

Serial (Chronological)

- All data types except String has fixed length.
- Data in string variables varies the record length.
- Variable record size saves on tape physical length.
- Number of records position of records is unknown.
- Record can only be accessed serially.

Tape

A || C || E || B || D

Records entered in chronological or "time of arrival" order.

Tape

1 || 2 || 3 || | | |

Records' Length is "variable".

StuID	INT	4	Fixed
StuName	STR	20	variable size
StuClass	STR	4	"
StuAdd	STR	30	"
StuFee	CURR	8	Fixed
StuDOB	Date	8	"
isFeePaid	BOOL	1	"

Sequential

- * Take a second tape
- * Copy new record and old records from Tape1 into Tape2, all in sequence.
- * Delete Tape1 and Rename Tape2 to Tape1.

~~Tape 1 Deleted~~

A || D || G || J || x || y || z ||

B

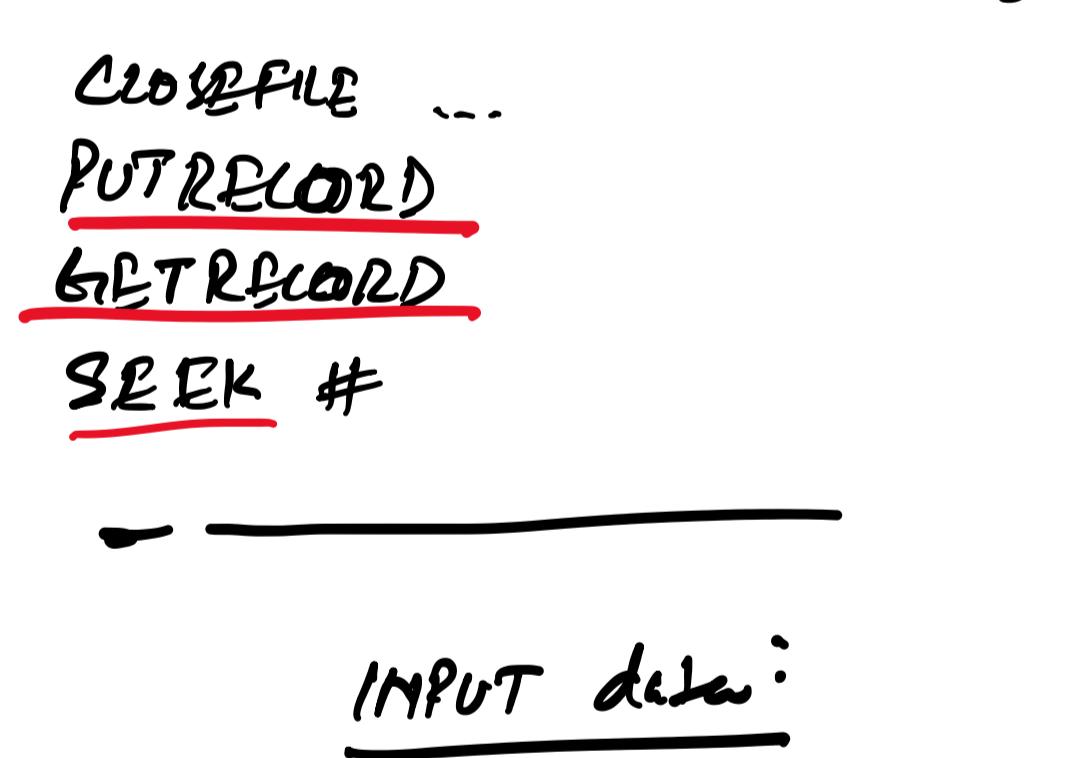
Renamed
Tape2 Tape1

A || B || D || G || J || x || y || z ||

Because of variable record length no record can be accessed directly.

Random:

- In Random file every record can be reached directly.
- Random files are binary/in machine code.
- String data types' size is required to be fixed to make whole record size fixed.
- We can save only one variable as a record.



StuID INT 4 Fixed

StuName STR * 20 Fixed

StuClass STR * 4 "

StuAdd STR * 30 "

StuFee CURR 8 Fixed

StuDOB Date 8 "

isFeePaid BOOL 1 "

Fixed Record 75 Bytes

Length:

INPUT data: StuRec

INPUT "ID:", data.StuID

INPUT "Name:", data.StuName

OPENFILE "abc.rnd" FOR RANDOM

FOR i ← 1 TO 5

INPUT data ✓

SEEK i

PUTRECORD "abc.rnd", data

NEXT i

CLOSEFILE "abc.rnd".

Type StuRec

DECLARE data : StuRec.

DECLARE StuID : INT

DECLARE StuName : STR * 20

DECLARE StuClass : STR * 4

DECLARE StuAdd : STR * 30

DECLARE StuFee : CURR

DECLARE StuDOB : Date

DECLARE isFeePaid : BOOL

EndType