**Tutorial 3 (selections) Question 6**

**Question**: Write a program that allows the user to enter any two integers (X and Y). The user is then given a list of processing options.

If the L key is pressed, then the sprite prints the larger of the two values, with a suitable message.

If the A key is pressed, then the  is calculated (if possible!) and a suitable message is printed.

If the E key is pressed then the program determines whether X is an even number and prints a suitable message.

If the P key is pressed, then the program determines whether Y is a perfect square and prints a suitable comment.

**Input data**

|  |  |  |
| --- | --- | --- |
| *variableName* | *type* | *where* |
| numberX | integer | User- keyboard |
| numberY | integer | User - keyboard |

**Constants**

Not applicable

**Output**

|  |  |  |
| --- | --- | --- |
| *variableName* | *format* | *where* |
| largest | Whole number – no dp | Sprite on screen |
| squareRoot | Number – 1 dp | Sprite on screen |
| evenNumber | text | Sprite on screen |
| perfectSquare | text | Sprite on screen |

**Calculations**

Option1

Option 2

Option 3

Option 4

**Testdata**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *numberX* | *numberY* | *largest* | *squareRoot* | *evenNumber* | *perfectSquare* |
| 10 | 4 | 10 | 2.45 | yes | yes |
| 11 | -9 | 11 | 4.47 | no | no |
| 7 | 16 | 16 | Can’t do | no | yes |
|  |  |  |  |  |  |

**Processing**

**Sprites**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Input Sprite | | | | |
| *Costume* | cat | | *Name* | cat |
| *Thread1* | | | | |
| *Event signal* | | *Event handling* | | |
| Green flag clicked | | Position sprite in lower left corner of stage  Ask user for menu option  Display the results with suitable comments | | |
|  | | | | |
| *Thread 2* | | | | |
| *Event signal* | | *Event handling* | | |
| L key pressed | | Calculate larger number  Display the results with suitable comments | | |
|  | | | | |
| *Thread 3* | | | | |
| *Event signal* | | *Event handling* | | |
| A key pressed | | Calculate square root of X - Y  Display the results with suitable comments | | |
|  | | | | |
| *Thread 4* | | | | |
| *Event signal* | | *Event handling* | | |
| E key pressed | | Determine if X is even  Display the results with suitable comments | | |
|  | | | | |
| *Thread 5* | | | | |
| *Event signal* | | *Event handling* | | |
| P key pressed | | Determine if Y is a perfect square  Display the results with suitable comments | | |
|  | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Menu Sprite | | | | |
| *Costume* | Paint text | | *Name* | menu |
| *Thread1* | | | | |
| *Event signal* | | *Event handling* | | |
| Green flag clicked | | Position menu in centre stage | | |

**Testing Plan**

*Version 1*

Write code to create the menu sprite

*Version 2*

Write code to enter data of two number and test

*Version 3*

Write code for option of L key and test

*Version 4*

Write code for option A key and test

*Version 5*

Write code for E key and test

*Version 6*

Write code for P key and test