STUDENT FIRST NAME / LAST NAME:

CLASS: C

**ALGORITHM EXAM #2**

**1h**

|  |  |
| --- | --- |
| SCORE | / 100 |
| COMMENT |  |

**WARNING /!\**

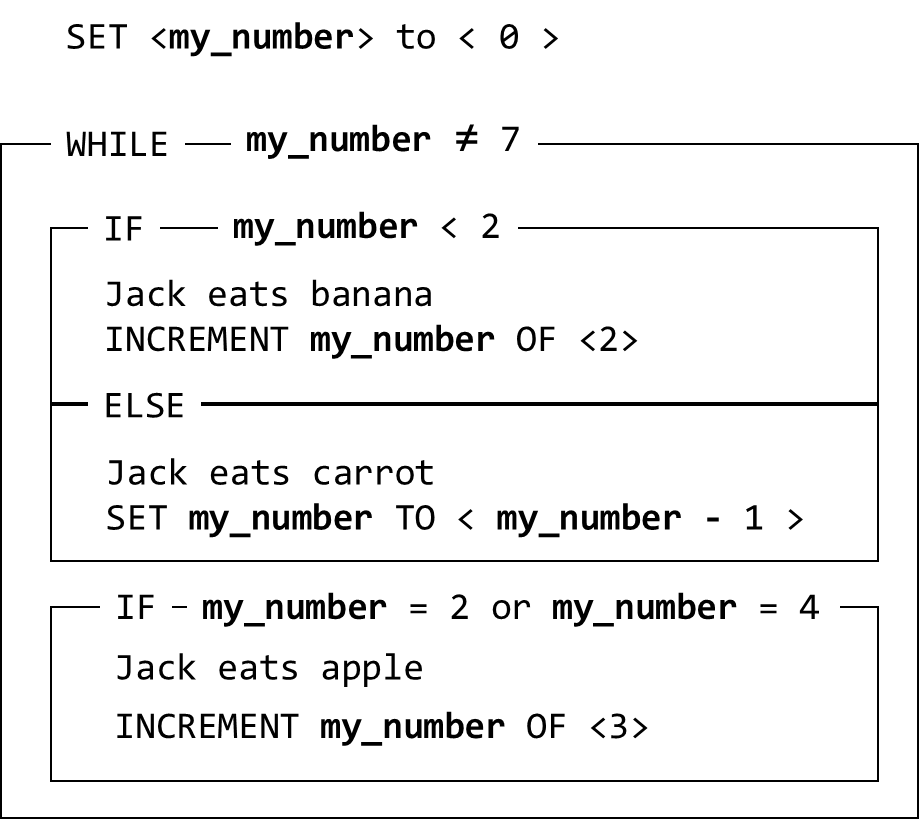
**YOU NEED TO CHECK CAREFULLY STEP BY STEP THAT YOUR CODE WORKS**

**If you code does not work, you will get a 0 score**

**DO NOT USE INSTRUCTION OR CONDITION THAT ARE NOT ALLOWED**

**Exercise 1 (15 POINTS)**

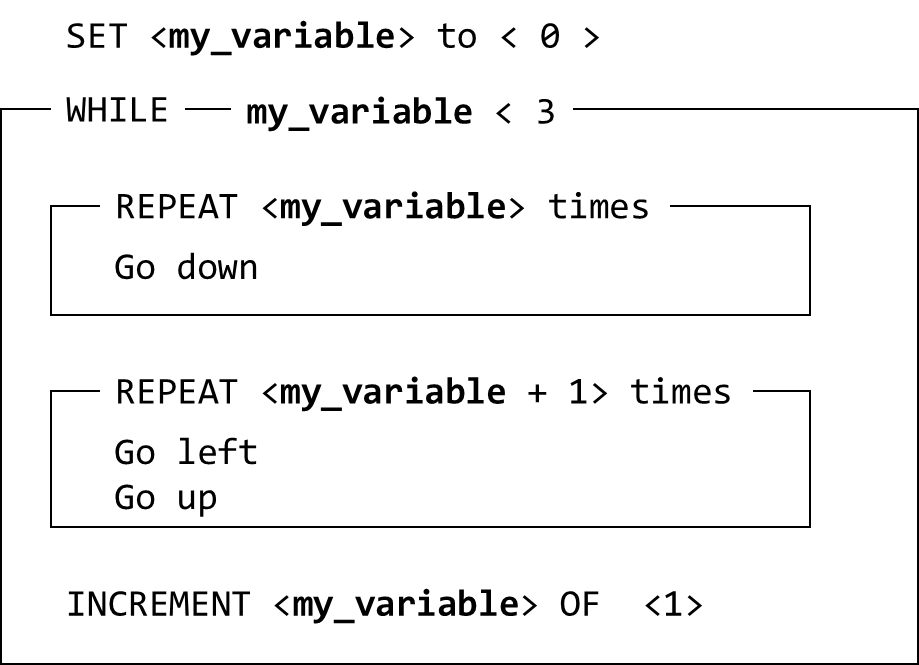
Complete the table. Use a new line every time my\_number changes

