



Unidade 16 – Programação SQL Embutida Plataforma IBM i – Ambiente de Desenvolvimento



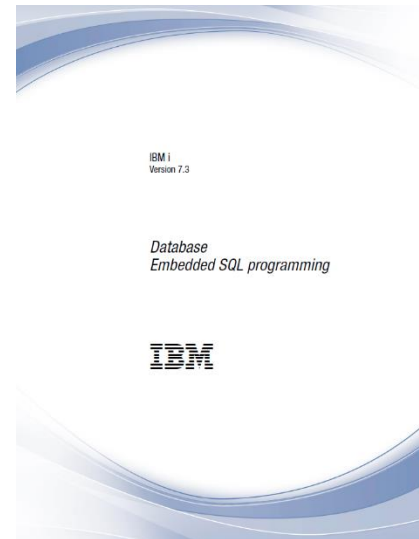
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Doutor em Engenharia
da Computação pela EPUSP



Bibliografia



Sistemas de Banco de Dados
Elmasri / Navathe 6ª edição



Database Embedded SQL
Programming – IBM i



Bibliografia Adicional

- ✓ Programação Estruturada em COBOL – 9ª. Edição – Stern & Stern – LTC – 2002
- ✓ Manual de Cobol Estruturado – McCracken – Editora Campus
- ✓ Programming in Cobol/400 – Cooper, Stern & Stern – 2001- John Wiley & Sons
- ✓ Structured Cobol for the AS/400 – Cooper, Stern & Stern - 2003
- ✓ IBM - ILE Cobol for AS/400 – Reference Sumary
- ✓ IBM – ILE Cobol for AS/400 – Programmer's Guide
- ✓ IBM – ILE Cobol for AS/400 – Reference's Guide





Linguagem Cobol



- ✓ Linguagem orientada a aplicações (negócio);
- ✓ English-like;
- ✓ Desenvolvida em 1959 por um comitê organizado pelo Departamento de Defesa dos Estados Unidos;
- ✓ Participaram do desenvolvimento a IBM, Burroughs entre outras instituições;





Versões do Cobol



- ✓ 1968 – primeira versão standard - ANSI
- ✓ 1974 – segunda versão standard – ANSI
- ✓ 1985 – ANSI X.23
- ✓ 1989 – ANSI X.23a
- ✓ 1993 – ANSI X.23b
- ✓ IBM ILE COBOL – suporte ANSI





Uso do Cobol

- ✓ No fim dos anos 90 o Gartner Group, estimou que dos 300 bilhões de linhas de código fonte existentes no mundo, 80% ou seja – cerca de **240 bilhões de linhas de código – eram Cobol.**
- ✓ Foi reportado também que mais da metade dos aplicativos de **missão crítica** estão desenvolvidos em **Cobol**.





Divisões do Cobol

- ✓ **IDENTIFICATION DIVISION**
- ✓ **ENVIRONMENT DIVISION**
- ✓ **DATA DIVISION**
- ✓ **PROCEDURE DIVISION**





IDENTIFICATION DIVISION

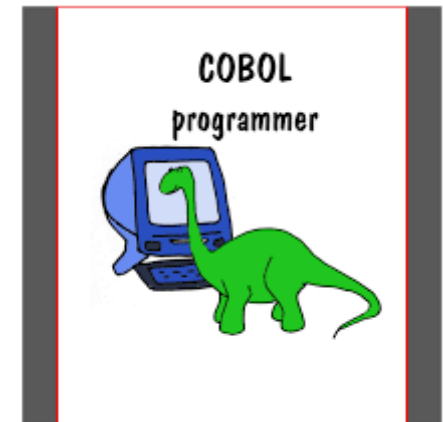
- ✓ Identifica o programa para o sistema operacional;
- ✓ Provê documentação para o programa.





ENVIRONMENT DIVISION

- ✓ Definição de arquivos;
- ✓ Descrição de dispositivos que os utilizam.





DATA DIVISION

- ✓ Descrição de formatos de dados entrada e saída de arquivos;
- ✓ Definição de constantes e áreas de trabalho.





PROCEDURE DIVISION

- ✓ Contém toda a **lógica do programa**;
- ✓ Instruções de leitura/gravação de arquivos, fluxo de controle, etc.





Acesso ao um Servidor Mainframe IBM público

www.pub400.com

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PUB400.COM - your public IBM i s...

www.pub400.com

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RZKH
RECHENZENTRUM KREUZNACH

The public IBM i for everyone!

Welcome to PUB400.COM - your public IBM i system!

PUB400 is the successor of PUB1 - the worlds famous public AS/400 system with more than 40.000 users. Now you will have access to the most recent operating system IBM i 7.3 with all new features you need to learn about the fantastic operating system *IBM i* and its open source capabilities.
The use of this server is *free* for everyone's learning purposes including 250MB of storage. Please take note that commercial usage is not allowed.

For more information on **how to sign up** follow this link: [What is this all about?](#)

This service is provided to you by [RZKH GmbH](#). Visit our pages for interesting IBM i hosting offerings.

Quick links:

- [Signup for PUB400.COM](#)
- [How to migrate from PUB1 to PUB400?](#)
- [User self service SSL](#)
- [Read short introduction](#)
- [Orion development \(test\)](#)
- [Statistics](#)

signup



Signup – Servidor Mainframe IBM público

Arquivo Editar Exibir Histórico Favoritos Ferramentas Ajuda

PUB400.COM - your public IBM i s... x PUB400.COM - your public IBM i s... x +

pub400.com/signup.html

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Sign me up!

To be able to use PUB400.COM we request you to register for getting your *free* account. What do you get?

- 1 *PGMR user profile on our PUB400.COM server
- 250MB of disk storage for your objects
- 2 libraries to store your objects, a third library for save files. No other user can access these objects!

What to consider about this free service?

