Functions and uses of primary storage devices

BISTABLE DEVICES, PROM, EPROM, EEPROM, FLASH
Specific Objective

Student should be able to:

• *outline* the functions and uses of primary storage devices;
Primary Storage Devices

- Primary storage device holds data to be accessed by the computer.
- There are two types of primary storage devices:
  - Volatile
  - Non-volatile storage devices.
Volatile/Non-volatile

- Volatile storage devices lose their content when the power is turned off.
- Non-volatile storage devices retain their content when power is turned off
Non-Volatile Storage

- **ROM** (Read-Only Memory)

The ROM is a permanent storage device that contains data that cannot be changed. Usually it is a set of instructions that tells the computer what to do when it starts up.
Non-Volatile Storage

Programmable Read Only Memory (PROM)
- Can be programmed with a special machine
- Once it is programmed, its contents cannot be changed (programmed once)
Non-Volatile Storage

**Erasable Programmable Read Only Memory (EPROM)**

- Designed so its contents can be erased using ultraviolet light, then its contents be reprogrammed.
- Can be reprogrammed several times
- Contents do not last as long as other types of ROM
- Must protect EPROM chips from exposure to sunlight
Non-Volatile Storage

Electrically Erasable Programmable Read Only Memory (EEPROM)

- Typically used to store code
- Similar to EPROM, however the erase operation is performed electrically
- Data maybe erased and rewritten
Random Access Memory (RAM)

- RAM holds program and data that is currently being processed by the computer.
USB Flash

- Used for easy and fast information storage in devices such as digital cameras and video games
- A type of EEPROM chip
- Stores large amounts of data
- Low cost
- Non-volatile
- Electrically re-programmable
- Fast (to read, but not to write)
Bistable Devices

- These are the foundation of digital electronics
- A bi-stable device can exist in two possible states, similar to an on/off switch
- Another example is a key on a keyboard – it can be either up/down
References

- Oxford Information Technology for CXC CSEC by Glenda Gay, Ronald Blades
- CXC Information Technology by Kelvin Skeete