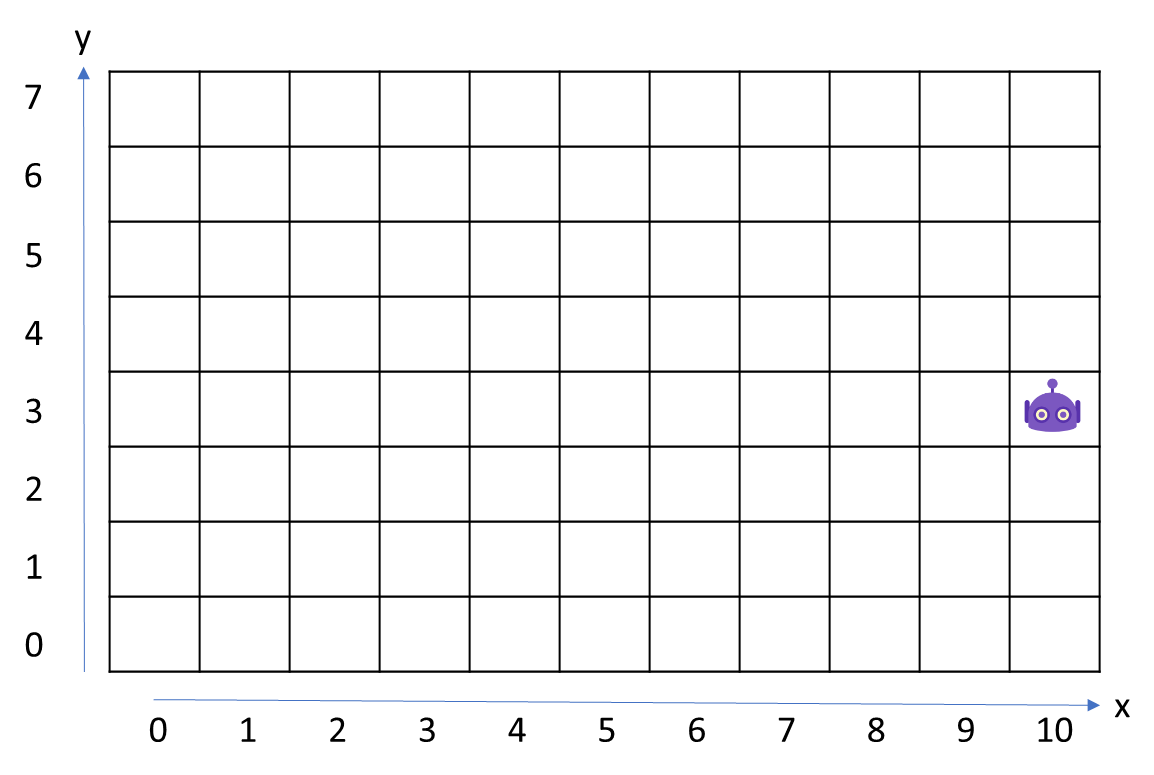


|  |  |
| --- | --- |
| my\_number | What Jack eats? |
| 0 | banana |
| 2 | apple |
| 5 | carrot |
| 4 | apple |
|  |  |
|  |  |

**Exercise 2 (15 POINTS)**

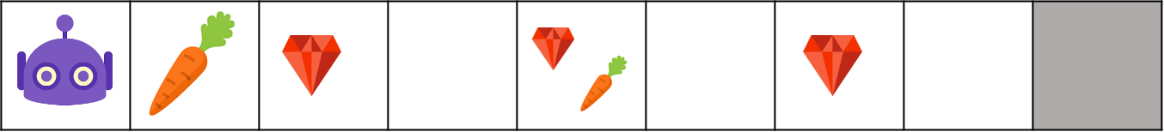
Draw the path of Jack (with arrows )