- currently we do not backup your data! If you need to have a copy, create a save file in your library #3, save your data and grab them by FTP
- No support. We cannot teach you on starting your exploration of IBM i. Please check out the net, we will provide some links to forums and groups
- No high availability. For technical reasons, the system by chance might be slow or not available. If you need professional hosting services, check out our main page at RZKH.DE

A self service page will be provided for password or user profile reset

Now **click here** [SSL](#) to register for PUB400.COM
(If your browser refuses the SSL certificate please check the certificates details for the name CERT_PUB400_COM)

problems using PUB400.COM? Click here: [user self service](#) [SSL](#)

register



Account – Servidor Mainframe IBM público

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https://www.pub400.com/cgi/signup.nd/start?ymode=NEW

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Sign up for your free IBM i 7.3 account

Please enter your first and last name: *

Please enter your street address and / or additional address data:

Enter ZIP and city name:

Select your country:

Enter your email address:*

Do not use a one-time or spam-protected email address. All communications for creating the profile or resetting the password will be done using this address. If you lose access to this email address you will not be able to reactivate your free account!

Select your language:

This setting will affect most of the IBM i system screens, but not your software, this web site or other software. This setting may be changed later.

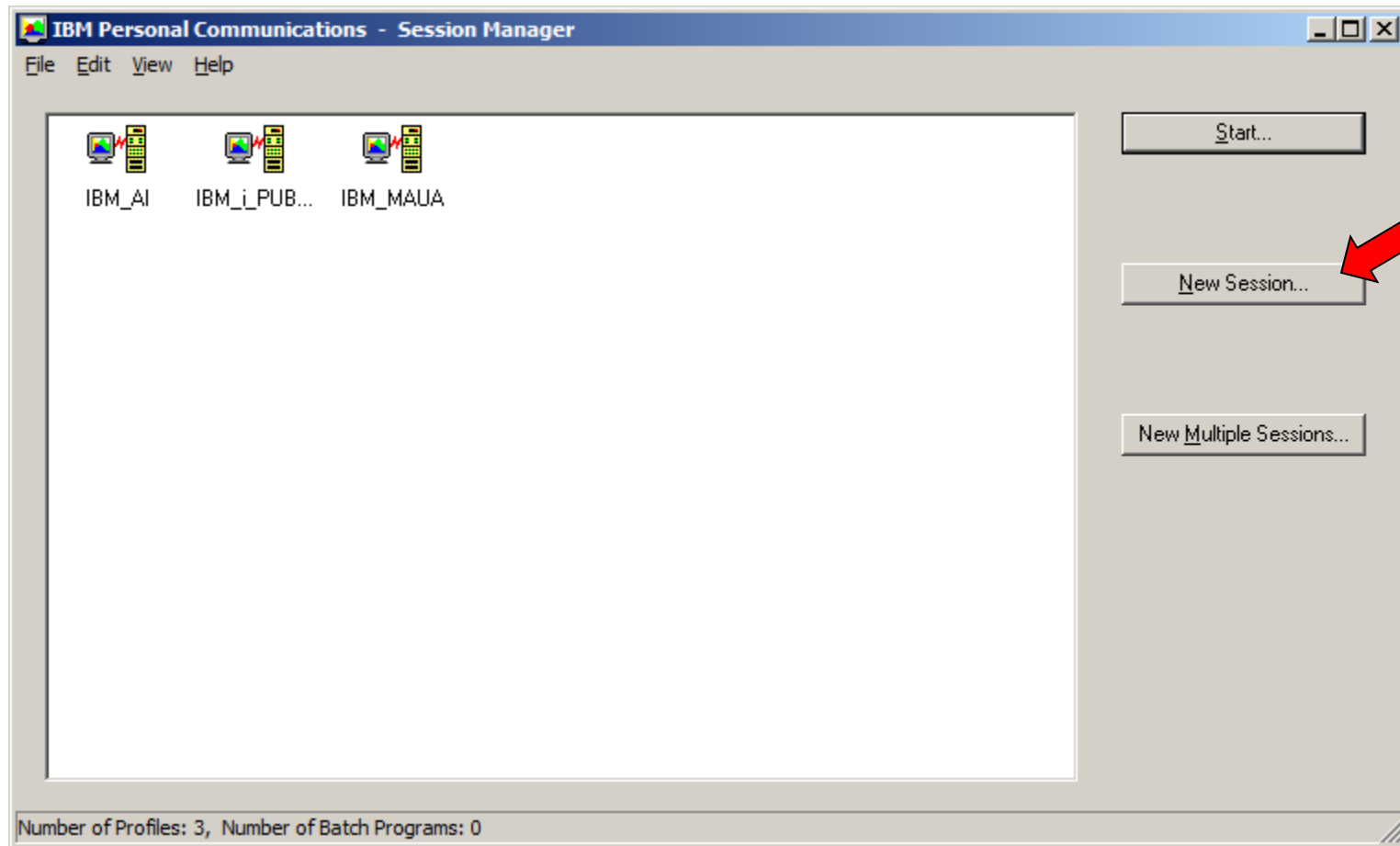
Your preferred user name on PUB400.COM:*

We will check if this name is available. If you had a user profile on PUB1.DE please try this name first, this will simplify data migration. Based on your user name, the names of your data libraries will be chosen by https://www.pub400.com 3.



Conexão – Servidor Mainframe IBM público

IBM Personal Communication





Conexão – Servidor Mainframe IBM público

Customize Communication

Select Connection to Host

Type of Host: **iSeries**

Interface: LAN

Attachment: Telnet5250 over TCP/IP

Link Parameters... Session Parameters...

Connection Overview

Interface Attachment Type of Host

LAN TCP/IP iSeries

Telnet5250 over TCP/IP

- This connection provides access to an IBM iSeries host over a TCP/IP network using TN5250 interface. Support for Service Location Protocol, SSL V3 and TLS1.0 secure layer encryption, load balancing and backup host is also provided.

