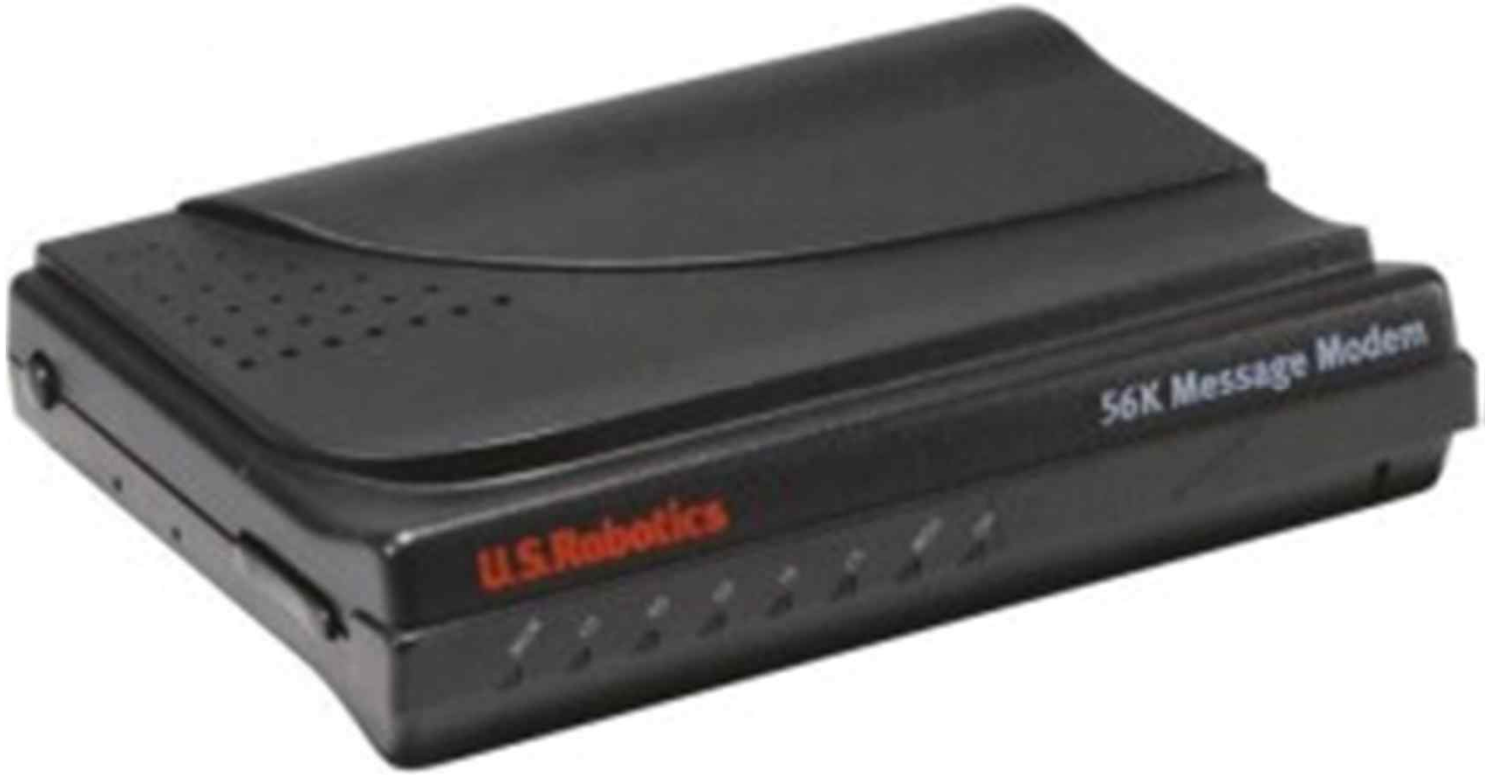
Chapter 1.

