

# IBM Natural Job Interview Questions And Answers



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## IBM Natural Interview Questions And Answers Guide.

### Question - 1:

Explain Is it possible to code GOTO statement in NATURAL? if yes please provide the syntax of the same?

#### Ans:

No, There is not GOTO statement in Natural.  
There is a Perform statement which is used to call a subroutine.  
A subroutine is a block of code which is to be executed several times within an object.

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### Question - 2:

Tell me what type of files we can process thru file-aid?

#### Ans:

Flat - sequential or VSAM files

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### Question - 3:

Explain why do we use file-aid for sequential files?

#### Ans:

We use File aid for sequential files for the following reason:  
1. Copy from one file to another only selected amount of records.  
2. To browse or edit through the file using a copybook.  
3. For impact analysis on a particular file.

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### Question - 4:

Explain how to ftp the natural program to desktop? (from mainframe to pc), is it possible?

#### Ans:

Yes, it is possible. The below JCL can list the source of the Natural program to a dataset and it can be very well downloaded using option 6.  
//STEP1 EXEC NATBATT  
//SYSOUT DD SYSOUT=\*  
//CMPRINT DD DSN=USERID.MYNATPGM,  
// DISP=(NEW,CATLG,DELETE),  
// SPACE=(CYL,(1,1),RLSE),RECFM=FBA,LRECL=133  
//SYSIN DD \*  
LOGON NATLIB  
L MYNATPGM  
FIN  
/\*  
NATLIB = YOUR NATURAL LIBRARY  
MYNATPGM = YOUR NATURAL PROGRAM

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### Question - 5:

How do you pass data from a Natural Program to an External Subroutine? Can it share the LDA of Program as in Internal Subroutine?

#### Ans:



Parameters can be passed with the PERFORM statement from the invoking object to the external subroutine. These parameters must be defined either in the DEFINE DATA PARAMETER statement of the subroutine, or in a parameter data area used by the subroutine.

An external subroutine can access the global data area used by the invoking object.

In addition, an external subroutine can have its own local data area, in which the fields that are to be used only within the subroutine are defined.

However, an external subroutine cannot have its own global data area.

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### Question - 6:

What happens when you issue a ESCAPE ROUTINE in a program? Will there be any compilation /Run time erro?

**Ans:**

Escape Routine is generally used to interrupt the processing of Subprogram or Subroutine to return Control back to the next statement from where this subprogram or routine was called.

This statement will return an error if not placed within a subprogram, subroutine or processing loop.

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### Question - 7:

Suppose You are processing an input file in a Natural program and you want the program to fail if the file is empty. What command you use in Natural to force it to fail?

**Ans:**

You use the following steps to check whether the input file is empty

Step A. Read work file #WK-Number once #WK-Record

Step B. At End of File

Write "Input file is Empty"

End-Endfile

The first step will read the first record in the file and the next step will see the End of File condition. If the File is empty, the program will write that we have an Empty input file to spool.

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### Question - 8:

Explain the difference between External subroutine and subprogram?

**Ans:**

An External Subroutine has got access to the Caller's GDA where in the subprogram does not have.

The subprogram is like blackboxes as they are not aware of the caller's environment. They take only the parameters and process it and return the values. e.g. One natural subprogram can be called through middle tiers like Entirex and Vitria from a different environment (Let's say a dot net or java developed web interface). However a similar interface can not call a natural external subroutine.

As far as calling is concerned you use callnat for subprogram and perform for external subroutine.

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### Question - 9:

If the number of parameter is more than the expected then NAT0919 error is displayed. How many parameter are allowed in a CALL and CALLNAT statement?

**Ans:**

CALL statement can have max 128 parameter

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### Question - 10:

What is COBOL coding sheet?

**Ans:**

1-6 sequence numbers.

7 (\*) for comment (-) for continue (D) for debugging.



8-11 called as Area-A in this Area we can write Divisions, Paragraphs, sections, Level numbers.  
12-72 called as Area-B in this area we can write cobol executable statements like select, accept, display.  
73-80 is ignored area by compiler but we can see in source Listing.

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### Question - 11:

Can we see the copy book length using file-aid?

#### Ans:

yes we can find out the copy book length by using fileaid

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### Question - 12:

How are you going to remove duplicates from the file that is being read?

#### Ans:

steps are as below

1. file should be in sorted order
2. you can use either at break statement on the descriptor and then do the validation or you can used descriptor field for comparison of second record and first record, if the descriptor values are same then escape top

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### Question - 13:

Can you explain control variable in online screens?

#### Ans:

A control variable is used to dynamically set attribute and colour definitions for a field or group of fields depending upon a program condition. For example, Consider an order processing screen that allows you to create new contracts, modify existing contracts and look-up paid-up contracts. The screen used for all these functions is the same. However, when a paid-up contract is shown to the user, you do not expect it to be displayed in a modifiable state. So, you protect all the fields of the map and show it like "read only". However, for modifying an existing, non-paid-up map, you enable certain fields. So, control variables can be used in scenarios like this to dynamically set the attributes of the field.

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### Question - 14:

Explain ADABAS basic concepts. Like inverted list, address converter, data storage?

#### Ans:

ADATABASE the adaptable database, is a high-performance, multithreaded, database management system for mainframe platforms where database performance is a critical factor. It is built on INVERTED LIST model.

Inverted List: it is used to resolve Adabas search commands and read records in logical sequence, is built and maintained for each field in an Adabas file that is designated as a key field or "descriptor". It is called an "inverted" list because it is organized by descriptor value rather than by ISN.

ADDRESS CONVERTOR: it contains the RABN's in ISN order. It determines the physical location of a record. It is an index that maps the logical identifier of a record (that is, the ISN) to the relative Adabas block number (RABN) of the Data Storage block where the record is stored.