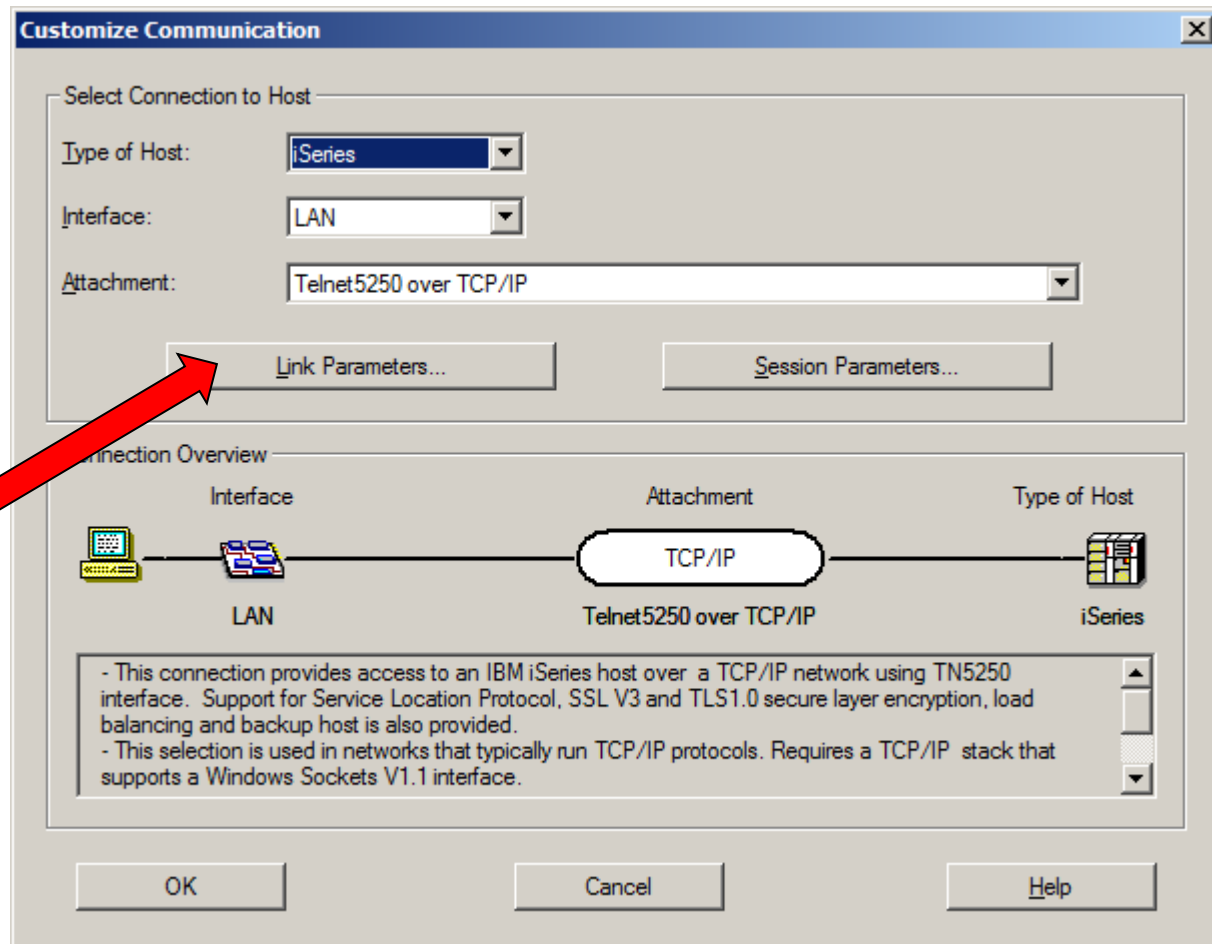
- This selection is used in networks that typically run TCP/IP protocols. Requires a TCP/IP stack that supports a Windows Sockets V1.1 interface.

OK Cancel Help

iSeries



Conexão – Servidor Mainframe IBM público



Link
Parameters...



Conexão – Servidor Mainframe IBM público

Telnet5250

Host Definition | Automatic Host Location | Security Setup | Printer Association

	Host Name or IP Address	LU or Pool Name	Port Number
Primary	pub400.com		23
Backup 1			23
Backup 2			23

Connection Options

Connection Timeout: 6 Seconds

☐ Auto-reconnect

☒ Try connecting to last configured host infinitely

Signon Option

☐ Bypass signon using Kerberos principal

OK Cancel Apply Help

pub400.com



Conexão – Servidor Mainframe IBM público

Telnet5250

Host Definition | Automatic Host Location | Security Setup | Printer Association

	Host Name or IP Address	LU or Pool Name	Port Number
Primary	pub400.com		23
Backup 1			23
Backup 2			23

Connection Options

Connection Timeout: 6 Seconds

☐ Auto-reconnect

☒ Try connecting to last configured host infinitely

Signon Option

☐ Bypass signon using Kerberos principal

OK Cancel Apply Help

Apply



Conexão – Servidor Mainframe IBM público

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help

Welcome to PUB400.COM * your public IBM i server
Server name . . . : PUB400
Subsystem . . . : QINTER
Display name. . . : QPAD115231

Your user name: _____
Password (max. 128): _____

=====
WELCOME TO PUB400.COM - your public IBM i server

** PLEASE NOTE: You are not allowed to use this system
for training purposes on multiple users.
Any commercial usage is not allowed|

>> Please read updated document at PUB400.COM
"Read short introduction" on quick links panel

-> To create user and for help see http://pub400.com
hosted in a unique underground shelter

(C) COPYRIGHT IBM CORP. 1980, 2015.

MA b 05/025
I902 - Session successfully started
```



Conexão – Servidor Mainframe IBM público

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
MAIN                                     IBM i Main Menu
System: PUB400

Select one of the following:

1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
10. Information Assistant options
11. IBM i Access tasks

90. Sign off

Selection or command
==>

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 2015.

MA b                                     20/007
I902 - Session successfully started
```



Encerrando a sessão – Comando SIGNOFF

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
MAIN                                     IBM i Main Menu
System: PUB400

Select one of the following:

  1. User tasks
  2. Office tasks
  3. General system tasks
  4. Files, libraries, and folders
  5. Programming
  6. Communications
  7. Define or change the system
  8. Problem handling
  9. Display a menu
 10. Information Assistant options
 11. IBM i Access tasks

 90. Sign off

Selection or command
==> SIGNOFF

F3=Exit   F4=Prompt   F9=Retrieve   F12=Cancel   F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 2015.