Introduction

Computer : past

Computer : past

Computer : past

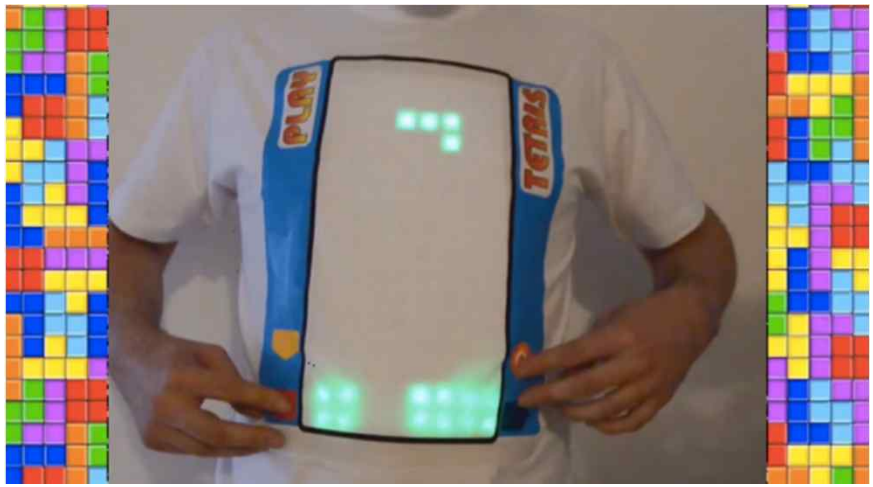


Computer : past

Computer : present

K-BENCH

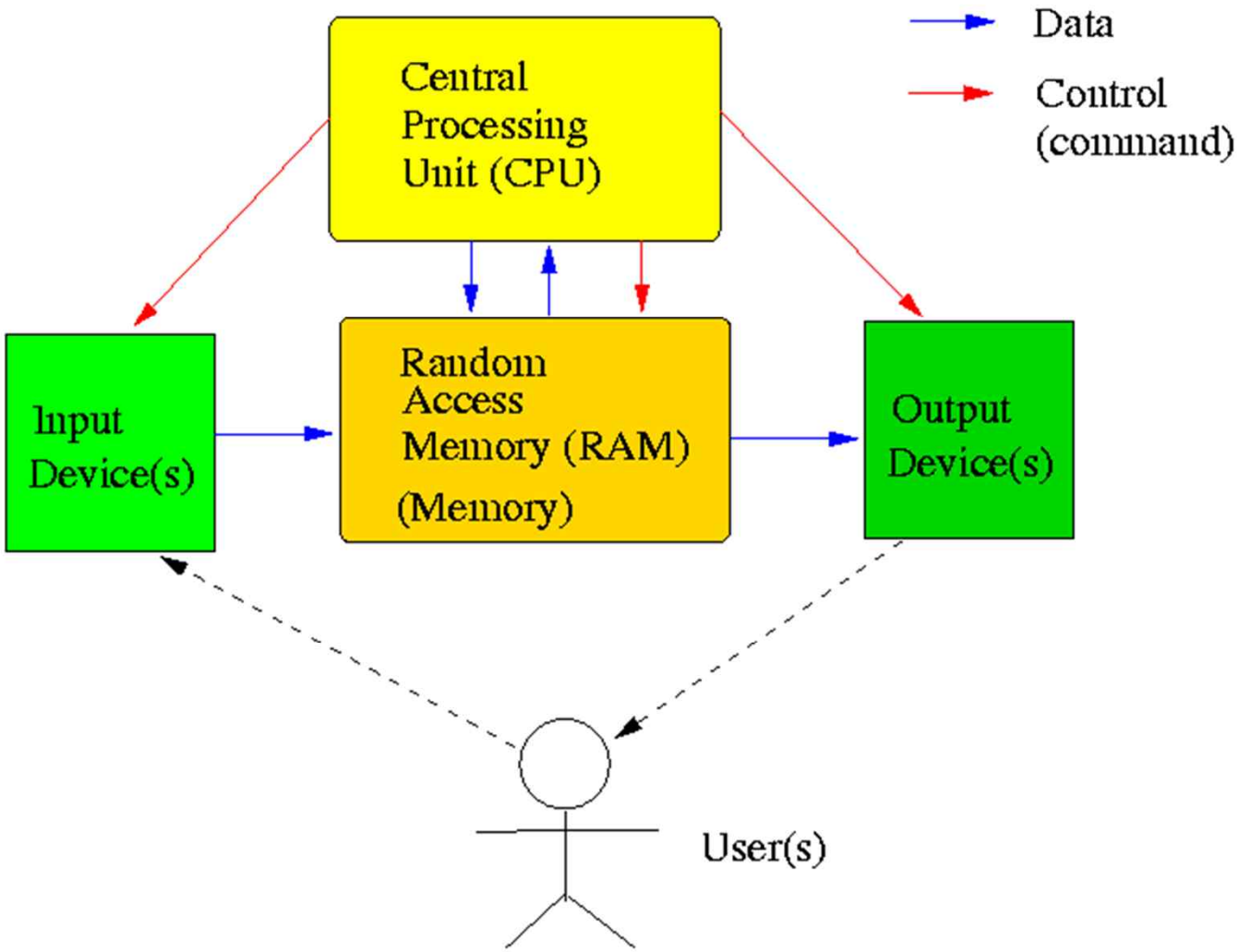
Computer : future?



