

File Organization

MODULE TEST

You may wish to review the exercises or audio-visual material before taking this module test. Once you begin the test, do not refer to the course materials.

There are seven questions.

1. Match each of these data organization terms with its definition.

Data Organization Term	Definition
Key Field	_____
File	_____
Record	_____
Field	_____
Character	_____
Library	_____

Definitions

- A collection of units having one or more common characteristics or functions.
- A single item of specific information.
- A collection of files stored on magnetic tapes or disks.
- Used for identifying and locating any part of a file.
- Unit of usable data, represented within the computer as a combination of bits.
- A group of related items that are treated as a unit.

2. Indicate whether each of these statements refers to a master (M), a transaction (T), or a report (R) file by writing the correct letter in the space provided.

Statement	File Type
Data extracted for special purpose.	_____
Relatively permanent information.	_____
Used for handling updates.	_____
Contains transitory data.	_____
Example: payroll file.	_____
Example: a list of overdue customer accounts.	_____
Example: a list of inventory additions	_____

3. Indicate whether each of these characteristics refers to batch (B) or on-line (L) processing by writing the correct letter in the space provided.

Characteristic	Type of Processing
Transactions are processed sequentially.	_____
More accurate updating of master file.	_____
Transaction is executed when it is received.	_____
Transactions are sorted.	_____
Transactions are stored until a sufficient number is collected.	_____

4. Check the appropriate box or boxes next to each statement to indicate which file method or methods best answer the statement.

	Sequential	Direct Access	Indexed Sequential
a. Records are physically ordered by their key field.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Records are physically stored in no particular order.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Records can be accessed directly using a table.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Records can be accessed directly by calculating an address from the key.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Records can be accessed, one after the other, in alphabetical order.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. New records are added to the file by reorganizing the entire file.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. New records require that the table also be updated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Most efficient in use of storage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Requires the most complex software.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Not efficient when most of the file's records must be accessed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Perform a binary search by studying this sample index and then filling in the requested information.

Entry Number	Key	Address
1	110	167
2	157	671
3	286	1166
4	294	743
5	333	543
6	400	360
7	462	705
8	595	1023

NOTE

The search key is 333; there are three tries.

- Write the entry *number* being tested in each try.
 - Try one tests entry number ____ .
 - Try two tests entry number ____ .
 - Try three tests entry number ____ .
- Indicate entries that are eliminated in each try by writing the entry *numbers* in the spaces provided. *Leave blanks if no entries are eliminated.*
 - Try one eliminates entry number(s) ____ _ _ _ .
 - Try two eliminates entry number(s) ____ _ _ _ .
 - Try three eliminates entry number(s) ____ _ _ _ .
- The try that finds the correct entry is try number ____ .

6. In the space provided, write a T if the statement correctly describes the pointer field in a list organization and an F if it does not.

Description	T or F
Depends in part on sequential storage of records.	_____
Contains storage location of the next record in the sequence.	_____
Links successive records.	_____
Access time does not differ for sequential vs unsequential files.	_____
Facilitates addition and deletion of records from the files.	_____
One list of pointers can reference several keys.	_____
Contains storage address of the next record in the sequence.	_____

7. Indicate whether the following statements describe the hashing (H) or the indexing (I) method of addressing records by writing the correct letter in the space provided.

Statement	Addressing Method
Almost impossible to use with a file that has more than one key field.	_____
Address of a record is computed from the record's key field.	_____
Each record has an entry in a file table.	_____
Searching improved through the use of binary search techniques.	_____
Two or more records may contend for the same location.	_____
Storage address of record computed by adding starting address of the file to a numerical equivalent of the key field letters.	_____
Ordered sequentially by keys.	_____