MA  b                                     A                                     10/051
I902 - Session successfully started
```



Reentrando com o usuário

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help

Welcome to PUB400.COM * your public IBM i server
Server name . . . : PUB400
Subsystem . . . : QINTER
Display name. . . : QPAD115231

Your user name: _____
Password (max. 128): _____

=====
WELCOME TO PUB400.COM - your public IBM i server

** PLEASE NOTE: You are not allowed to use this system
for training purposes on multiple users.
Any commercial usage is not allowed|

>> Please read updated document at PUB400.COM
"Read short introduction" on quick links panel

-> To create user and for help see http://pub400.com
hosted in a unique underground shelter

(C) COPYRIGHT IBM CORP. 1980, 2015.

MR b 05/025
I902 - Session successfully started
```



IBM i – Interagindo com o Sistema

- | | |
|--------|---------------------|
| ✓ CRT* | comandos de CREATE |
| ✓ CHG* | comandos de CHANGE |
| ✓ DLT* | comandos de DELETE |
| ✓ DSP* | comandos de DISPLAY |
| ✓ WRK* | comandos de WORK |
| ✓ SND* | comandos de SEND |
| ✓ RCV* | comandos de RECEIVE |
| ✓ SAV* | comandos de SAVE |





IBM i – Ambiente de Desenvolvimento

✓ **STRPDM** – Programming Developer Management

STRPDM

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help

MAIN                                     IBM i Main Menu                                     System:  PUB400

Select one of the following:

1. User tasks
2. Office tasks
3. General system tasks
4. Files, libraries, and folders
5. Programming
6. Communications
7. Define or change the system
8. Problem handling
9. Display a menu
10. Information Assistant options
11. IBM i Access tasks

90. Sign off

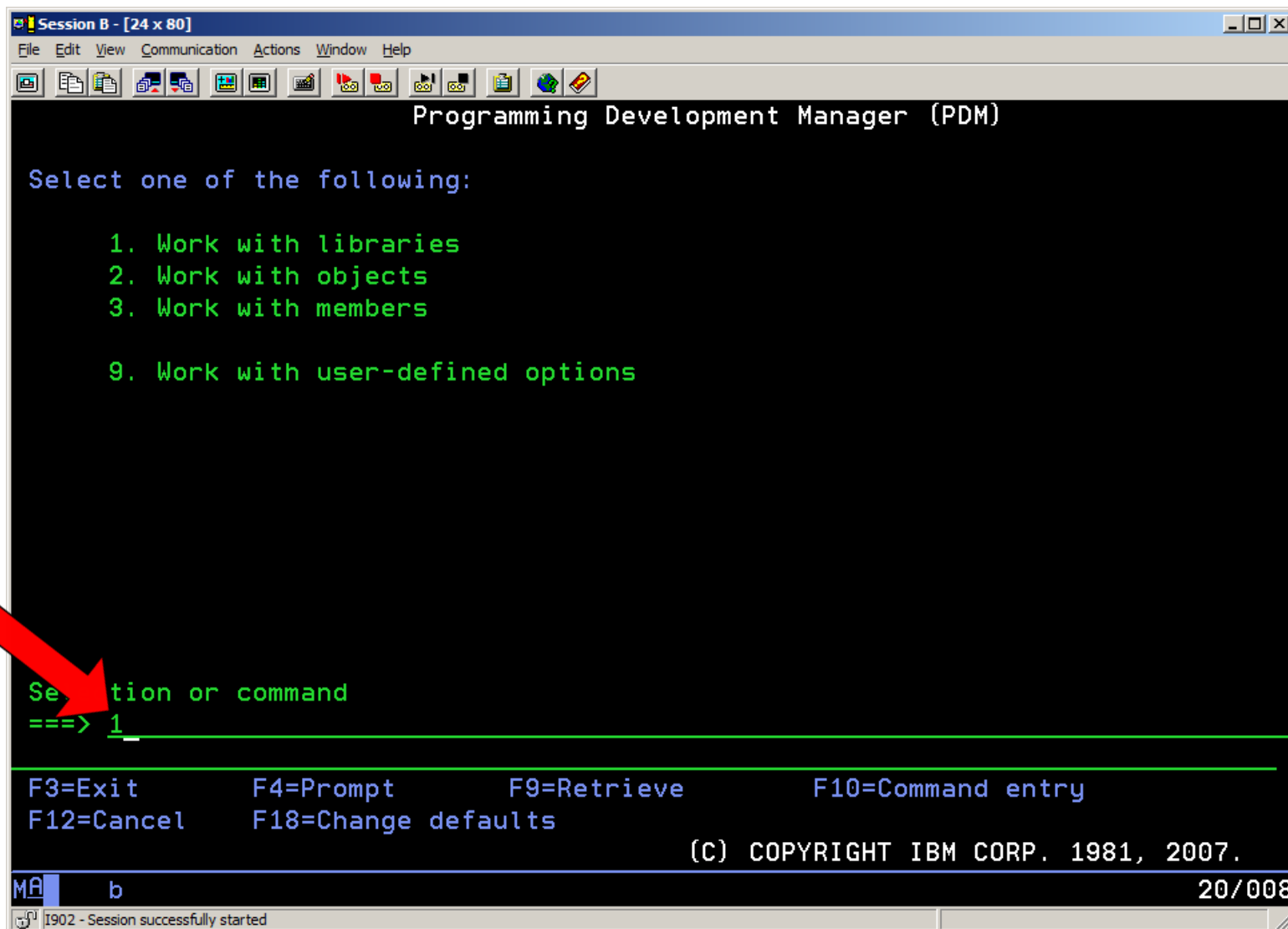
Selection or command
==> STRPDM

F3=Exit  F4=Prompt  F9=Retrieve  F12=Cancel  F13=Information Assistant
F23=Set initial menu
(C) COPYRIGHT IBM CORP. 1980, 2015.

