

## ITU COMPUTER ENGINEERING DEPARTMENT

### BLG 223E DATA STRUCTURES

### HOMEWORK -2

Due Date: 8<sup>th</sup> of November, 2018 23:59 pm.



*"Excellence is a continuous process & **not an accident.**"*

-- Abdul Kalam

For the second homework you are required to implement a character based language model. This pdf is prepared for to give details of sample input.txt files.

We have uploaded two input files (english-input.txt and turkish-input.txt) on ninova system. Both inputs are poems ("Sonnet 18" and "Sessiz Gemi") of famous English and Turkish poets. You can find a detail information of the poets at the end of this file.

You will run your code with given sample inputs, and you are required to obtain character based language model and to calculate occurrence probability of given characters. The inputs will be divided by **end line** (which **will not be** considered as special character), you will read the input data line by line and produce language model. Your **test file** will be formatted as same as these two sample inputs and will include other Turkish and English poems. Turkish encoding problem could be challenging for this homework, but those whom figures them out will be graded with extra points. All the language models created from these files, should be sorted in alphabetical order as well. There won't be a **tab character** in sample inputs and test input, so please do not consider them as special character. Only white space and punctuations will be considered as special characters which will be added to your language model.

For further questions please do not hesitate to e-mail ([torunoglud@itu.edu.tr](mailto:torunoglud@itu.edu.tr)).

Good Luck 😊

### **Yahya Kemal Beyatlı**



The poet Yahya Kemal Beyatlı was born on December 2nd, 1884 in Skopje. His real name is Ahmet Âgâh, but he wrote under pseudonyms such as Agâh Kemal, Esrar, Mehmet Agâh, and Süleyman Sadi. He came from a prominent family whose roots could be traced back to the Ottoman court, and he was educated at various private schools. As he was about to start his higher education, severe disagreements between his parents kept him away from school for some time. This time coincided with the oppressive regime of Abdülhamit II, and Beyatlı got involved with various anti-regime movements. To avoid arrest, he escaped to Paris in 1903. During his time abroad, he met important Turkish intellectuals, politicians and writers who were also exiles. He traveled extensively in Europe and was exposed to various cultures. He developed a fondness for literature and influenced by the French Romantic Movement. Beyatlı eventually decided that he wanted to write poetry, and he first studied the historical works of French Parnassus poets. Consequently, he sought out a way to revitalize Turkish divan poetry, in order to create smooth and pure poetic lines. When he returned to Istanbul in 1912, Yahya Kemal Beyatlı was already known as a master poet, and the change of regime in the country provided him with opportunities in various high level governmental positions. Beyatlı became a parliamentarian for the Tekirdağ and Istanbul provinces, and in 1947 he was appointed as the first Turkish ambassador to Pakistan. But after this assignment, his health got progressively worse, and he returned to Turkey in 1949. His medical condition was never properly diagnosed and his health was never fully restored. He died on November 1, 1958 in Istanbul.

### **William Shakespeare**



William Shakespeare was an English poet, playwright, and actor. He was born on 26 April 1564 in Stratford-upon-Avon. His father was a successful local businessman and his mother was the daughter of a landowner. Shakespeare is widely regarded as the greatest writer in the English language and the world's pre-eminent dramatist. He is often called England's national poet and nicknamed the Bard of Avon. He wrote about 38 plays, 154 sonnets, two long narrative poems, and a few other verses, of which the authorship of some is uncertain. His plays have been translated into every major living language and are performed more often than those of any other playwright. Around 1613, at the age of 49, he retired to Stratford, where he died three years later. Few records of Shakespeare's private life survive. He died on 23 April 1616, at the age of 52. He died within a month of signing his will, a document which he begins by describing himself as being in "perfect health". In his will, Shakespeare left the bulk of his large estate to his elder daughter Susanna. Shakespeare produced most of his known work between 1589 and 1613. His early plays were mainly comedies and histories and these works remain regarded as some of the best work produced in these genres. He then wrote mainly tragedies until about 1608, including Hamlet, Othello, King Lear, and Macbeth, considered some of the finest works in the English language. In his last phase, he wrote tragicomedies, also known as romances, and collaborated with other playwrights. Shakespeare's plays remain highly popular today and are constantly studied, performed, and reinterpreted in diverse cultural and political contexts throughout the world.