**Exercise 3 (25 POINTS)**

|  |  |
| --- | --- |
| Objective | * Count the score:   If has cell diamond: +2 points  If has cell carrot: +3 points   * Write the score on the last cell   **Warning: your code must work for the 2 cases!!!!** |
| Maximum number of instructions | 10 |
| Allowed instructions | GO-RIGHT IF <CONDITION>  SET <**score**> TO < > IF <CONDITION> ELSE INCREMENT <**score**> OF < >  REPEAT < > TIMES WRITE <**score**>  <**score**> |
| Allowed conditions | <HAS CARROT>  <HAS DIAMOND> |

**CASE 1**

**CASE 2**

SET <**score**> TO < 0 >

REPEAT < 8 > TIMES

GO-RIGHT

IF <HAS CARROT>

INCREMENT <**score**> OF < 3 >

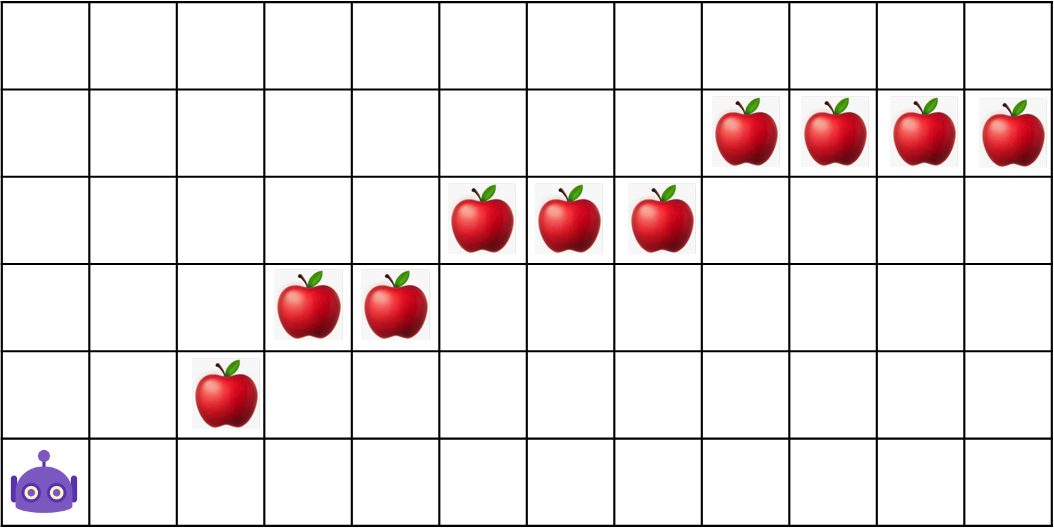
IF < HAS DIAMOND >

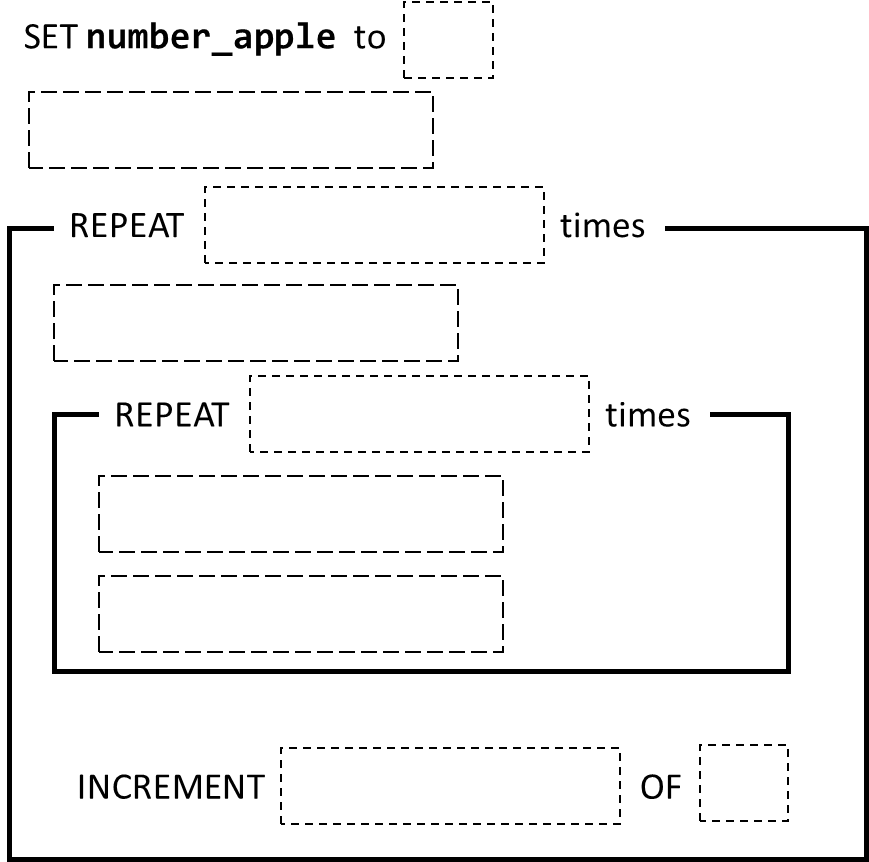
INCREMENT <**score**> OF < 2 >

WRITE <**score**>

**Exercise 4 (20 POINTS)**

|  |  |
| --- | --- |
| Objective | * Pick up all apples |
| Allowed instructions | GO-RIGHT GO-UP PICK-UP IF <CONDITION>  SET <**number\_apple**> TO < > IF <CONDITION> ELSE INCREMENT <**number\_apple**> OF < >  REPEAT < > TIMES WRITE < **number\_apple** >  < **number\_apple** > WHILE <CONDITION> |
