AS CompSci Pre-release 2023 Revision Sheet

Diagram, engineering drawing

Description automatically generatedFunction Hierarchy Diagram

#

Box and whisker chart

Description automatically generated

**Error codes**

The program has 11 error codes that can trigger depending on different scenarios

A screenshot of a computer

Description automatically generated

Paper Specifics:

Section A: (25 marks)

1. 6 marks
2. 5 marks
3. 2 marks
4. 2 marks
5. 10 marks, has 2 parts so most likely writing a program from pseudo and screenshot

Section B: (20 marks)

* 4 marks
* 2 marks
* 1 mark
* 5 marks
* 2 marks
* 6 marks

Section C: (30 marks)

1. 5 marks
2. 6 marks
3. 5 marks
4. 14 marks

Program Information:

Constants:

* EMPTY\_STRING – an empty string
* HI\_MEM – stack size of 20
* MAX\_INT – number of bits available for operand
* PC, ACC, STATUS, TOS, ERR are all assigned the index location value within the array Registers at start

Variables:

* Registers – an array of 5 integer values, 1st represents PC, 2nd is ACC, 3rd is STATUS, 4th is TOS, 5th is ERR
  + PC – Holds memory address of current instruction
  + ACC – Holds value in accumulator
  + STATUS – Status register has 3 flags ZNV, If result: 0 then Z, negative then N, too large to fit into given number of bits then V
  + TOS – Stack pointer that points to top of stack
  + ERR – Register for flagging runtime errors
* SourceCode – Array of length of stack size
* SourceCode[0] – Number of lines in source code
* Memory – array of objects of AssemblerInstruction class
* Memory[0] –
* SymbolTable – a dictionary of opcodes
* ThisLabel – extracts the label as the first 5 characters of the line before the :
* Array ranging – inclusive exclusive
* "{:>2d} {:<40s}".format(LineNumber, SourceCode[LineNumber]) - :> and :< denote the side to format, the number denotes the number of characters from side, and d means first value and s means second value

Try- Except statements:

* LoadFile() – to check if valid file exists
* PassTwo() – To check if OperandValue is an integer