



Capítulo 07
Exercício 3
Fluxo de Programa



IRC5 Programação Básica



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IRC5 Programming Basic

Tópicos



- RAPID
- Instruções de Decisão
- I/O signals
- Comunicação com o operador

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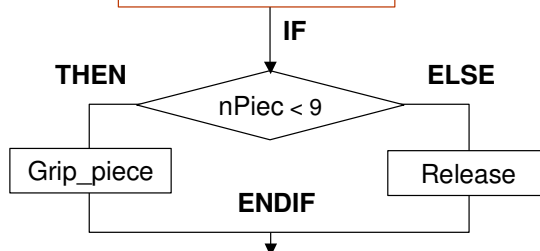


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Program Flow – Instruções de Decisão



```
IF nPiec < 9 THEN
  grip_piece ;
ELSE
  release ;
ENDIF
```



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IRC5 Programming Basic Program flow IF



- Selecionar o Datatype desejado

```
1  
2 MODULE MainModule  
3 PROC main()  
4 IF <EXP> THEN  
5 <SMT>  
6 ENDIF  
7 ENDPROC  
8  
9  
10 ENDMODULE
```

The 'Prog.Flow' palette contains the following options: CallByVar, IF, WHILE, FOR, TEST, GOTO, ProcCall, Label, RETURN, EXIT, and navigation buttons: <-- Previous, Next -->.

Add expression

The 'Insert Expression' dialog box shows the following details:

- Active: bool
- Result: bool
- Hint: any type
- Current expression: <EXP>
- Preview: FALSE
- Progress: 1 of 3 of 3
- Buttons: +, -, (), and a red heart icon.
- Change data type: View, ABC, OK, Cancel

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Exercício 3.1 I/O Sinais

- Início de rotinas
- Seleção de figuras

```

graph TD
    MAIN[MAIN] --> Init[Init]
    MAIN --> GetPen[GetPen]
    MAIN --> Select[Select figure]
    MAIN --> LeavePen[LeavePen]
    Select --> Square[di2=1 Square]
    Select --> Circle[di3=1 Circle]
    Select --> Triangle[di4=1 Triangle]
    NewRoutines[New routines]
    
```

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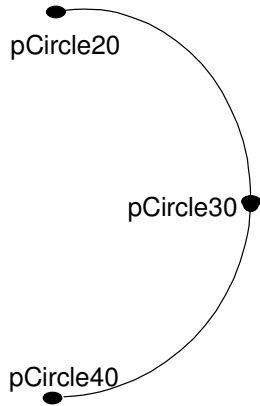


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Exercício 3.1A I/O Sinais



■ MoveC



```
ABB Manual Guard Stop  
coursystem5.05(ROBOTPC08) Stopped (Speed 100%)  
Exercise3 in T_ROB1/MainModule/Circle  
Tasks and Programs Modules Routines  
9 PROC main()  
10 <SMT>  
11 ENDPROC  
12  
13 PROC Square()  
14 <SMT>  
15 ENDPROC  
16  
17  
18 PROC Circle()  
19 MoveJ pCircle20, v1000, fine, tPen;  
20 MoveC pCircle30, pCircle40, v1000, z10, tPen;  
21 ENDPROC  
22  
23
```

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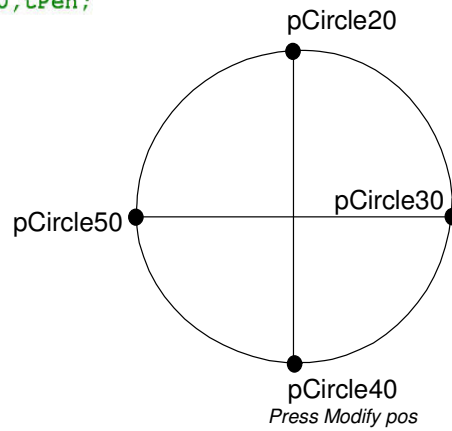
Exercício 3.1A I/O Sinais



■ MoveC

```
PROC Circle()  
  MoveJ pCircle10,v500,fine,tPen;  
  MoveJ pCircle20,v500,fine,tPen;  
  MoveC pCircle30,pCircle40,v500,z10,tPen;  
  MoveC pCircle50,pCircle20,v500,z10,tPen;  
  MoveJ pCircle10,v500,fine,tPen;  
  Reset do3;  
ENDPROC
```