| Allowed conditions | ***NO CONDITION ALLOWED*** |





go up

go right

Pick up

Go right

< **number\_apple** >

1

< **number\_apple** >

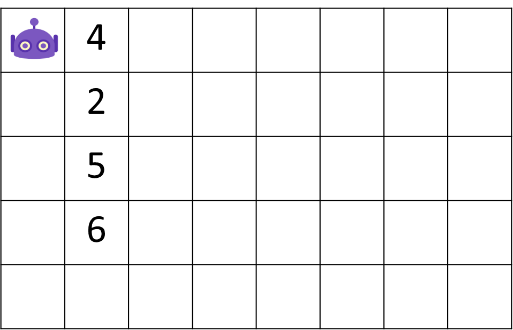
<**4** >

1

**Exercise 5 (25 POINTS)**

|  |  |
| --- | --- |
| Objective | * For each lines: there is a number N. Paint N cells on the right side this number * But if cell has a cross, do not pain the cell   *For instance , for case 1 , the result will be :*    **Warning: your code shall work for the 2 cases!!!!** |
| Max number of instructions | 10 |
| Allowed instructions | GO-RIGHT  GO LEFT REPEAT < > TIMES  GO DOWN  GO UP  PAINT  Variables:  SET <**number\_of\_paint**> TO < >  <**number\_of\_paint**>  <VALUE ON CELL> |
| Allowed conditions | ***NO CONDITION ALLOWED*** |

**CASE 1**



IF CELL HAS ACROSS

REPEAT < 4 > TIMES

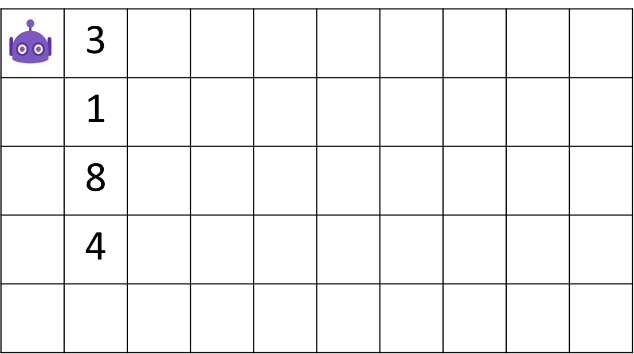
REPEAT < **number\_of\_paint** > TIMES

SET <**number\_of\_paint**> TO < VALUE ON CELL >

GO-RIGHT

**CASE 2**

GO RIGHT



GO-DOWN

GO-LEFT

REPEAT < **number\_of\_paint** > TIMES

ELSE---PAINT