**Chapter 1: Activity 8**

**TTrip Class diagram**

a)

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| --- |
| **TTrip** |
| - fDate : string  - fDriver : string;  - fDistance : integer;  - fHours : real; |
| + <<constructor>> Create (sDate, sDriver : string;  iDistance : integer);  + SetHours(rHours : real);  + CalcFuelCost (rPricePerKM:real):real  + CalcDriverCost (rRatePerHour:real):real  + GetDate : string  + GetDriver : string  + GetHours : real  + GetDistance : integer |

b) Identify the following types of methods:

One accessor method : Any one of the Get-methods

One mutator method: SetHours

One auxiliary method: CalcFuelCost / CalcDriverCost

c) **constructor TTrip.Create(sDate, sDriver: string; iDistance: integer);**

**begin**

fDate := sDate;

fDriver := sDriver;

fDistance := iDistance;

**end;**

d) Please change the instructions in the book as follows:

**procedure TfrmTrip.btnProcessClick(Sender: TObject);**

**var**

rFuelPrice**PerKM**, rFuelCost, rRatePerHour, rDriverAmount, rHours: real ;

**begin**

*{ (i): Write the code to instantiate a Trip object. Use objTrip as an object variable.*

*Obtain data from the input components. }*

rHours := StrToInt**Float**(InputBox('Duration', 'Number of hours? ', ''));

objTrip.SetHours(rHours);

rFuelPricePerKm := 1.30;

**(i) Write the code to instantiate a Trip object. Use objTrip as an object variable. Obtain data from the input components**.

*objTrip := TTrip.Create(edtDate.Text, edtDriver.Text, sedDistance.Value);*

**(ii) Write the code to obtain the cost of the fuel from the object.**

*rFuelCost := objTrip.CalcFuelCost(rFuelPricePerKm);*

**(iii) Write the code to obtain the amount earned by the driver from the object.**

*rDriverAmount := objTrip.CalcDriverCost(rRatePerHour);*

**(iv) Write the code to display the name of the driver and the amount he has earned with suitable labels.**

*redOutput.Lines.Add ( objTrip.GetDriver() + ' earned ' +*

*FloatToStrF(rDriverAmount, ffCurrency, 8, 2));*

**(v) Write code to free the memory occupied by the Trip object**

*objTrip.Free;*