

```
/**
 * Calculates calories burned by runner
 *
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 */
public class RunnersWorld
{
    private int age; // age in years

    private double weight; //weight in pounds

    private int workoutTime; //workout in min

    private int heartRate; //in beats per minute

    public RunnersWorld(int pAge, double pWeight, int pHeartRate)
    {
        age=pAge;
        weight=pWeight;
        heartRate=pHeartRate;
        workoutTime=0;
    }

    public void setAge(int pAge)
    {
        age = pAge;
    }

    public void setWeight(double pWeight)
    {
        weight = pWeight;
    }

    public void setWorkoutTime(int pWorkoutTime)
    {
        workoutTime = pWorkoutTime;
    }

    public void setHeartRate(int pHeartRate)
    {
        heartRate = pHeartRate;
    }

    public double calcRandomTime(int pMinTime, int pMaxTime)
    {
        double res=(Math.random()*(pMaxTime-pMinTime)) + pMinTime;
        return res;
    }

    public double heartRateInBps()
    {
        return (heartRate/60.0);
    }

    public double energyBurnedMan()
    {
        // Calories Burned = [(Age * 0.2017) - (Weight * 0.09036) + (Heart Rate * 37.854) - 55.0969] * (Time / 4.184).
        //cf. http://fitnowtraining.com/2012/01/formula-for-calories-burned/
        double res=0;
        res=(age*0.2017-weight*0.09036+heartRateInBps()*37.854-55.0969)*(workoutTime/4.184);
        return res;
    }
}
```