This pos is copied and pasted



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Exercise 3.1A – I/O Sinais

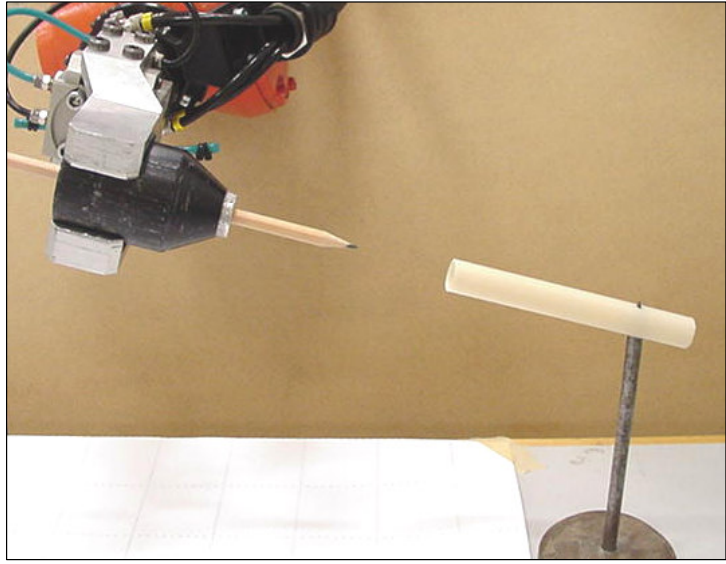


Tempo para Exercícios

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Exercise 3.1 B – Rotina de serviço



Ferramenta armazenada após a terceira figura

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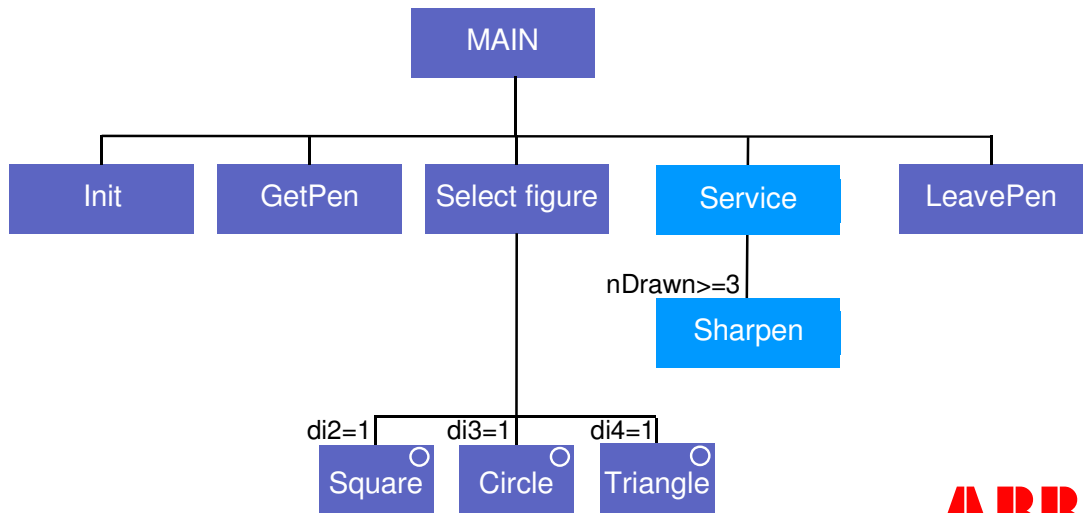




Exercise 3.1 B – Rotina de serviço



- Armazenagem da ferramenta
- Comunicação com Operador



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Exercise 3.1B – Rotina de Serviço



