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| **Programming II**  Diploma in IT / DS / CSF  Year 1 (2021/22) Semester 2 | Week **3** |
| **2 hours** |
| **Practical 3 : Writing Your Own Classes** | |

**Optional**

**FareCalculation Application**

1. Create a new Console App Project **Snnnnnnnn\_FareCalculatorApp** in Visual Studio 2019 (where **Snnnnnnnn** is your **student number**).
2. Implement the classes shown below.

**BusStop class**

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| **BusStop** |
| -distance:double  -code:string  -road:string  -description:string |
| +BusStop(double,string,string,string)  +ToString():string |

**Fare class**

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| **Fare** |
| -upToDistance:double  -amount:int |
| +Fare(double,int)  +ToString():string |

As in Practical Exercise 2, the distance-based fare calculation is available in the “distance-based-fare.csv” file provided.

Based on the route details of bus service 174 that is available in the “bus\_174.csv” file provided, write an **object-oriented program** to do the following:

- displays the route details,

- prompts user to enter the boarding bus stop and alighting bus stop,

- calculate and display the distance travelled and the corresponding fare.

A sample run of the program is shown below. The input value is underlined.

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| Distance (km) Bus Stop Code Road Bus Stop Description  0 22009 Jurong West Ctrl 3 Boon Lay Int  0.6 21361 Jln Boon Lay Blk 695  0.9 21399 Boon Lay Ave Opp River Valley High Sch  1.3 21421 Boon Lay Ave Blk 176  1.7 21241 Boon Lay Ave Opp Blk 213  1.8 21161 Corporation Rd Opp Jurong JC  . . . . .  . . . . .  27.5 06029 Outram Rd Outram Pk Stn  28.1 10011 New Bridge Rd Bef Neil Rd  28.4 10041 Kg Bahru Rd Bef Kampong Bahru Ter  29 10499 Spooner Rd Kampong Bahru Ter  Enter boarding bus stop: **42159**  Enter alighting bus stop: **10499**  Distance travelled: 18.2 km  Fare to pay: $1.65 |

**Plagiarism Warning:**

**If a student is found to have submitted work not done by him/her, he/she will not be awarded any marks for this practical. Disciplinary action may also be taken.**

**Similar action will be taken for student who allows other student(s) to copy his/her work.**