Wearable?

Cloud?

Structure of Computer (Hardware)

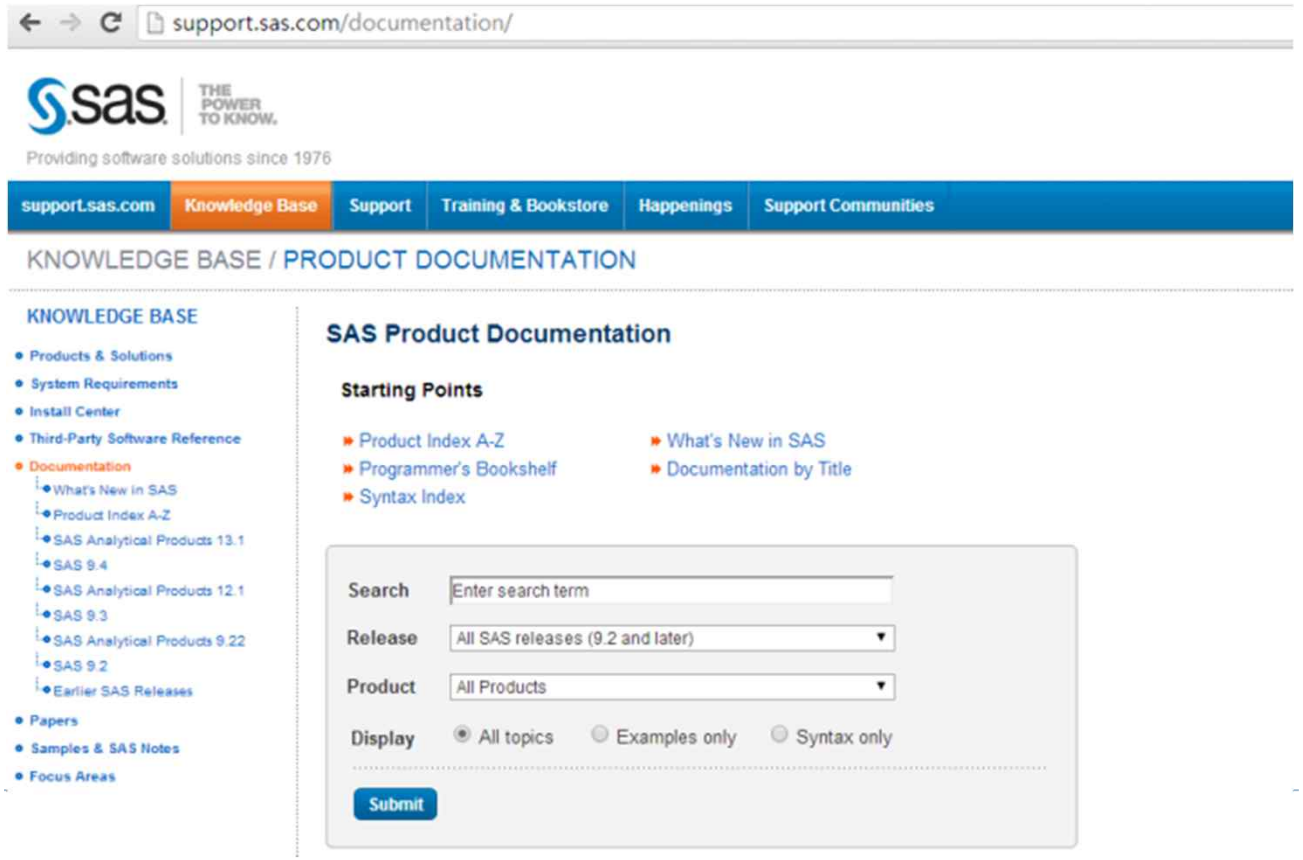


Software

software.informer
Show main window
Options
3ivx D4
afreeca pla...
CDSpace
Daum 팟플...
dosirak
DTS+AC3 ...
EasyBCD
EVEREST_U...
Firefox
Frozen Thr...
Google 크롬
Hard Disk L...
iColorFolder
IETails.exe...
Internet Ex...
Microsoft O...
Microsoft Vi...
Mobile Sync...
NetMeeting
Opera
PCBugDoctor
Revo Unins...
Safari
Spell (인터...
TaskInfo
The KMPlayer
Umile Encoder
Unlocker
Utorrent
Vista Drive ...
Warcraft III
Windows M...
WinRAR
XPEED 도...
곰플레이어
그림판
알송
알씨
알약
알집
옥션 V3 36...
온팁 - 클...
울타리 (sa...
원격 데스...
"Start" context menu

SAS (Statistical Analysis System)

- SAS is a software system that enables you to perform statistical analysis
- One of the most widely used statistical software
- Latest version : SAS 9.4 (http://www.sas.com)



SAS products

- Base SAS — Data handling & Basic procedures
- SAS/STAT — Statistical Analysis
- SAS/GRAPH — Tool for getting enhanced graphs
- SAS/OR — Operations Research
- SAS MACRO — Tool for reducing the amount of text for common tasks
