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EU CODE WEEK CHALLENGES
Create your own chatbot in 10 minutes

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Title: Create your own chatbot in 10 minutes

Purpose of the challenge

The purpose of this challenge is to introduce beginners to the fascinating world of chatbots and artificial intelligence. In just 10 minutes, you'll create your own simple chatbot using Python. This exercise aims to show how chatbots work and how easy it is to start building them with programming. It serves as an engaging and interactive way to learn programming concepts while applying them to solve real-world problems.

Description of the challenge

In today's digital world, chatbots are becoming an indispensable tool in many industries, from customer support to education. Using gamification in learning allows users to engage in a fun and interactive way and making your own chatbot in just a few minutes is a great start for any developer. This task combines creating something useful with a fun learning component, which will teach you the basics of programming and interaction with real problems.

Target audience

This challenge is aimed at beginners and intermediate learners who are interested in artificial intelligence and chatbot development. If you're looking to dive into programming, this will provide you with a fun way to start, even if you don't have any prior coding experience. It is also a great learning experience for teachers who want to introduce students to chatbots and Python programming.

Experience

The challenge is beginner-friendly and designed for anyone with a basic understanding of how to work with computers. No prior knowledge of Python is required, though familiarity with basic programming concepts like variables and loops will be helpful. Educators can also use this as an introduction to AI and machine learning.

Duration

This challenge is designed to be completed in approximately 30-60 minutes, depending on the participant's familiarity with Python. Beginners may take a bit longer to complete the setup, but it's an excellent hands-on learning experience that can be followed step-by-step.

Recommended tools:

PC / Laptop
Python IDLE – you can download it from python.org

Instructions What is Python IDLE?

- Python IDLE is the integrated development environment that comes with Python. It is a basic tool that allows you to write and run Python code directly.

Where can I download Python IDLE?

- You can download Python IDLE from the official Python website.

How to Run Python IDLE?

- After installing Python, open IDLE from the start menu (Windows) or Applications folder (macOS). It will open a window where you can write and run Python code.

Learning Objectives:

By the end of this challenge, students will:

- Understand the basics of Python programming and how it can be used to create interactive chatbots.
- Be able to install Python and external libraries like ChatterBot.
- Learn how to build a simple chatbot that can interact with users.
- Gain insights into the basics of natural language processing and AI.
- Be familiar with the Python environment and terminal usage.

For Educators:

- Understand the Basic Steps: This task assumes basic knowledge of Python and the terminal. It may be challenging for teachers unfamiliar with coding. We recommend learning some basics of Python programming and terminal usage beforehand. You can explore introductory tutorials on Python (like Learn Python).
- Preparation for Teachers: Before teaching this challenge, educators should familiarize themselves with the Python IDLE and the terminal (Command Prompt on Windows or Terminal on macOS) to confidently assist students.
- Troubleshooting Common Issues: If the code doesn't run as expected, check the following:
  - Ensure Python and all libraries are properly installed.
  - Double-check that the Python code is correctly written (proper indentation is crucial).
  - Review the terminal installation commands for any errors.

Step 1: Preparing the environment

First install Python IDLE (if you haven't already), and then install the ChatterBot library. It will be a tool for creating a simple chatbot. Enter in the terminal:

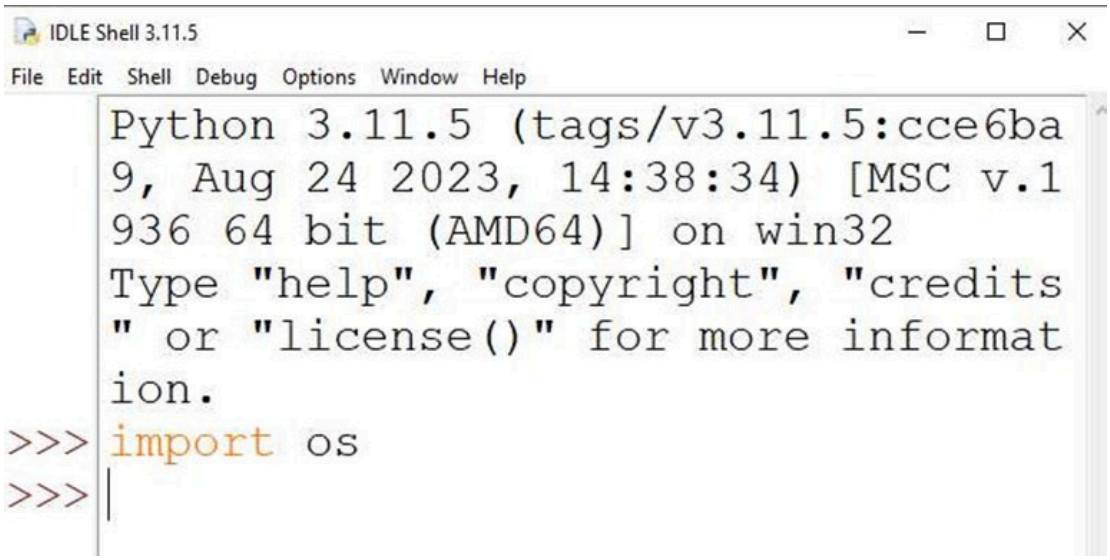
You are downloading Python IDLE from the website: https://www.python.org/downloads/ In IDLE you can use the built-in tool to install packages without the need for command lines. We can explain this as the use of a special Python tool to install the package. Here's what you need to do:

