



Republic of the Philippines
Department of Education
National Capital Region
Schools Division Office – Muntinlupa City

**SPECIAL PROGRAM IN TECHNICAL VOCATIONAL EDUCATION (SPTVE)
COMPUTER SYSTEMS SERVICING 8 Q3-W2**

I. Topic: **COMPUTER MEMORY**

II. Objectives:

1. Identify object/s or component to be measured, computer memory types and technologies.
2. Write the appropriate computer memory specification and arrange the steps in configuring RAM in the computer system.
3. Value the importance of computer memory in the computer system and the use of OHS when performing the configuration.

III. Brief Introduction of the Lesson

Computer memory is used to store information in the computer and it has two types; Computer has two types of memory; RAM and ROM. They have their own unique function that helps the computer to function well. The following are information about RAM and ROM:

	ROM	RAM
Stands for	Read Only Memory	Random Access Memory
Storage Capabilities	Non-volatile	Volatile
	Does not require a constant source of power to retain information stored on it.	Requires a constant source of power to retain information. When power is lost or turned off, a RAM chip will lose the information stored on it.
Storage Capacity	4 to 8 Mb	64Mb to 16Gb
	Used in startup process.	Used in normal operation of computer after starting up and loading an operating system.
Writing data	Slow process	Faster process
	chip	card
Types	PROM, EPROM, EEPROM	FPM RAM, EDO RAM, BEDO RAM, SD RAM, RD RAM, DDR RAM, DDR2 RAM, DDR3 RAM, DDR4 RAM

Memory Specification:

Type (see # of pins/notch position), Number of pins (depends on type of RAM), Slot Connected, Bit technology (8-bits per IC), CAS latency (CL#), Storage Capacity (Mb/Gb/Tb), Memory Speed (Hertz), Brand, Serial Number, Model, Memory Redundancy (Parity, Non-Parity, ECC)





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Example:

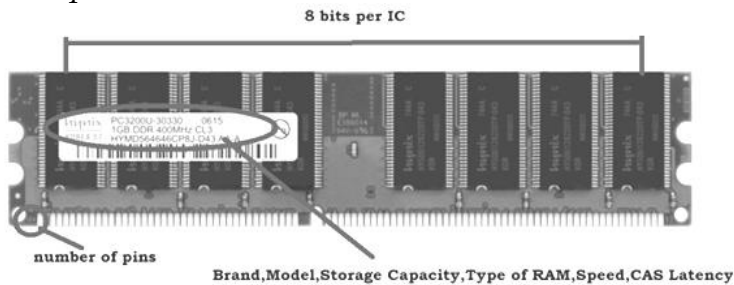


Image Source: <https://tinyurl.com/y2fsra6c> on 01/11/21

Specification:

Brand: **Hynix**
Storage Capacity: **1 Gb**
Type of RAM: **DDR**
Speed: **400MHz**
CAS Latency: **CL3**
No of Pins: **184**
Bit technology: **64 bits**

IV. Activities:

Directions: Answer all the activities on a separate sheet of paper.

Activity 1
Types of Memory

Directions: Write the appropriate number of pins and type of memory slot where each RAM is connected to complete the table.

Type of RAM	No. of Pins	Memory Slot
FPM RAM	30 pins	1. ____
EDO RAM	72 pins	SIMM
BEDO RAM	72 pins	2. ____
SD RAM	3. ____	DIMM
RD RAM	5. ____	4. ____
DDR RAM	184 pins	6. ____
DDR2 RAM	7. ____	DIMM
DDR3 RAM	240 pins	8. ____
DDR4 RAM	9. ____	10. ____

Activity 2
Memory Technologies and Writing of Specification

Set A. *Directions:* Using what you have learned about RAM technologies; evaluate what RAM technology has been described below. Choose your answer in the box then write it on a separate sheet of paper.

Level of Redundancy	Memory Speed	Overclocking
CAS Latency	Hyperthreading Technology	Bit technology





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- When you enter a command in your computer, it tends to have a delay when showing the file due to the number of clock cycles it has to pass through to get to its desired location and access the information.
- When your computer memory processed the information in a fast rate and sends the information to the CPU.
- While using your computer, it suddenly crashes or sends an error code.
- It is the number of calculations they can perform and it can be identified by counting the number of IC in the memory itself.

Set B. *Directions:* Write all the specifications of RAM seen in the picture below.
(See the sample writing of specification in the lesson)

1. Kingston DDR 4GB
266MHz CL1.5 Parity
2. DDR3 533MHz ECC
16Gb with 8 IC HP
3. Hynix 64Gb
DDR4 DIMM
Non-parity
4. Infenion 1Gb
DDR 333MHz
S/N:HY2371456
5. Samsung ECC
SDRAM 512Mb
133MHz with 8 IC

Activity 3
Disassembling and Assembling RAM in RAM Slot

Set A. *Directions:* Listed below are steps in disassembling and assembling RAM in RAM slot, arrange the letters/blocks to show the proper steps in doing the activity for items number 1 to 6.

- A. Apply equal pressure on both side of the card until the lock on each side click.
- B. Match and align the pin pattern of RAM card on the RAM Slot.
- C. Remove RAM card by releasing the lock on each side of the slot.
- D. Prepare all the materials needed in the activity. (RAM card, Motherboard, Anti-static Mat)
- E. Shut down the computer, open the system case and discharge yourself.
- F. Carefully lift the RAM by holding on the side without touching the gold pins.



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Set B. Directions: Answer the following questions briefly.

7. What might happen if you touch the gold pins of the RAM?
8. Why does RAM/Memory important in the computer system?
9. What are the suggested safety measures when working with the system unit particularly the memory?
10. If the RAM is not properly inserted into the RAM slot, do you think it will work? Explain your answer.

V. Assessment:

Directions: Write the letter of the correct answer on a separate sheet of paper.

1. If ROM means Read Only Memory then what does RAM mean?
A. Random Access Memory
B. Readily Accessible Memory
C. Ready Access Memory
D. Read Alternative Memory
2. Which of the following type of memory is the most recently invented?
A. EDO RAM
B. DDR3 RAM
C. RD RAM
D. SD RAM
3. The maximum storage capacity of RAM is?
A. 16Mb
B. 2Gb
C. 10Gb
D. 16Gb
4. Adrian is having a RAM with the following specification, Samsung, 2Gb, DIMM, CL2.5, 333MHz, DDR2, ECC, 64 bits. Which of the following specification identifies the storage capacity of her RAM card?
A. 2Gb
B. CL2.5
C. 64 bits
D. 333MHz
5. Jenna is answering her assignment in CSS about writing specifications of memory. She got an answer of Hyatech, 4Gb, DIMM, CL3.0, 333MHz, DDR2, 64 bits. Which of the following specifications identifies the type of RAM she has?
A. 4Gb
B. DDR2 RAM
C. 333 MHz
D. DIMM

VI. Reflection:

Directions: Answer the following questions briefly on a separate sheet of paper in paragraph form.

- What is the most interesting or important things you have learned today and why?
- What will be the benefits of this lesson in your daily life or in the future?
- What do you want to learn more about Memory and why?
- What problems did you encounter in answering the activities?

References:

- Memory definition- <https://www.computerhope.com/jargon/m/memory.htm> retrieved on 09/29/20
- Difference between ROM and RAM - <https://www.computerhope.com/issues/ch001361.htm> retrieved on 09/29/20
- Memory module - Source: <https://tinyurl.com/y5c5xs3j> retrieved on 09/28/20

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