chatbot allows him to see the main menu with all other functionalities. One of them is also changing actual preferences and user can choose, which one he wants to modified.

Weather forecast

Second functionality is to see forecast for next 24 hours or for the next day (next 24 to 48 hours). After printing the weather forecast in 3 hours intervals, chatbot based on the user preferences informs the users about special conditions – for example if a user doesn't like temperature below 15 degrees, chatbot will warn, that during next hours might be colder that user likes.

Time: 2018-04-21 15:00:00
    General: Clear
    Temparature: 21.29
    Wind speed: 1.56
    Cloudiness: 0
    Humidity: 52

Time: 2018-04-21 18:00:00
    General: Clear
    Temparature: 16.4
    Wind speed: 1.12
    Cloudiness: 0
    Humidity: 68

Time: 2018-04-21 21:00:00
    General: Clear
    Temparature: 11.64
    Wind speed: 1.21
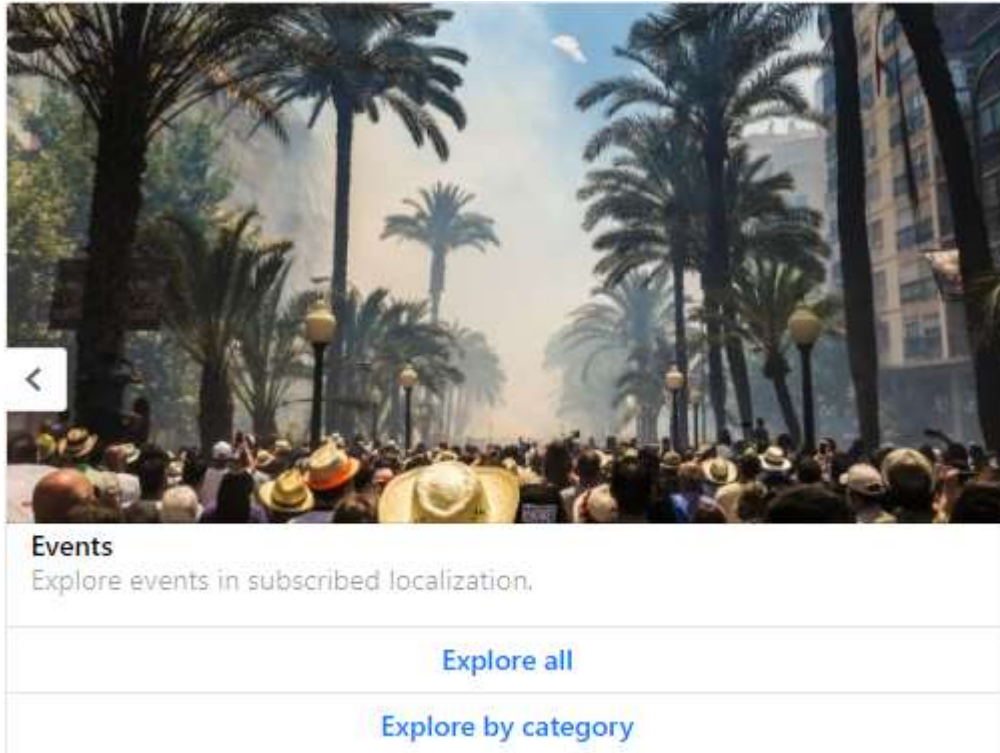   Cloudiness: 0
    Humidity: 81

During that day:
    - the temperature might be lower that you normally prefere,
    - will be sunny

That's all.

Events nearby

Chatbot can also based on the set localization, search for 10 nearest events which take there. The list is not ordered, so it means, that it prints all registered events for that localization (even if they take place in 2 months later).

Please, be patient - i am searching for nearest events.

Title: Ara Malikian en Valencia. The Incredible World Tour of Violin

Date:
Start: 2018-06-02 22:00:00
End: 2018-06-03 00:30:00

Source: https://www.eventbrite.es/e/entradas-ara-malikian-en-valencia-the-incredible-world-tour-of-violin-42533329333?aff=ebapi

Title: Emma Trilles presenta "Todas las historias acaban hablando de amor"

Date:
Start: 2018-04-20 19:00:00
End: 2018-04-20 22:00:00

Source: https://www.eventbrite.es/e/entradas-emma-trilles-presenta-todas-las-historias-acaban-hablando-de-amor-45006142584?aff=ebapi

Title: El Dragón Dorado

Date:
Start: 2018-04-26 18:00:00
End: 2018-04-26 20:00:00

Source: https://www.eventbrite.es/e/entradas-el-dragon-dorado-45001581943?aff=ebapi

Title: Meetmobile AI & ML - Inteligencia Artificial y Machine Learning

Date:
Start: 2018-04-26 19:00:00
End: 2018-04-26 20:30:00

Source: https://www.eventbrite.es/e/entradas-meetmobile-ai-ml-inteligencia-artificial-y-machine-learning-44831280567?aff=ebapi

Based on the information, user can go directly to the page of each event at Eventbrite service.

Events by category

In the last functionality which is implemented user can choose one from 21 categories of events, and then based on his localization chatbot show the list of 10 events from that category.

Please, be patient - i am searching.