- SAS/IML — Interactive Matrix Language
- SAS/QC — Quality control

⇨ We will mainly deal with procedures including in Base SAS and SAS/STAT.

SAS components

SAS consists of two main components.

DATA step is used to deal with data sets.

- Creating data sets
- Merging or Modifying data sets
- Importing data from external sources

PROC (procedure) step is used to process the data sets produced in DATA step.

Example

```
data example;
    input no name $ short free total;
    datalines;
1 yunakim 76.20 155.40 231.60
2 adelsot 74.64 149.95 224.59
3 carolkos 74.12 142.61 216.73
…
;
proc print data=example;
proc plot data=example;
    plot free*short='*';
run;
```

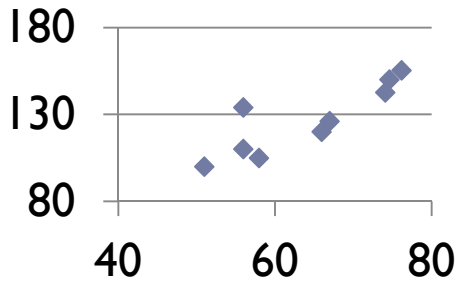
DATA Step

PROC Step

variable

no	name	short	free	total
1	yunakim	76.20	155.40	231.60
2	adelsot	74.64	149.95	224.59
3	carokos	74.12	142.61	216.73
…				

observation



SAS windows

SAS windows consists of several parts.

Program Editor

- Creating and editing SAS programs

Output

- Displaying output obtained from execution of SAS program
- Plots, data summarizing, advanced analysis….