MA b                                     20/014
I902 - Session successfully started
```



IBM i – Ambiente de Desenvolvimento



Opção 1



PDM – Listando bibliotecas acessadas pelo usuário

Session B - [24 x 80]

File Edit View Communication Actions Window Help

Specify Libraries to Work With

Type choice, press Enter.

Library	<u>*LIBL</u>	*LIBL, name, *generic*, *ALL, *ALLUSR, *USRLIBL, *CURLIB
ASP number	<u>*ALL</u>	1-32, *ALL
ASP device	<u>*</u>	Name, *, *SYSBAS, *CURASPGRP

F3=Exit F5=Refresh F12=Cancel

MA b 05/037

I902 - Session successfully started

***LIBL**



PDM – Listando bibliotecas acessadas pelo usuário

```

Session B - [24 x 80]
File Edit View Communication Actions Window Help

Work with Libraries Using PDM                                PUB400

List type . . . . . *LIBL

Type options, press Enter.
  2=Change              3=Copy              5=Display              7=Rename
  8=Display description  9=Save              10=Restore             12=Work with ...

ASP
Device

Opt  Library      Type      Text
---  -
  1  PUB400SYS    *PROD-SYS  $ PUB400.COM global programs
  2  QSYS         *PROD-SYS  System Library
  3  QSYS2        *PROD-SYS  System Library for CPI's
  4  QHLPSYS     *PROD-SYS
  5  QUSRSYS     *PROD-SYS  System Library for Users
  6  QPDA        *PROD-PRD
  7  AVFREITAS1  *PROD-CUR  AVFREITAS (*CURLIB)
  8  QGPL        *PROD-USR  General Purpose Library
  9  QTEMP       *TEST-USR

Bottom

Parameters or command
==>

F3=Exit      F4=Prompt      F5=Refresh      F6=Add to list
F9=Retrieve   F10=Command entry  F23=More options  F24=More keys

MA  b  A  10/002
I902 - Session successfully started
  
```

Biblioteca
CORRENTE





PDM – Criando arquivo de FONTES em Cobol

Comando
CRTSRCPF

```

Session B - [24 x 80]
File Edit View Communication Actions Window Help

Work with Libraries Using PDM                                PUB400

List type . . . . . *LIBL

Type options, press Enter.
  2=Change          3=Copy          5=Display          7=Rename
  8=Display description  9=Save        10=Restore        12=Work with ...

ASP
Device

Opt  Library      Type          Text
---  ---
   1  PUB400SYS    *PROD-SYS    $ PUB400.COM global programs
   2  QSYS          *PROD-SYS    System Library
   3  QSYS2         *PROD-SYS    System Library for CPI's
   4  QHLPSYS       *PROD-SYS
   5  QUSRSYS       *PROD-SYS    System Library for Users
   6  QPDA          *PROD-PRD
   7  AVFREITAS1    *PROD-CUR    AVFREITAS (*CURLIB)
   8  QGPL          *PROD-USR    General Purpose Library
   9  QTEMP         *TEST-USR

Bottom

Parameters or command
==> CRTSRCPF

F3=Exit          F4=Prompt          F5=Refresh          F6=Add to list
F9=Retrieve       F10=Command entry  F23=More options   F24=More keys

MA  b  A  21/016
I902 - Session successfully started
  
```



PDM – Criando arquivo de FONTES em Cobol

Arquivo
COBFONTES

Session B - [24 x 80]

File Edit View Communication Actions Window Help

Create Source Physical File (CRTSRCPF)

Type choices, press Enter.

File	FILE	<u>COBFONTES</u>
Library		<u>*CURLIB</u>
Record length	RCDLEN	<u>92</u>
Member, if desired	MBR	<u>*NONE</u>
Text 'description'	TEXT	<u>*BLANK</u>

Bottom

F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
F13=How to use this display F24=More keys

MA b A 05/059

I902 - Session successfully started



PDM – Criando arquivo de FONTES em Cobol

```

Session B - [24 x 80]
File Edit View Communication Actions Window Help

Work with Libraries Using PDM                                PUB400

List type . . . . . *LIBL

Type options, press Enter.
  2=Change          3=Copy          5=Display          7=Rename
  8=Display description  9=Save        10=Restore        12=Work with ...

ASP
Device
Opt  Library      Type      Text
---  ---
  ___ PUB400SYS    *PROD-SYS  $ PUB400.COM global programs
  ___ QSYS         *PROD-SYS  System Library
  ___ QSYS2        *PROD-SYS  System Library for CPI's
  ___ QHLPSYS      *PROD-SYS
  ___ QUSRSYS      *PROD-SYS  System Library for Users
  ___ QPDA         *PROD-PRD
  ___ AVFREITAS1   *PROD-CUR  AVFREITAS (*CURLIB)
  ___ QGPL         *PROD-USR  General Purpose Library
  ___ QTEMP        *TEST-USR

