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| **package** com.company;  **public class** Main {   **public static void** main(String[] args) {  Gearbox gb =**new** Gearbox(6);  Gearbox.Gear gear = gb.**new** Gear(2,15.6);  System.***out***.println(gear.atGoing(1000));  } }  15600.0 | **package** com.company;  **import** java.util.ArrayList;  **public class** Gearbox {  ArrayList<Gear> **gears**;  **int topGear**;   **public** Gearbox(**int** topGear) {  **this**.**gears** = **new** ArrayList<Gear>();  **this**.**topGear** = topGear;  Gear G = **new** Gear(0, 0.0);  **this**.**gears**.add(G);  }   *//preventing inner class to interact with outside  //by making it private   //inner class* **public class** Gear{  **private int gear**;  **private double ratio**;   *//constructors* **public** Gear(**int** gear, **double** ratio) {  **this**.**gear** = gear;  **this**.**ratio** = ratio;  }   *//inner method* **public double** atGoing(**int** speed){  **return this**.**ratio** \* speed;  }  } } |
| **ENCAPSULATING THE INNER METHOD** | |
| **package** com.company;  **public class** Main {   **public static void** main(String[] args) {  Gearbox gb =**new** Gearbox(6);  */\*gb.addGear(1,5.5);  gb.addGear(2,9.5);  gb.addGear(3, 15.5);\*/* gb.operateClutch(**true**);  gb.changeGear(1);  System.***out***.println(gb.wheelSpeed(1000));   System.***out***.println();  gb.changeGear(2);  System.***out***.println(gb.wheelSpeed(1000));   System.***out***.println();  gb.operateClutch(**false**);  gb.changeGear(3);  System.***out***.println(gb.wheelSpeed(1000));  } }  **running at 1**  **2500.0**  **running at 2**  **5000.0**  **Stoped**  **Scream......!**  **0.0** | **package** com.company;  **import** java.util.ArrayList;  **public class** Gearbox {  **private** ArrayList<Gear> **gears**;  **private int topGear**;  **private boolean gearsOn**;  **private int currentGear** = 0;   **public** Gearbox(**int** topGear) {  **this**.**gears** = **new** ArrayList<Gear>();  **this**.**topGear** = topGear;  Gear G = **new** Gear(0, 0.0);  **this**.**gears**.add(G);   **for** (**int** i = 1; i <= **this**.**topGear**; i++){  addGear(i, i\*2.5);  }  }   *//preventing inner class to interact with outside  //by making it private* **public void** operateClutch(**boolean** x){  **this**.**gearsOn** = x;  }   **public void** addGear(**int** number, Double ratio){  **if** (number >= 0 && number <= **this**.**topGear**)  **gears**.add(**new** Gear(number, ratio));  }  **public void** changeGear(**int** newGears){  **if** (newGears > 0 && newGears < **this**.**gears**.size() && **gearsOn**){  **this**.**currentGear** = newGears;  System.***out***.println(**"running at "** + newGears);  } **else** {  System.***out***.println(**"Stoped"**);  **this**.**currentGear** = 0;  }  }   **public double** wheelSpeed(**int** speed){  **if** (!**gearsOn**){  System.***out***.println(**"Scream......!"**);  **return** 0.0;  }  **return gears**.get(**currentGear**).getRatio() \* speed;  }   *//inner class* **private class** Gear{  **private int gear**;  **private double ratio**;   *//constructors* **public** Gear(**int** gear, **double** ratio) {  **this**.**gear** = gear;  **this**.**ratio** = ratio;  }   **public double** getRatio() {  **return ratio**;  }   *//inner method* **public double** atGoing(**int** speed){  **return this**.**ratio** \* speed;  }  } } |

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| **Anonymous inner function** | |
| **package** com.company;  **import** java.util.Scanner;  **public class** Main {  **public static** Scanner *scanner* = **new** Scanner(System.***in***);  **public static** Button *btnButton* = **new** Button(**"Print"**);   **public static void** main(String[] args) {   *//anonymous inner classes – having no name  btnButton*.setOnClickLister(**new** Button.OnClickLister() {  @Override  **public void** onClick(String title) {  System.***out***.println(title + **" was clicked"**);  }  });  *listen*();  }   **public static void** listen(){  **boolean** quit = **false**;  **while** (!quit){  **int** choise = *scanner*.nextInt();  *scanner*.nextLine();  **switch** (choise){  **case** 0:  quit = **true**;  **break**;  **case** 1:  *btnButton*.onClick();  }  }  } } | **package** com.company;  **public class** Button {  **private** String **title**;  **private** OnClickLister **onClickLister**;   **public** Button(String title) {  **this**.**title** = title;  }   **public** String getTitle() {  **return title**;  }   **public void** setOnClickLister(OnClickLister onClickLister) {  **this**.**onClickLister** = onClickLister;  }   **public void** onClick(){  **this**.**onClickLister**.onClick(**this**.**title**);  }  *//interface* **public interface** OnClickLister{  **public void** onClick(String title);  } } |