Introduction to the mainframe

Annotation: There is no doubt about the importance of mainframe in todays world of informational technologies. It is a workhorse of the large data centers of most of the biggest companies in the world. In this course the students can learn basic concepts of the work with mainframe. This knowledge should help them to more easily integrate into larger projects running on mainframe.

1. What is the mainframe
   - Advantages of the mainframe
   - Jobs and transactions
   - Brief overview of the hardware
   - People around the mainframe – programmers, administrators and operators
   - Operating systems running on the mainframe
2. Concepts of z/OS
   - Memory management – real, auxiliary storage, frames, pages, swapping, history of z/OS with respect to the addressing models, address translation
3. Address spaces – structure
4. Data sets
   - Why data sets
   - Comparison with the file systems on Unix and Windows
   - Data set types
   - Data set names
   - Units for data set size
5. Data sets
   - Discs, VTOC, labels, catalogs
   - Data set record formats
   - Generation data group
6. ISPF
   - USS, TSO/E, ISPF – what is it
   - F-keys in ISPF
   - Menus in ISPF
7. ISPF
   - Working with dataset – allocation and browsing of data sets
   - Text editor in ISPF
   - How to transfer data with x3270
8. Jobs in z/OS - JES
   - JES
   - Phases of the job processing
9. JCL
   - What is JCL
   - Structure of the code in JCL
10. JCL
    - Basic commands – JOB, EXEC, DD
    - DD parameters
    - Special DD names – SYSIN, SYSOUT, JOBLIB,...
11. JCL
    - Executing programs in JCL – parameters of EXEC
    - JCL procedures
12. Programming in z/OS
    - Programming languages
13. Programming in C/C++
    - Large projects and modules
    - Compiling programs using JCL
    - Linking programs using JCL
14. Programming in C/C++
    - Executing from JCL and TSO/E
    - Cataloged procedures for C/C++
    - Optimizations for programming in C/C++
15. Programming in C/C++
    - Working with data sets in C/C++ - ddnames, formats
16. VSAM
    - What is VSAM

- VSAM types – KSDS, ESDS, RRDS, LDS
- CI, CA in VSAM

17. VSAM
    - IDCAMS for VSAM
18. VSAM
    - Programming with VSAM in C/C++
19. REXX
    - What is REXX
    - REXX code syntax
    - Commands
    - Variables and expressions
    - Loops
    - Jumps
20. REXX
    - Built-in functions
    - Debugging in REXX using TRACE
21. Assembler
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