**Homework 4**

Upload your program from *Google Classroom* until **December 12, 2018, 23:55.**

Upload only a single \*.cs file.

The name of the file: number\_name\_surname.cs

For example: 2017510028\_ali\_hakan\_yildirim.cs

Write a ***psychotherapist*** program that continuously reads a text from the user and then gives a response based on some rules and keywords in the text until the user enters "I have to go now.".

This problem falls under the domain of *Artificial Intelligence*. The program will simulate the behavior of a psychotherapist. The **user (patient)** starts the conversation by writing a text. Then the **computer (psychotherapist)** asks a question related to the text.

The program should interact with user in simple English language and simulate a conversation as a type of chatbot.

The program should ignore **14 punctuation marks**, which are stored in the array punctuations, such as points, comma, semi comma, single and double quotation marks, question marks, exclamation points, dash and brackets.

char[] punctuations = {′.′, ′,′, ′;′, ′’′,′”′, ′?′, ′!′, ′-′, ′{′, ′}′, ′(′, ′)′, ′[′, ′]′}

Make sure your program works well, when the user uses uppercase or lower case letters, or mixes them up.

The program should apply the *rules* in the following order.

**Rules:**

**Rule 1-** If a word *X* (except stop words) appears more than 2 times in the text, the computer asks "Do you love *X*?"

Assume that **stop words** are stored in the following array:

string[] stop\_words = {″a″, ″after″, ″again, ″all″, ″am″, ″and″, ″any″, ″are″, ″as″, ″at″, ″be″, ″been″, ″before″, ″between″, ″both″, ″but″, ″by″, ″can″, ″could″, ″for″, ″from″, ″had″, ″has″, ″he″, ″her″, ″here″, ″him″, ″in″, ″into″, ”I”, ″is″, ″it″, ″me″, ″my″, ″of″, ″on″, ″our″, ″she″, ″so″, ″such″, ″than″, ″that″, ″the″, ″then″, ″they″, ″this″, ″to″, ″until″, ″we″, ″was″, ″were″, ″with″, ″you″}

If more than one word appears more than 2 times, select any of them.

**Rule 2-** If the user asks a **question** to the computer with one of the following keywords: Why, Who, When, Where, What and How, the computer replies by randomly selecting one of the following questions:

"Do you often think about this question?"

"Why do you want to know?"

**Rule 3-** If the user uses one of the **negative words** (*X*), which are stored in the array *negative\_words*, the computer asks "Being *X* is bad for your health. How long do you feel *X*? Why do you feel *X*?"

Assume that **negative words** are stored in the following array:

string[] negative\_words = {″stress″, ″depression″, ″sad″, ″angry″, ″hate″, ″pain″, ″abnormal″, ″abort″, abuse″, ″brittle″, ″hurt″, ″scared″, ″afraid″, ″upset″, ″confused″, ″lonely″, ″tired″, ″vulnerable″, ″guilty″, ″anxiety″, ″disappointment″, ″regret″, ″awful″, ″sick″, ″regretful″, ″unhappy″, ″sorrowful″, ″troubled″, ″worried″, ″annoyed″}

**Rule 4-** The program must convert pronouns: **I** with **you**, **my** with **your**, **myself** with **yourself, am** with **are, me** with **you**.

The program must also remove "**Yes**" words if it exists and inserts whether "**, right?**" word or "**You say**" words randomly.

If the user enters more than one sentences, the program should convert the last sentence only.

**Sample Dialogue:**

User : "Hello. I am Cenk."

Program : "You are Cenk, right?"

User : "Yes. I am feeling unhappy. I think I need a doctor."

Program : "Being unhappy is bad for your health. How long do you feel unhappy? Why do you feel unhappy?"

User : "I feel it for a long time. I have some nightmares."

Program : "You say you have some nightmares?"

User : "Yes. My nightmares are usually about my mother."

Program : "Your nightmares are usually about your mother, right?"

User : "Yes. My mother always says that you should believe in your grand mother, but my mother doesn't believe in her mother herself."

Program : "Do you love mother?"

User : "Yes. But, why my mother doesn't understand me?"

Program : "Do you often think about this question?"

User : "Yes. She gets on my nerves sometimes."

Program : "She gets on your nerves sometimes, right?"

User : "Yes. Sometimes I can’t control myself!"

Program : "You say sometimes you can’t control yourself?"

User : "I have to go now."

**Notes:**

**1.** Your program must work correctly under all conditions. Try to control all possible errors.

**2.** You should use meaningful variable names, appropriate comments, and good prompting messages.

**3.**If you are late, your grade will be decreased 10 points for each day.

After five days, your assignment will not be accepted.

**4.** Assignment must be your individual work.

**Cheating** is strictly prohibited.

If any cheating occurs, your assignment will be graded with **zero (0)**.

(A software will be used to automatically detect the similarity of students' source-codes.)