Title: Clausura de Akademia en la Universidad Politécnica de Valencia

Date:
    Start: 2018-05-24 12:00:00
    End: 2018-05-24 14:00:00

Source: https://www.eventbrite.es/e/entradas-clausura-de-akademia-en-la-universidad-politecnica-de-valencia-45023616850?aff=ebapi

Title: Taller Vivencial La Ultima Batalla

Date:
    Start: 2018-05-11 18:00:00
    End: 2018-05-12 18:00:00

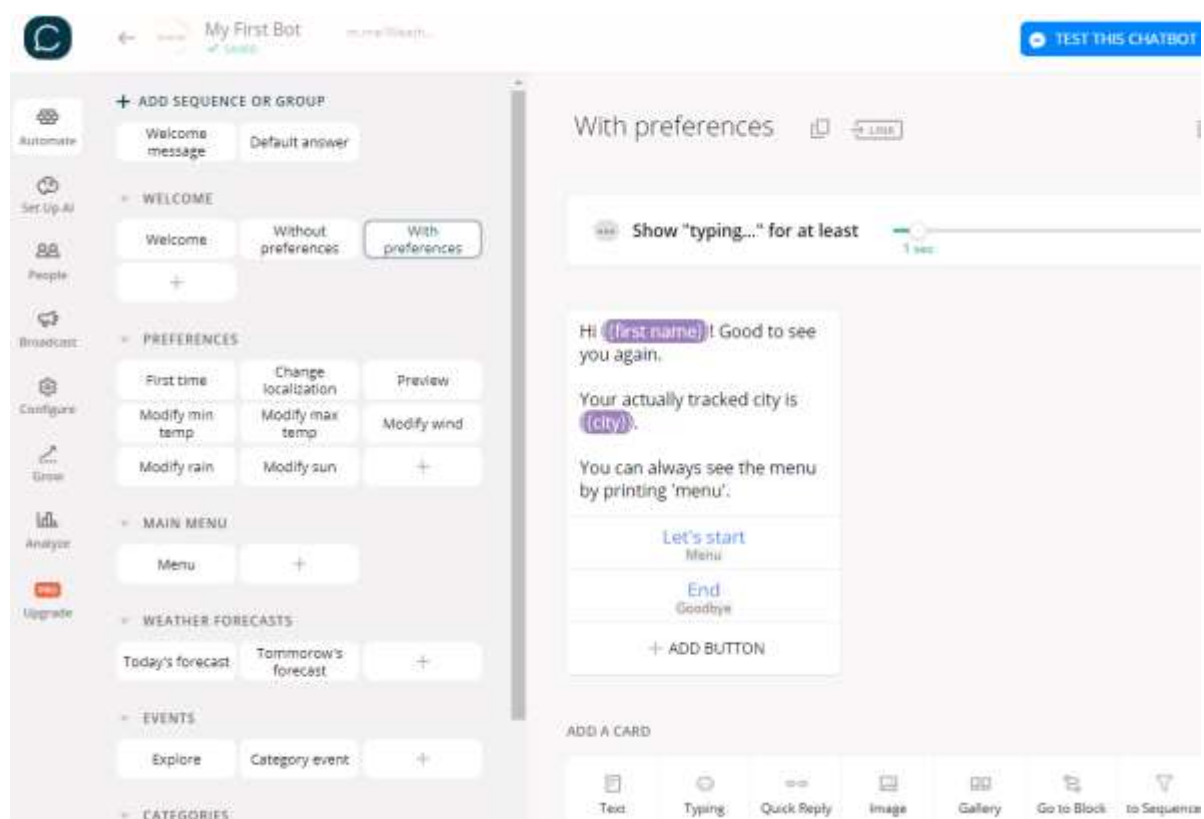**Source:** https://www.eventbrite.es/e/entradas-taller-vivencial-la-ultima-batalla-45339345202?aff=ebapi

That is all what I have found. Remember that I can only show you max 10 events. But I am working on update, to show you all of them.

Rafał Gosiewski

Used technologies

Project is created using two different technologies and tools. First one, to create and manage the bot which can recognize user's input and react for that in natural way I used the Chatfuel tool. For accessing to external APIs of the Eventbrite and OpenWeatherMap services I created my own server with simple PHP scripts which are called from the Chatfuel JSON modules and inside they are request external services, process the result and send to chatbot prepared JSON objects which define the output on the user's screen.

Chatfuel

After creating account, and process of registration my chatbot, Chatfuel gives us a powerful tool for building our chatbot. You can define blocks and sequences of the messages and 'decorate' them by some actions like 'typing animation' to make you bot in user experience more human.

Server

I used one of the free hosting which offers simple database, ftp access, and PHP engine. I put there simple methods for accessing external APIs, receive all data in JSON format, process with them and send response to chatbot also in JSON format, corresponded to the Messenger Developer Documentation which defines exactly, how that objects have to look to print elements on the chat.

You can test what the server send to chatbot by accesing that address:

http://ragobot.5v.pl/scripts/chatbot.php?function=allEvents

(This method works and returns always events for Valencia).

Below example part of code response for preparing arrays of objects for JSON.

```php
// JSON item

function qrBtn($title, $blockname)
{
    $data = array
        (
        'title' => $title,
        'block_names' => array($blockname)
    );
    return $data;
}

// JSON item

function quickReply($t, $arrBtns)
{
    $data = array
        (
        'text' => $t,
        'quick_replies' => $arrBtns
    );
    return $data;
}

// JSON item
function listMsg($arrMsgs) {
    $messages = array();
    for($i=0; $i < sizeof($arrMsgs); $i++ ) {
        $msg = array(
            'text' => $arrMsgs[$i]
        );
        array_push($messages, $msg);
    }
    return $messages;
}
```

Rafał Gosiewski

Summary

Due to the implementation of three other large projects at the same time, and illness in the most intense period, I failed to implement all the original provisions of the project. What I did not manage to do is the event recommendation service based on user preferences and analysis of event details. It was planned for 3 iterations of the prototype. The most important design assumption has been met - it is for access to open data and the development of new data based on it. What I could do additionally was to improve the design and create it fully usable, it would provide the opportunity to display information on all events, not just those 10 closest.