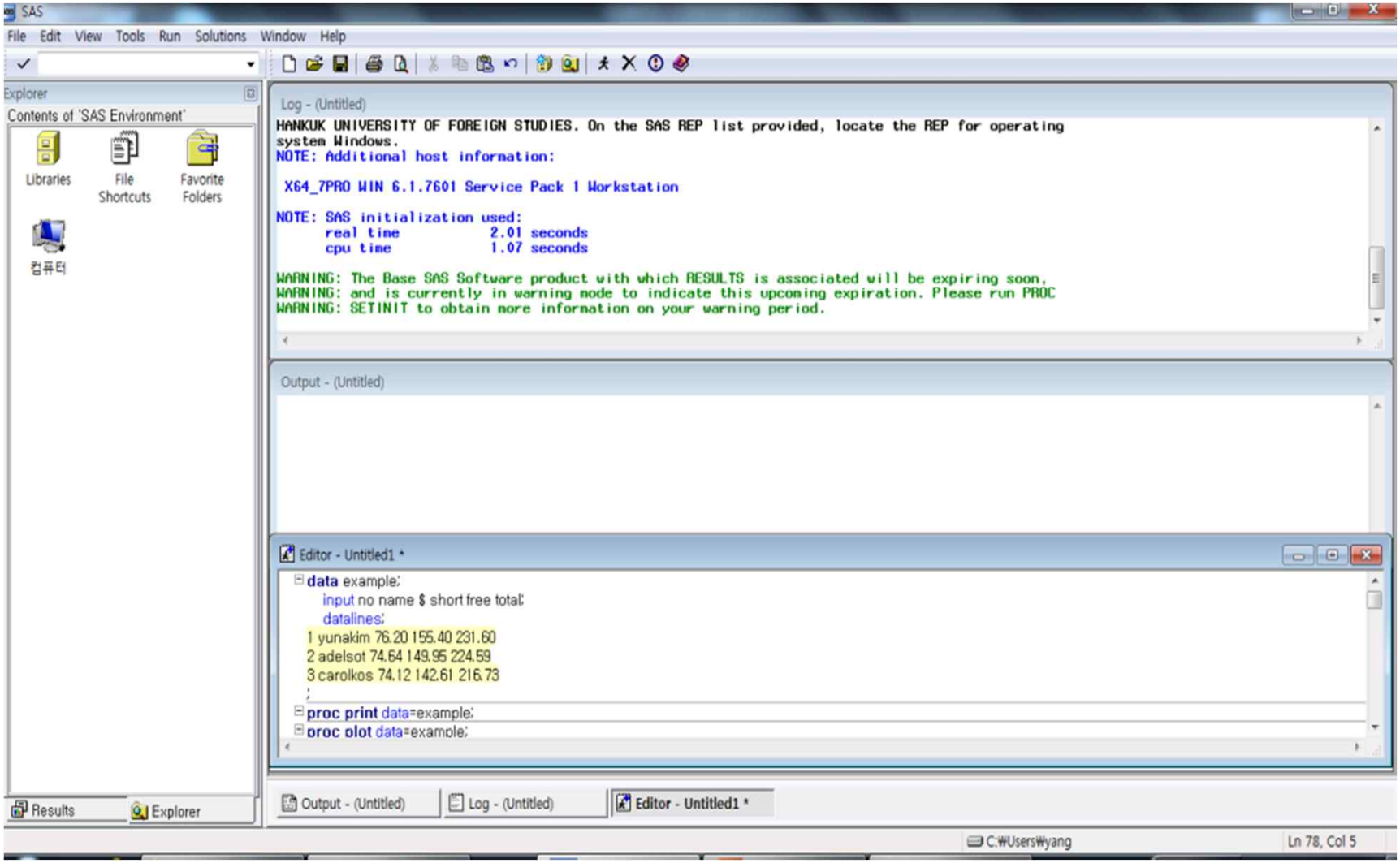
Log

- Reporting progress or errors of SAS procedures

Etc.

- Explorer (Libraries)
- Results

SAS windows


SAS
File Edit View Tools Run Solutions Window Help
Explorer
Contents of 'SAS Environment'
Libraries
File Shortcuts
Favorite Folders
컴퓨터
Log - (Untitled)
HANKUK UNIVERSITY OF FOREIGN STUDIES. On the SAS REP list provided, locate the REP for operating system Windows.
NOTE: Additional host information:
X64_7PRO WIN 6.1.7601 Service Pack 1 Workstation
NOTE: SAS initialization used:
real time 2.01 seconds
cpu time 1.07 seconds
WARNING: The Base SAS Software product with which RESULTS is associated will be expiring soon,
WARNING: and is currently in warning mode to indicate this upcoming expiration. Please run PROC
WARNING: SETINIT to obtain more information on your warning period.
Output - (Untitled)
Editor - Untitled1 *
data example;
input no name $ short free total;
datalines;
1 yunakim 76.20 155.40 231.60
2 adelsot 74.64 149.95 224.59
3 carolkos 74.12 142.61 216.73
;
proc print data=example;
proc plot data=example;
Results
Explorer
Output - (Untitled)
Log - (Untitled)
Editor - Untitled1 *
C:₩Users₩yang
Ln 78, Col 5

Basic rules for SAS statements

▷ Each SAS statement must end with a semicolon ';'.

▷ No difference between capital and small letters. (A = a)

▷ You can begin a SAS statement at any column of a line and also can continue it on another line.

▷ You can write several statements in one line if they are separated by semicolons.

▷ You can omit **run;** between procedures. But, It must appear at the end of procedure statements.

▷ No blank is allowed for SAS names.

▷ The maximum length of SAS names is 32.

▷ You should start with a letter or '_' for SAS names.

▷ Comment : Statements inside '/* */' or starting from '*' are not executed.

SAS libraries

WORK

- Temporary (or working) library
- Reset whenever SAS restarts.

User defined libraries

- You can create your own libraries.
- Stored permanently unless you delete it.