- Open IDLE.
- Close all open Python code, then go to the shell (Python home window).
- Here you can enter the Python Package Installation Code:

import axis - click Enter

os.system("python -m pip install chatterbot") - click Enter and wait for the script to execute

import chatterbot - click Enter



Let's install a few more plugins:

os.system("python -m pip install spacy")
os.system("python -m spacy download
en_core_web_sm") os.system("python -m pip install
pyyaml") os.system("python -m pip install
chatterbot_corpus")

Step 2: Basic chatbot setting

Create a Python file (e.g. chatbot.py) and import the required library:

from chatterbot import ChatBot

```
from chatterbot.trainers import ChatterBotCorpusTrainer
```

Step 3: Set up a chatbot

Set base chatbot:

```
chatbot = ChatBot('MyBot')

trainer = ChatterBotCorpusTrainer(chatbot)

trainer.train('chatterbot.corpus.english')
```

Step 4: Add Interaction

Add chatbot communication code:

```
while True:

user_input = input("You: ")

response = chatbot.get_response(user_input)

print("Bot: ", response)
```

Step 5: Run the program

Start your Python program and start a chat with the chatbot. Try asking a few questions and see how it fits!

```
>>>
================== RESTART: C:/Users/marko.solic/AppData/Local/Programs/Python/Python310/chat.py ==================
ChatterBot Corpus Trainer: 0it [00:00, ?it/s]ChatterBot Corpus Trainer: 1it [00:00,  2.10it/s]ChatterBot Corpus
Trainer: 2it [00:00,  3.89it/s]ChatterBot Corpus Trainer: 3it [00:00,  4.84it/s]ChatterBot Corpus Trainer: 4it [0
0:00,  5.01it/s]ChatterBot Corpus Trainer: 5it [00:01,  3.62it/s]ChatterBot Corpus Trainer: 7it [00:01,  5.53it/s
]ChatterBot Corpus Trainer: 8it [00:01,  5.97it/s]ChatterBot Corpus Trainer: 11it [00:01,  7.72it/s]ChatterBot C
orpus Trainer: 12it [00:02,  6.71it/s]ChatterBot Corpus Trainer: 13it [00:02,  6.75it/s]ChatterBot Corpus Trainer
: 15it [00:02,  8.36it/s]ChatterBot Corpus Trainer: 16it [00:02,  5.96it/s]ChatterBot Corpus Trainer: 17it [00:02
,  6.38it/s]ChatterBot Corpus Trainer: 18it [00:03,  6.91it/s]ChatterBot Corpus Trainer: 19it [00:03,  6.06it/s]
You: Šta ima?
Bot:  I am die hard fan of Barcelona.
You: Why not Real?
Bot:  How is your health?
You: Good
Bot:  That's good to hear.
You: What about you?
Bot:  Yesterday was the 13th, right?
You: yes
Bot:  Can you feel?
You: no
Bot:  Should I be? Did something happen?
You: Kako se zoveš?
Bot:  Europe
You: What's the weather?
Bot:  A secret organization believed by some to be in control of all governments through a worldwide conspiracy.
You:
```

Mini simulation:

Reply:
What do the answers the chatbot gives you look like?
If your chatbot doesn't provide quality answers like AI tools you can access online – what do you think is causing it?

Quiz:

1. What's a chatbot?

   a) A computer program that allows people to play with a computer
   b) A computer program that simulates conversation with users
   c) Computer program for sending email

2. What Python package was used in this chatbot creation job?
   a) numpy
   b) ChatterBot
   c) pandas

Correct answers: 1.b, 2.b

Mini simulation: Simulate how the chatbot would answer two different questions. Ask the questions "What is your name?" and "What is the time today?" Check answers based on a trained model.