Bottom

Parameters or command
===>

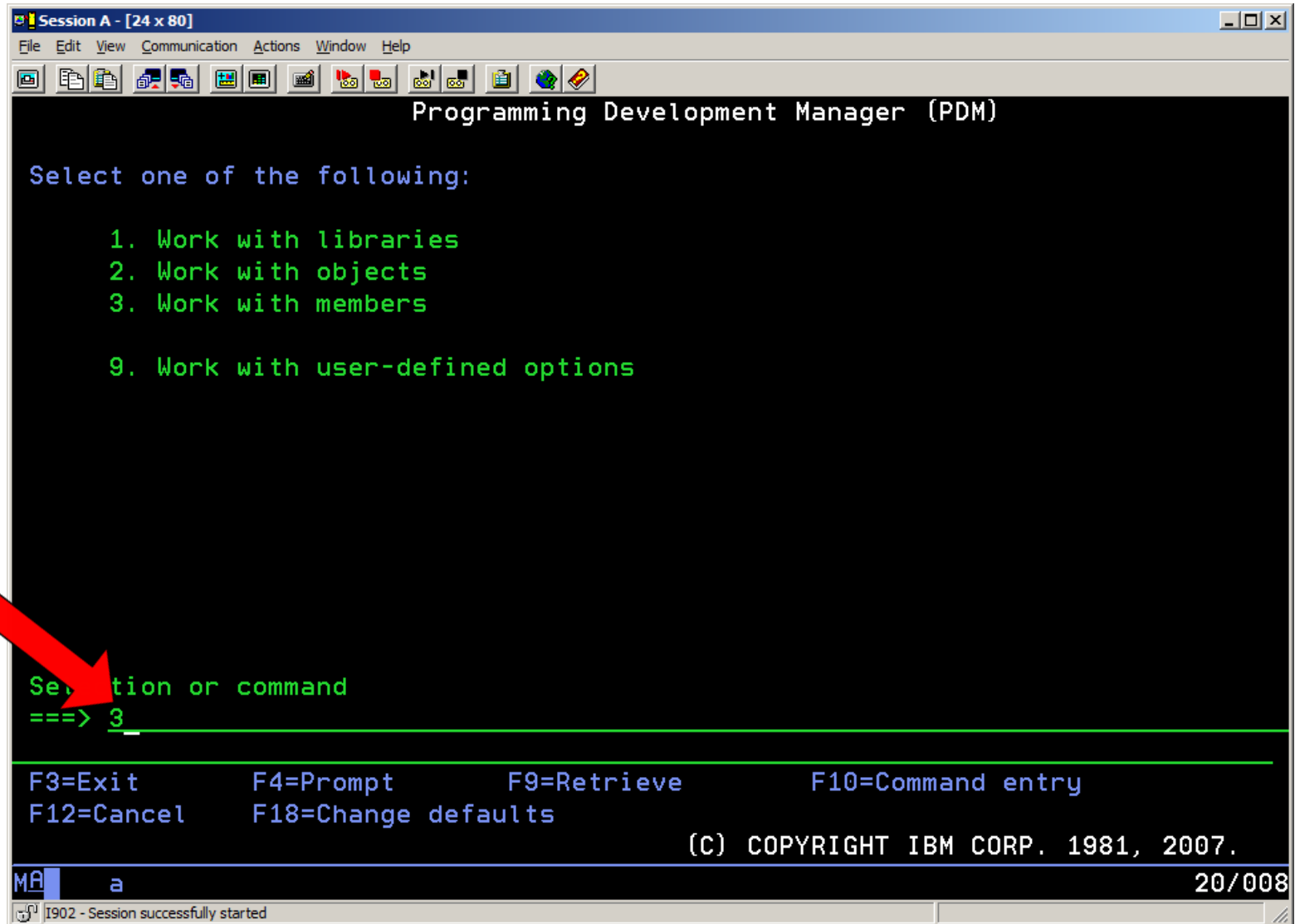
F3=Exit          F4=Prompt          F5=Refresh          F6=Add to list
F9=Retrieve       F10=Command entry   F23=More options    F24=More keys
File COBFONTES created in library AVFREITAS1.

MA  b                                     A                                     21/007
I902 - Session successfully started
  
```



Criando programa fonte em Cobol

✓ **STRPDM** – Programming Developer Management



Opção 3



Criando programa fonte em Cobol

- ✓ Na opção File entrar com o arquivo COBFONTES
- ✓ **Library:** biblioteca corrente do usuário

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Specify Members to Work With

Type choices, press Enter.

File COBFONTES Name, F4 for list

Library AVFREITAS1 *LIBL, *CURLIB, name

Member:

Name *ALL *ALL, name, *generic*

Type *ALL *ALL, type, *generic*, *BLANK

F3=Exit F4=Prompt F5=Refresh F12=Cancel

MA a A 07/034

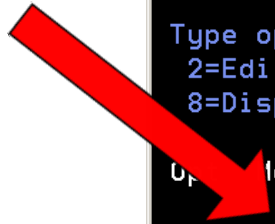
1902 - Session successfully started



Criando programa fonte em Cobol

✓ Sistema retorna informando que o arquivo de Fontes está vazio...

No member...



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Work with Members Using PDM PUB400

File . . . . . COBFONTES
Library . . . . . AVFREITAS1 Position to . . . . .

Type options, press Enter.
2=Edit      3=Copy  4=Delete 5=Display      6=Print      7=Rename
8=Display description 9=Save 13=Change text 14=Compile 15=Create module...

Op Member      Type      Text
(No members in file)

Parameters or command
==>
F3=Exit      F4=Prompt      F5=Refresh      F6=Create
F9=Retrieve   F10=Command entry F23=More options F24=More keys

MA a 13/031
I902 - Session successfully started
```



Criando membro fonte em Cobol

✓ Teclar F6 para criar membro fonte ...

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Work with Members Using PDM PUB400

File COBFONTES
Library AVFREITAS1 Position to _____

Type options, press Enter.
2=Edit 3=Copy 4=Delete 5=Display 6=Print 7=Rename
8=Display description 9=Save 13=Change text 14=Compile 15=Create module...

Opt	Member	Type	Text
(No members in file)			

Parameters or command
==> _____

F3=Exit	F4=Prompt	F5=Refresh	F6=Create
F9=Retrieve	F10=Command entry	F23=More options	F24=More keys