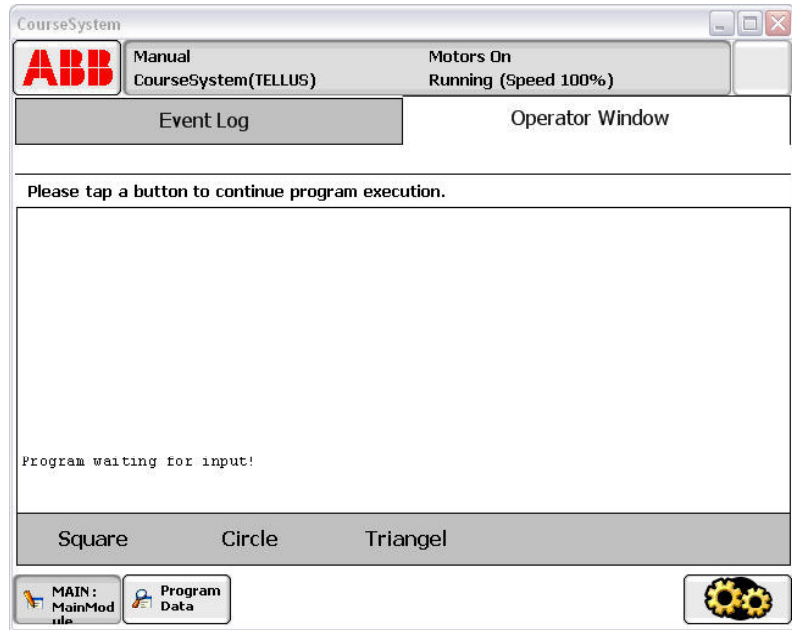
Tempo para Exercício

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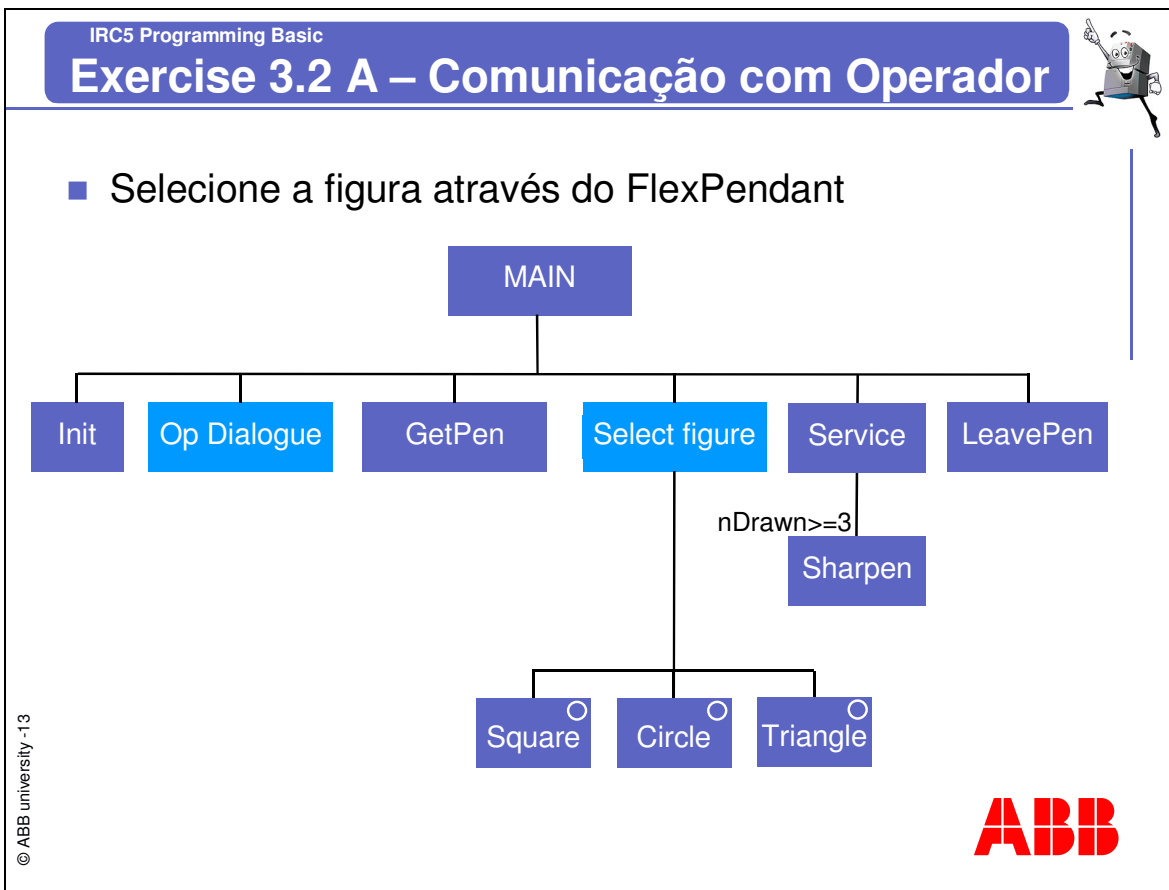
IRC5 Programming Basic Exercise 3.2 A – Comunicação com Operador



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Um figura é desenhada dependendo da seleção do Operador