DATA Storage: It stores the actual record in the order in which it was entered

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### Question - 15:

What is a hyperdescriptor? How does it work?

#### Ans:

It is a special kind of descriptor, It is an extension of Super descriptor and can have maximum of 20 fields. The hyperdescriptor option can be used to generate descriptor



values based on a user-supplied algorithm. With hyperdescriptors, "fuzzy" matching is possible; i.e., retrieving data based on similar rather than on exact search criteria. Hyperdescriptors allow multiple virtual indexes, meaning that several different search index entries can be made for a single data field.

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### Question - 16:

What is the quality process in development?

#### Ans:

When developing a new program, make sure that you remove unwanted fields or views that are declared inside the DEFINE DATA section. Since when a program is compiled, it picks these fields also in the buffer memory during compilation and resources would be wasted and efficiency is affected.

Do not use unwanted READs inside a FIND statement.

Never use an UPDATE inside a physical READ.

Avoid using COMPUTE statements while performing straight forward addition, subtraction functions, rather use the appropriate ADD, SUB statements for it.

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### Question - 17:

How to create 1 DDM that fetches 3 ADABAS files simultaneously?

#### Ans:

In general the DDM is part of a single Adabas file and we the programmers play around the views of DDMs.

It is possible that there can be multiple views of a same file, but I never heard that there can be one DDM from multiple files.

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### Question - 18:

A field declared as P8 needs to be redefined as Alphanumeric. What would be its new size?

#### Ans:

I think directly this conversion is not possible as packed decimal is used for numeric value fields only.

Since it is p(8) so the numeric value field size should be 15 or 16 as [8 can be either  $(n+1)/2$  i.e.  $(15+1)/2$  or  $(n/2)$  i.e.  $16/2$ ].

So we can say (n15 or 16) will be (P8).

Alternatively (A16 or 15)

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### Question - 19:

Is it possible to declare a GDA for an external subroutine?

#### Ans:

An external subroutine can access the global data area used by the invoking object (Program, Subprogram)

Moreover, parameters can be passed with the PERFORM statement from the invoking object to the external subroutine. These parameters must be defined either in the DEFINE DATA PARAMETER statement of the subroutine, or in a parameter data area used by the subroutine. Programs, Subprograms and Subroutines Programming Guide

In addition, an external subroutine can have its local data area, in which the fields that are to be used only within the subroutine are defined.

However, an external subroutine cannot have its own global data area.

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### Question - 20:

Tell me Can we update with histogram?

#### Ans:

Hitogram retruns the one line output for each key value from the inverted list. for histogram ADABAS does not have access to data storage, therefore we can not do any update add or delete using histogram.

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### Question - 21:

Explain difference between read(1) and read work file once?



**Ans:**

Read(1) file1 in physical sequence:

1. Used to read adabas file.
2. here (1 ) represents the number of record to be read its a processing loop eg

Read(1) file1 in physical sequence

--  
---

end-read

read work file :

1. Used to read flate file.
2. Once option is used to read only one record
3. its not a processing loop

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**Question - 22:**

Explain difference between read work file 1 and read work file once? Why we are using work file once?

**Ans:**

Both used to read sequentila file.

Read work file 1:

1. is a processing loop strating like:

Read work file 1 file1

---  
--

end- work.

Here --> file 1 is file name here and 1 is arbitrary file number which is translated into dataset names CMwk01 in jcl.

read work file once:

1. Reads only one reacord is to be read.

2. there is no processing loop

eg. Read work file once

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**Question - 23:**

How to find occurrence of MU and PE fields in a file?

**Ans:**

Number of occurances in MU and PE can be found by c\*field name.

If Adabas file having MU field 'switch' and has 5 values. then in module you can find it by C\*switch. this will have value 5.

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**Question - 24:**

How to move cursor to a particular field when position is not known?

**Ans:**

If you wish to position the cursor to a specified field, you can use the MARK option,

eg.

INPUT

MARK \*#MAP.#ACTION

USING MAP 'IVCLNTM1'

and and to position to a

particular position within a specified field, you use the

MARK POSITION option.

DEFINE DATA LOCAL

1 #A (A10)

1 #B (N4)

1 #C (N4)

END-DEFINE

\*

INPUT (AD=M) #A #B #C

IF #A = ''

COMPUTE #B = #B + #C

RESET #C

REINPUT FULL 'Enter a value' MARK POSITION 5 IN \*#A

END-IF

END

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**Question - 25:**

How many work file we can code in jcl?



**Ans:**

In older version of ADABAS the limit used to be 32 files.  
So now it will be either the same or more.

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**Question - 26:**

Explain difference between escape(top or bottom) and escape immediate(top or bottom)?

**Ans:**

ESCAPE TOP indicates that processing is to continue at the top of the processing loop. This starts the next repetition of the processing loop.

ESCAPE BOTTOM indicates that processing is to continue with the first statement following the processing loop. The loop is terminated and loop-end processing (final BREAK and END DATA) is executed for all loops being terminated.

Whereas if you specify the keyword IMMEDIATE, no loop-end processing will be performed(i.e.,final BREAK and END DATA is not executed for all loops being terminated).

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**Question - 27:**

How to receive data passed through JCL parm parameter in a Natural program? How Data definition is defined in the program?

**Ans:**

Normally in JCLs calling natural program, data is passed using some control cards. In the natural program, the data is received in the same order using INPUT statement similar to STACK processing.

Data definition in Natural is done using following:

```
DEFINE DATA  
1 #VARIABLE1 (A10) /* Alphabetic variable of length 10  
..  
..  
END-DEFINE
```

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