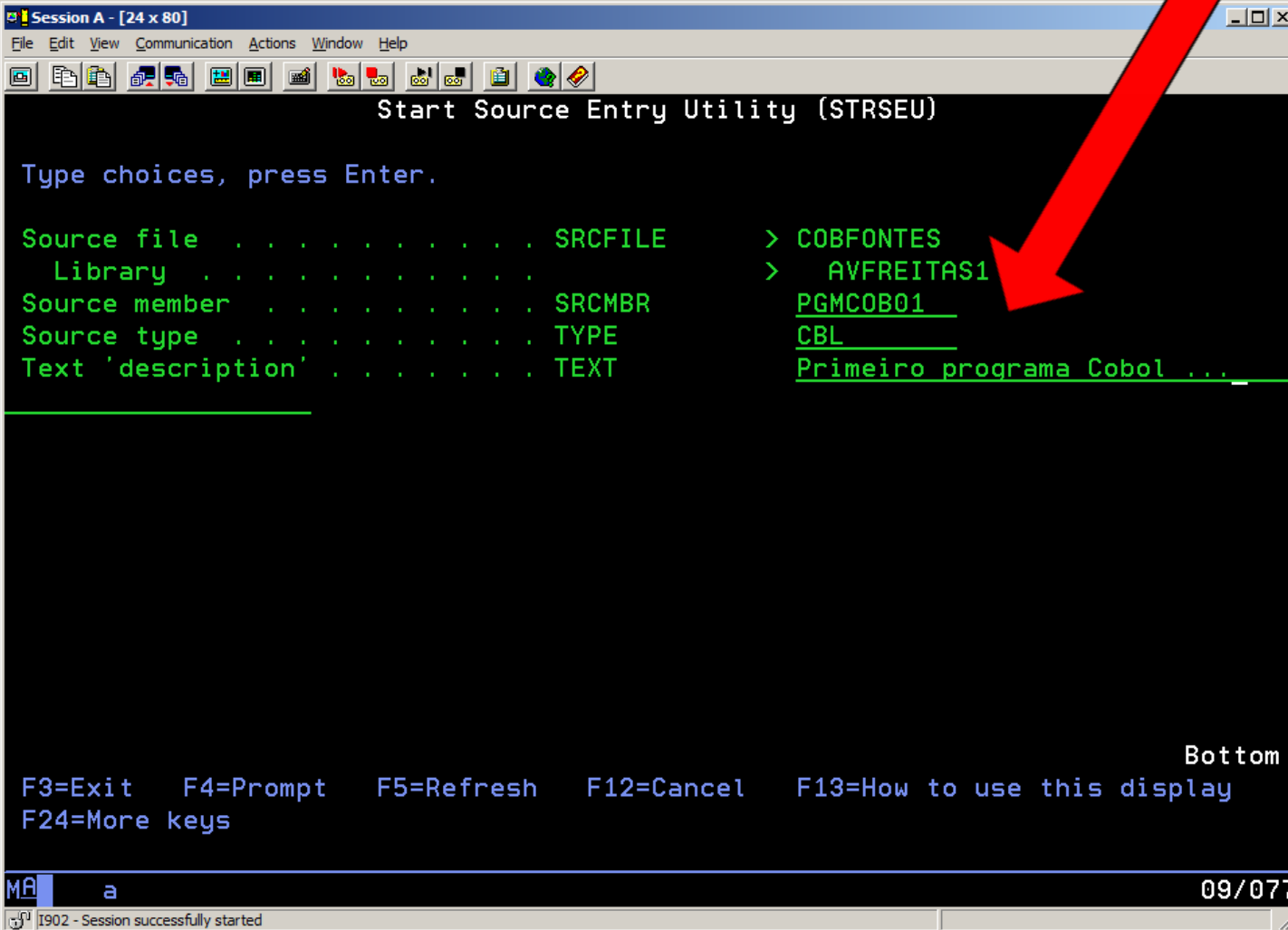
MA a 13/031

1902 - Session successfully started



Criando membro fonte em Cobol

✓ Entrar com o nome do programa fonte e Source Type = CBL



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help

Start Source Entry Utility (STRSEU)

Type choices, press Enter.

Source file . . . . . SRCFILE      > COBFONTES
Library . . . . .                > AVFREITAS1
Source member . . . . . SRCMBR    PGMCOB01
Source type . . . . . TYPE        CBL
Text 'description' . . . . . TEXT  Primeiro programa Cobol ...

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

Bottom

MA a 09/077
I902 - Session successfully started
```



Banco de Dados - Unidade 16 – Programação SQL Embutida – Plataforma IBM i – Ambiente de Desenvolvimento



Laboratório - 1

Compilação de um programa Cobol

```

[ ][ ][ ][ ][ ][ ][ ]IDENTIFICATION DIVISION.[ ][ ][ ][ ][ ][ ][ ]
[ ][ ][ ][ ][ ][ ][ ]PROGRAM-ID.  PGMCOB01.[ ][ ][ ][ ][ ][ ][ ]
      ↑      ↑
      A      B

```

- ✓ A IDENTIFICATION DIVISION é a única divisão que é obrigatória;
- ✓ Todas as outras divisões são opcionais.



Editando programa fonte em Cobol

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Columns . . . : 1 71 Edit AVFREITAS1/COBFONTES
SEU==> PGMCOB01
FMT CB .....-A+++B+++++
***** Beginning of data *****
0001.00 IDENTIFICATION DIVISION.
0002.00 PROGRAM-ID. PGMCOB01.
***** End of data *****

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Cursor F11=Toggle
F16=Repeat find F17=Repeat change F24=More keys

MA a A 12/050
I902 - Session successfully started

```



Salvando programa fonte em Cobol

✓ No prompt SEU: comando SAVE

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Columns . . . : 1 71 Edit AVFREITAS1/COBFONTES
SEU==> SAVE PGMCOB01
FMT CB .....-A+++B+++++*****
***** Beginning of data *****
0001.00 IDENTIFICATION DIVISION.
0002.00 PROGRAM-ID. PGMCOB01.
***** End of data *****

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Cursor F11=Toggle
F16=Repeat find F17=Repeat change F24=More keys

MA a 02/014
I902 - Session successfully started

```




Saindo do Editor – SEU

✓ No prompt SEU: comando FILE ou F3

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Columns . . . : 1 71 Edit AVFREITAS1/COBFONTES
SEU==> FILE PGMCOB01
FMT CB .....-A+++B+++++*****
***** Beginning of data *****
0001.00 IDENTIFICATION DIVISION.
0002.00 PROGRAM-ID. PGMCOB01.
***** End of data *****

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Cursor F11=Toggle
F16=Repeat find F17=Repeat change F24=More keys
(C) COPYRIGHT IBM CORP. 1981, 2013.

MA a 02/014
I902 - Session successfully started

```



Saindo do Ambiente de Desenvolvimento

✓ PDM lista membro fonte salvo

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help

Work with Members Using PDM                                PUB400

File . . . . . COBFONTES
Library . . . . . AVFREITAS1      Position to . . . . .

