You are logged in as **Shahab Shafieihajiabady** (**Log out**)

emil HAW

Suche: Kurs, Lernraum, Dozent... Suchen

DMI LS TI W&S Hilfe

Dashboard ▶ **Lehrveranstaltungen** ▶ **Technik und Informatik W15** ▶ **Informations- und Elektrotechnik W15** ▶ **TI..IE.W15 ADS Rnz** ▶ 4 December - 10 December ▶ **Lab Sheet 6**

Algorithms and Data Structures (IE3, R

Lab Sheet 6

Lab Task 6 (Huffman Trees)

Regulations and Lab Report Uploads

- **Private Labtops:** The use of private laptops is encouraged. WLAN access is provided.
- **Lab Teams:** A lab team consists of 2 people who can develop their software in common. Regulation for single workers on request.
- **Responsibilities:** There are 2 problems, one for each member. Decide in the beginning, who will be responsable for which task. This person comments the source code, works out the test cases, writes the report for that task and uploads it. Consider and solve the last task together.
- **Plagiarism:** All ressouces used have to be cited in the documentation AND in the source-code. Text and code has to be quoted properly. *Recommendation:* Right from the start store all used URLs including the access-time in your document working directory.
- **Presentations:** **Show the results of you preparation**.
- **Missing deadlines:** Please obey the DEADLINE for uploads into the moodle system, usually 6 days after the Lab Date. Repeated uploads are possible, a later upload replaces the earlier one. Each working group is allowed to miss the deadline by three days only once in the term.

Please, upload a **ZIP-file** with the following content:

1. Executable program (exe or jar) for each sorting method that produces a file with the measured data, either directly or through a bat-file that pipes stdout into a file.
2. Source code directories with a project file for compilation - docu tells with which compiler and IDE,
3. Documentation as a single file.

Preparation (based on the lecture 8)

1. Draw the tree for the in pre-order traveral encoded sequence ***sbl****hea*t*y*ro_ whrere a star * represents an inner node while the letters s,b,l,h,e,a,t,y,r,o and the empy space _ represent leaves.
2. Calculate in a table the frequency of the characters {_, a, b, ..., y } and the number of bits needed to encode the String s1= "She_sells_sea_shells_by_the_seashore" as well as the number of 0's and 1's that will appear, without explicitely generating the code by hand.

Problem 12 (Coding Tree)

(A) Compile the program PreFixFreeDecoder provided in the lecture and test its constructor with the tree encoded sequence given in preparation 1. Provide a program that encodes the above given String s1 on the basis of the tree into a bit sequence and test its properties against your calculation in preparation 2. Feed the bit sequence into the decoder and check the output.
(B) Provide a coding tree for the String s2 = "Sam's_shop_stocks_short_spotted_socks"

Problem 13 (Huffman Tree Construction)

Compile the program Huffman Tree Construction provided in the lecture. Provide a program that encodes the tree in pre-order traveral. Test your program with the Strings s1 and s2. Compare the resulting trees with the one given in the preparation as well as the resulting code properties with the the code properties of the previous problem and interpret your results. Print out the Huffman tree (pre-order traveral encoded) for both strings.

Navigation

Dashboard
- Site home
  - Site pages
  - Current course
    - TI..IE.W15 ADS Rnz
      - Participants
      - Badges
      - Forum Area
      - 18 September - 24 September
      - 25 September - 1 October
      - 2 October - 8 October
      - 9 October - 15 October
      - 16 October - 22 October
      - 23 October - 29 October
      - 30 October - 5 November
      - 6 November - 12 November
      - 13 November - 19 November
      - 20 November - 26 November
      - 27 November - 3 December
      - 4 December - 10 December
        - Lab Sheet 6
        - Lab 6 upload
        - Lecture Notes 9
        - Sedgewick Lecture 9 Hashing
      - 11 December - 17 December
      - 18 December - 24 December
      - 25 December - 31 December
      - 1 January - 7 January
      - 8 January - 14 January
      - 15 January - 21 January
  - My courses
  - Courses

Administration

Course administration

Last modified: Wednesday, 2 December 2015, 12:41 PM