UNIVERSIDADE FEDERAL DE RORAIMA
CENTRO DE CIÊNCIA E TECNOLOGIA - CCT
DEPARTAMENTO DE CIÊNCIA DA COMPUTAÇÃO – DCC
DCC405 – ESTRUTURA DE DADOS II
PROF. MSC. ACAUAN C. RIBEIRO

Nome(s):_____

EXERCÍCIO - Aula 02 - Radixsort

1) As bases nitrogenadas são estruturas cíclicas e existem em dois tipos: as púricas e as pirimídicas. Tanto o DNA como o RNA possuem as mesmas purinas: a **adenina** (A) e a **guanina** (G). A mudança ocorre em relação às pirimidinas, a **citosina** (C) é comum entre os dois, mas varia a segunda base, no DNA há **timina** (T) e no RNA há **uracila** (U). Como mostra a figura:

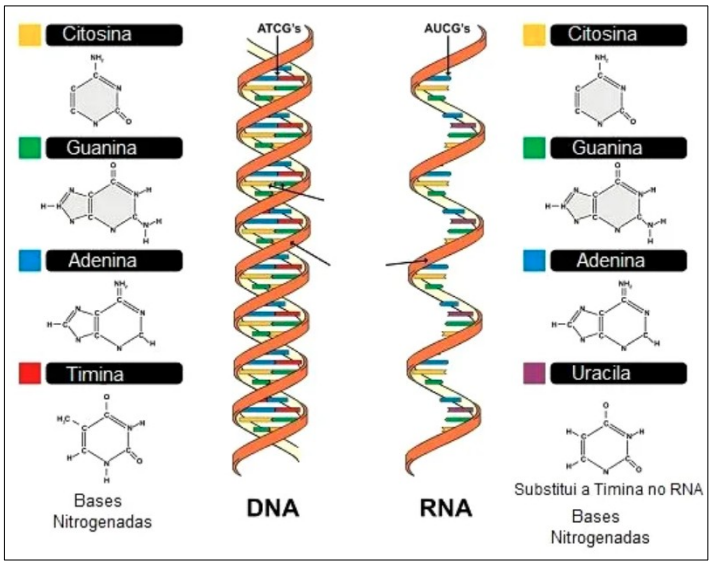

Fig 1. Moléculas de DNA e RNA, mostrando as diferenças de bases nitrogenadas presentes em cada uma

Como entrada temos um arquivo **"dna_seq.txt"** contendo algumas sequencias de bases nitrogenadas de DNA, a sua tarefa é ordenar essa entrada de dados utilizando o **algoritmo RADIXSORT** e salvar a saída em um outro arquivo chamado **dna_seq_ordenado.txt**

Entrada	Saída
ggcacgtgac ggtcgggccg cctccgcctc tctctttact gcggcgcggg gcaagatcat ggaagggaag tggttgctgt gtatgttact ggtgcttgga actgctattg ttgaggctca tgatggacat gatgatgatg tgattgatat tgaggatgac cttgacgatg tcattgaaga ggtagaagac tcaaaaccag ataccactgc tcctccttca tctcccaagg ttacttacaa agctccagtt ccaacagggg aagtatattt tgctgattct tttgacagag gaactctgtc agggtggatt ttatccaaag ccaagaaaga cgataccgat gatgaaattg ccaaatatga tggaaagtgg gaggtagagg aaatgaagga gtcaaagctt ccaggtgata aaggacttgt gttgatgtct cgggccaagc atcatgccat ctctgctaaa ctgaacaagc ccttcctgtt tgacaccaag cctctcattg ttcagtatga ggttaatttc caaaatggaa tagaatgtgg tggtgcctat gtgaaactgc tttctaaaac accagaactc aacctggatc agttccatga caagacccct tatacgatta tgtttggtcc agataaatgt ggagaggact ataaactgca cttcatcttc cgacacaaaa accccaaaac gggtatctat gaagaaaaac atgctaagag gccagatgca gatctgaaga cctattttac tgataagaaa acacatcttt acacactaat cttgaatcca gataatagtt ttgaaatact ggttgaccaa tctgtggtga atagtggaaa tctgctcaat gacatgactc ctcctgtaaa tccttcacgt gaaattgagg acccagaaga ccggaagccc gaggattggg atgaaagacc aaaaatccca gatccagaag ctgtcaagcc agatgactgg gatgaagatg cccctgctaa gattccagat gaagaggcca caaaacccga	aaaaatccca aaatgaagga aacctggatc aaggacttgt aagtatattt acacactaat acacatcttt accagaactc acccagaaga accccaaaac actgctattg agataaatgt agatgactgg agctccagtt agggtggatt agttccatga ataaactgca ataccactgc atagtggaaa atcatgccat atgaaagacc atgctaagag caaaacccga caaaatggaa caagacccct ccaaatatga ccaacagggg ccaagaaaga ccaggtgata cccctgctaa ccggaagccc cctattttac cctccgcctc cctctcattg ccttcctgtt cgacacaaaa cgataccgat cgggccaagc ctcctgtaaa ctctgctaaa ctgaacaagc ctgtcaagcc cttcatcttc cttgaatcca cttgacgatg gaaattgagg gaactctgtc gaagaaaaac gaagaggcca gacatgactc gaggattggg gaggtagagg gataatagtt gatccagaag gatctgaaga gatgaaattg gatgaagatg gatgatgatg gattccagat gcaagatcat gccagatgca gcggcgcggg ggaagggaag ggagaggact ggcacgtgac gggtatctat ggtagaagac ggtcgggccg ggtgcttgga ggttaatttc ggttgaccaa gtatgttact gtcaaagctt gtgaaactgc gttgatgtct tagaatgtgg tatacgatta tcaaaaccag tcattgaaga tcctccttca tccttcacgt tctcccaagg tctctttact tctgctcaat tctgtggtga tgacaccaag tgaggatgac tgataagaaa tgatggacat tgattgatat tgctgattct tggaaagtgg tggtgcctat tggttgctgt tgtttggtcc ttacttacaa ttatccaaag ttcagtatga ttgaaatact ttgaggctca tttctaaaac tttgacagag