Type options, press Enter.
  2=Edit      3=Copy  4=Delete 5=Display      6=Print      7=Rename
  8=Display description  9=Save 13=Change text 14=Compile 15=Create module...

Opt  Member      Type      Text
___  PGMCOB01     CBL       Primeiro programa Cobol ...

Parameters or command
===>

F3=Exit      F4=Prompt      F5=Refresh      F6=Create
F9=Retrieve   F10=Command entry  F23=More options  F24=More keys
Member PGMCOB01 in file AVFREITAS1/COBFONTES changed with 2 records.

MA a 11/002
I902 - Session successfully started

```



Preparando Compilação interativa do Cobol

✓ F18 = Change defaults

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help

Work with Members Using PDM                                PUB400

File . . . . . COBFONTES
Library . . . . . AVFREITAS1      Position to . . . . .

Type options, press Enter.
  16=Run procedure      17=Change using SDA      19=Change using RLU
  25=Find string       54=Compare              55=Merge ...

Opt  Member   Type   Text
___  PGMCOB01  CBL    Primeiro programa Cobol ...

Parameters or command
==>

F16=User options      F17=Subset      F18=Change defaults      F21=Print list
F23=More options      F24=More keys

MA  a  11/002
I902 - Session successfully started
  
```



Preparando Compilação interativa do Cobol

- ✓ Job description: *USRPRF
- ✓ Library: (em branco)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]

Change Defaults

Type choices, press Enter.

Object library . . . . . *SRCLIB      Name, *CURLIB, *SRCLIB
Replace object . . . . . N            Y=Yes, N=No
Compile in batch . . . . . Y          Y=Yes, N=No
Run in batch . . . . . N             Y=Yes, N=No
Save session defaults . . . . . Y     Y=Yes, N=No
Save/Restore option . . . . . 1       1=Single, 2=All
Job description . . . . . *USRPRF     Name, *USRPRF, F4 for list
  Library . . . . .                Name, *CURLIB, *LIBL
Change type and text . . . . . Y      Y=Yes, N=No
Option file . . . . . QAU0OPT        Name
  Library . . . . . QGPL             Name, *CURLIB, *LIBL
Member . . . . . QAU0OPT            Name
Full screen mode . . . . . N         Y=Yes, N=No

F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    More...

MA a 17/075
1902 - Session successfully started
  
```



Compilando Fonte Cobol

✓ Opção 14 para a compilação do Fonte Cobol.

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Work with Members Using PDM PUB400

File . . . . . COBFONTES
Library . . . . . AVFREITAS1 Position to . . . . .

Type options, press Enter.
  16=Run procedure      17=Change using SDA      19=Change using RLU
  25=Find string       54=Compare              55=Merge ...

Opt  Member   Type      Text
 14  PGMCOB01  CBL       Primeiro programa Cobol ...

Parameters or command
==>
F16=User options      F17=Subset      F18=Change defaults      F21=Print list
F23=More options      F24=More keys

MA a 18/037
I902 - Session successfully started
  
```



Compilando Fonte Cobol

✓ Mensagem de Retorno do Job de Compilação

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help

Display Messages

Queue . . . . . : AVFREITAS          System: PUB400
Library . . . . : QUSRSYS           Program . . . . : *DSPMSG
Severity . . . . : 00                Delivery . . . . : *BREAK

Type reply (if required), press Enter.
Job 341368/AVFREITAS/PGMCOB01 completed normally on 16-10-07 at 13:22:32.

F3=Exit          F11=Remove a message      F12=Cancel
F13=Remove all   F16=Remove all except unanswered F24=More keys

Bottom

MA a                                                    08/001
I902 - Session successfully started
```



Executando Programa Objeto Cobol

✓ Opção C no campo OPT (Call)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help

Work with Members Using PDM                                PUB400

File . . . . . COBFONTES
Library . . . . . AVFREITAS1                               Position to . . . . .

Type options, press Enter.
  16=Run procedure      17=Change using SDA      19=Change using RLU
  25=Find string       54=Compare                55=Merge ...

Opt  Member      Type      Text
C_   PGMCOB01    CBL       Primeiro programa Cobol ...

Parameters or command
===>

F16=User options      F17=Subset          F18=Change defaults  F21=Print list
F23=More options      F24=More keys

MA a                                                         11/003
I902 - Session successfully started
  
```



Laboratório – 2

Compilação de um programa Cobol – “ Hello, World...”

IDENTIFICATION	DIVISION.
PROGRAM-ID.	PGMCOB02.
PROCEDURE	DIVISION.
100-INICIO.	
	DISPLAY "Hello, World".

↑

A

↑

B



Laboratório - 2

Compilação de um programa Cobol – " Hello, World... "

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Columns . . . : 1 71 Edit AVFREITAS1/COBFONTES
SEU=> PGMCOB02
FMT CB .....-A+++B+++++*****
***** Beginning of data *****
0001.00 IDENTIFICATION DIVISION.
0002.00 PROGRAM-ID. PGMCOB01.
0003.00 PROCEDURE DIVISION.
0004.00 100-INICIO.
0005.00 DISPLAY " HELLO , WORLD... ".
***** End of data *****

F3=Exit F4=Prompt F5=Refresh F9=Retrieve F10=Cursor F11=Toggle
F16=Repeat find F17=Repeat change F24=More keys
(C) COPYRIGHT IBM CORP. 1981, 2013.

MA a 02/009
I902 - Session successfully started

```



Session A - [24 x 80]

File Edit View Communication Actions Window Help

Display Program Messages

Job 341419/AVFREITAS/QPAD141130 started on 16-10-07 at 14:17:29 in subsystem
HELLO , WORLD...

Press Enter to continue.

F3=Exit F12=Cancel

MA a 01/001

I902 - Session successfully started