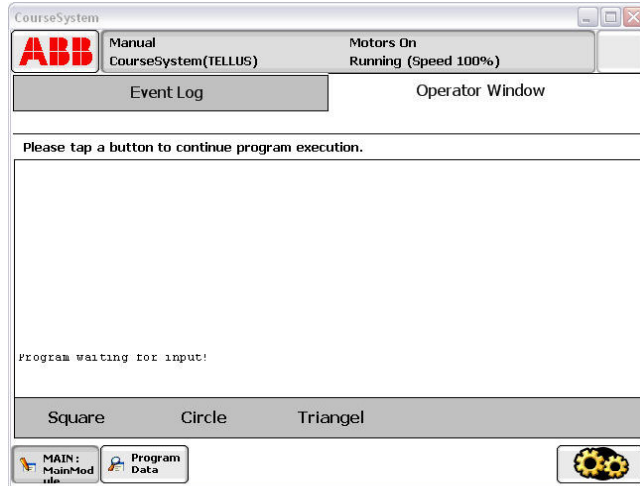




IRC5 Programming Basic Exercise 3.2 A – Comunicação com Operador



■ TPReadFK



TPReadFK nFigure, "Program waiting for input", "Square", "Circle", "Triangel", stEmpty, stEmpty;

1 2 3 (4) (5)





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Exercise 3.2 A – Comunicação com Operador

- Selecionar o registro “Insert Expression”

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IRC5 Programming Basic Exercise 3.2 A – Comunicação com Operador



CourseSystem

ABB Manual CourseSystem(TELLUS) Motors On Running (Speed 100%)

Event Log Operator Window

Tap 123, then enter a value and tap OK to continue program execution.

Program waiting for input!
Circle

| | | | |
|---|-----|---|---|
| 7 | 8 | 9 | ← |
| 4 | 5 | 6 | → |
| 1 | 2 | 3 | ⊗ |
| 0 | +/- | . | |

How many figures do you want?

123 OK

MAIN: MainModule Program Data Production Window

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Qual figura e quantas vezes é definido pelo operador



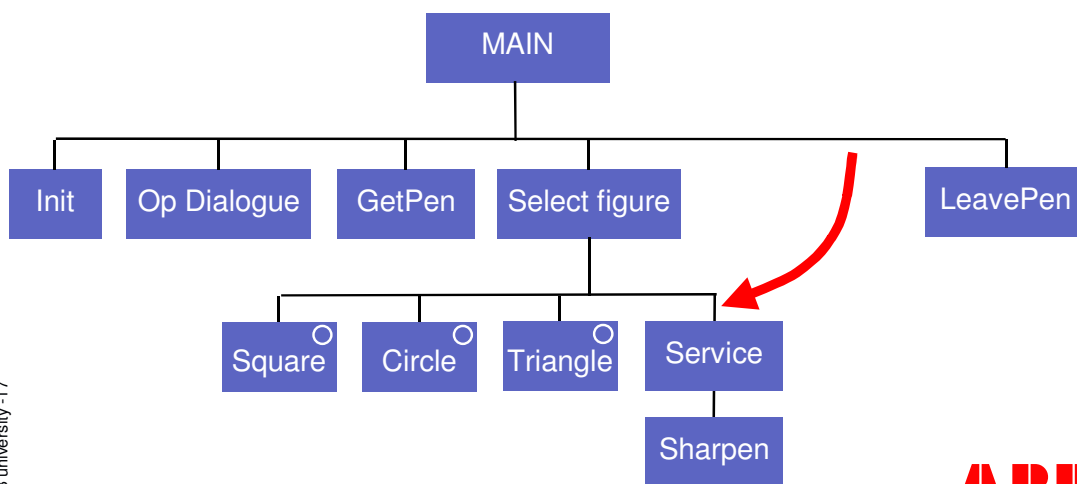


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Exercise 3.2 A – Comunicação com Operador



- A seleção da figura e quantidade é definido via FlexPendant



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IRC5 Programming Basic Exercise 3.2 A – Comunicação com Operador



■ TPReadNum

TPReadNum nfigures, "How many figures do you want?"

The screenshot shows the 'CourseSystem' interface. At the top, it displays 'ABB Manual CourseSystem(TELLUS)' and 'Motors On Running (Speed 100%)'. Below this are 'Event Log' and 'Operator Window' tabs. The main area contains the text: 'Tap 123, then enter a value and tap OK to continue program execution. Program waiting for input! Circle'. A numeric keypad is visible with buttons for digits 0-9, '+/-' and '.'. Below the keypad, the text 'How many figures do you want?' is displayed above an input field containing '123'. An 'OK' button is at the bottom right of the input area. At the bottom of the window, there are three icons: 'MAIN: MainModule', 'Program Data', and 'Production Window', along with a sunflower icon.

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Exercise 3.2 A – Comunicação com Operador



Tempo para Exercícios

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