CS1020E | Lab 1 | Exercise 2

Array of Points

Objective

The objective of this exercise is to learn how use `new` to dynamically allocate memory for an array in C++.

Problem Description

Complete the given C++ program **`ArrayOfPoints.cpp`** to achieve the results shown in the following sample runs. Your program should read in the *x* and *y* coordinates of a set of 2D points and then display the points in the reverse order of the input.

The given incomplete program has already defined a `Point` struct. Your complete program should use the `new` operator to dynamically allocate an array of `Points` to store the input points' coordinates. At the end of your program, memory taken by the `Point` array should be properly freed up.

Add your code only inside the `main` function. Do not modify any other part of the given code.

Inputs

The first input is a positive integer *N* that indicates how many points are in the input. It is then followed by *N* pairs of integers, where each pair is the *x* and *y* coordinates of a point.

Outputs

For the inputs as shown in the following sample runs, your program must produce exactly the same outputs, i.e. the white spaces and newlines must be at the same places.

Sample Run 1

```
3
1 2
3 4
5 6
Point 2: (5, 6)
Point 1: (3, 4)
Point 0: (1, 2)
```

(*User inputs are shown in **bold red**.*)

Sample Run 2

```
6
12 13
10 11
8 9
6 7
4 5
2 3
Point 5: (2, 3)
Point 4: (4, 5)
Point 3: (6, 7)
Point 2: (8, 9)
Point 1: (10, 11)
Point 0: (12, 13)
```

(*User inputs are shown in **bold red**.*)

Submission

You need to submit only your completed **ArrayOfPoints.cpp**. to CodeCrunch (https://codecrunch.comp.nus.edu.sg/) before the specified deadline. We will take only your latest submission.

Late submissions will not be accepted. The submission system in CodeCrunch will automatically close at the deadline.