## Electronic Answer Document (EAD) Printout



|  |  |
| --- | --- |
| Name |  |
| ZigZag Education supporting  AS AQA Computer Science Paper 1  Summer 2017: Plant Growing Simulation  Electronic Answer Document (EAD)  Instructions   * Enter your name in the box at the top of this page * Answer all questions by entering your answers into this document * Remember to save this document regularly * Save and print this document and any additional pages * Answer all questions * The marks available for each question are shown in brackets * You will need:   □ access to a computer  □ access to a printer  □ access to appropriate software  □ electronic copies of the required skeleton code  □ EAD (Electronic Answer Document)  C:\Users\CHRISC~1\AppData\Local\Temp\59932728_L.jpg  Total marks: | |
|

|  |
| --- |
| Programming Theory Questions  Answer all questions.  Remember to save this document regularly. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Q** | **Answer** | | *Mark  (leave blank)* |
| 1 | (a) | Field |  |
| (b) | CreateNewField |  |
| (c) | FieldLength |  |
| (d) | GetHowLongToRun |  |
| (e) | Response |  |
| (f) | InitialiseField |  |
| (g) | Frost |  |
| 2 | print('|{0:>3}'.format(Row))        FieldRow = FileHandle.readline()    if randint(0, 1) == 1: | |  |
| 3 | It returns the 2d array with the fields data | |  |
| 4 | (a) | 2d array |  |
| (b) | Multiple lists stored within a singular list allowing for data representation in a 2d space |  |
| 5 | Open a file and save its text to a variable called FileHandler | |  |
| 6 | The program will encounter an error and crash if it is not in a try statement | |  |
| 7 | To iterate through the field array and print its rows | |  |
| 8 | It sets every single soil space to seed by iterating through the array using a nested for loop | |  |
| 9 | A function returns a variable and does not control the code while a procedure controls the flow of the code using functions | |  |
| 10 | It finds the middle value of the array and sets it to be a seed | |  |
| 11 | Frost is a random integer between 1 and 0 if frost is 1 then the code reaches an if statement and iterates through the plants | |  |
| 12 | Constants prevent the need for variables to be declared allowing for consistency between subroutines without needing to re-declare variables | |  |
| 13 | A while loop is an example of indefinite iteration while a for loop is an example of definite iteration this means a while loop will continue until stopped while a for loop can only run a set number of times` | |  |
| 14 | Using column as a global variable would mean it would no longer need to be passed as a parameter through the subroutines, however column isn’t necessary as a global variable because it is constantly changing to locate positions within the field array | |  |
| 15 | String concatenation is appending 2 strings to each other saving them under a singular variable | |  |
| 16 | It sets a position within the 2d array field to be a soil tile | |  |
| 17 | To generate a random integer between 0-2 and save it to a variable called RainFall | |  |

|  |
| --- |
| Programming Exercises  Answer all questions.  Remember to save this document regularly. |

|  |  |  |
| --- | --- | --- |
| **Q** | **Answer** | *Mark  (leave blank)* |
| 1 | if *Field*[Row][Column] == SEED:          dat = random.randint(1, 100)          if dat <= 40:  *Field*[Row][Column] = PLANT |  |
| 2 | FileName = input('Enter file name: ')    if ".txt" not in FileName:      FileName += ".txt” |  |
| 3 | Display(Field, 'start', 0) |  |
| 4 | ctr = 0    RainFall = randint(0, 2)    if RainFall == 0:      PlantCount = 0      for Row in range(FIELDLENGTH):        for Column in range(FIELDWIDTH):          if *Field*[Row][Column] == PLANT:            PlantCount += 1            if PlantCount % 2 == 0:  *Field*[Row][Column] = SOIL              ctr += 1      print(f"There has been a severe drought {ctr} plants have died") |  |
| 5 | for i in range(5):      rockRow = randint(0, FIELDLENGTH-1)      rockCol = randint(0, FIELDWIDTH-1)      if Field[rockRow][rockCol] == ROCKS:        i=i-1      else:        Field[rockRow][rockCol] = ROCKS |  |
| 6 | Years = 10    while Years < -1 and Years > 5:      Years = int(input('Enter a number between 0 and 5, or -1 for stepping mode: ')) |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |
| 11 |  |  |
| 12 |  |  |
| 13 |  |  |
| 14 |  |  |
| 15 |  |  |