Lösung **BodyMassIndex.om** Blatt 10

```
MODULE BodyMassIndex;

        (**************************
         * Allgemeine Informatik I *
         *      WS 2001/2002       *
         *     Uebungsblatt 10     *
         *     Beispielloesung     *
         **************************)

IMPORT Read, Write, Print;

CONST MaxDataSize = 10;

TYPE Date = RECORD
              day, month, year : INTEGER;
            END;
     File = RECORD
              name           : ARRAY 24 OF CHAR;
              dateofbirth    : Date;
              height, weight : INTEGER;
              bmi            : REAL;
            END;
     DataSet = ARRAY MaxDataSize OF File;

VAR data                   : DataSet;
    i, count               : INTEGER;
    dummy                  : CHAR;
    choice                 : ARRAY 2 OF CHAR;
    sum, min, max, average : REAL;

BEGIN
  (* Read all data *)
choice[0]:="j"; choice[1]:=0X;
i:=0;
WHILE ((choice[0]="j") & (i < MaxDataSize)) DO
  Print.F1("Bitte den Namen des %d. Patienten eingeben : ",i+1);
  Read.Line(data[i].name);
  Print.F("Bitte das Geburtsdatum eingeben [dd.mm.yyyy] : ");
  Read.Int(data[i].dateofbirth.day);
  Read.Char(dummy);
  Read.Int(data[i].dateofbirth.month);
  Read.Char(dummy);
  Read.Int(data[i].dateofbirth.year);
  Read.Ln;
  Print.F("Bitte die Koerpergroesse angeben [cm] : ");
  Read.Int(data[i].height);
  Print.F("Bitte das Gewicht angeben [kg] : ");
  Read.Int(data[i].weight);
  Read.Ln;
    (* calculate BMI *)
  data[i].bmi:=data[i].weight/((data[i].height/100)*(data[i].height/100));
  Print.F("Noch einen Datensatz einlesen? [j/n] ");
  Read.Line(choice);
  INC(i);
  END;
count:=i;

  (* Calculate min, max and average *)
i:=0;
sum:=0;
min:=data[0].bmi;
max:=data[0].bmi;
```

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WHILE (i < count) DO
  sum:=sum+data[i].bmi;
  IF (data[i].bmi < min) THEN min:=data[i].bmi END;
  IF (data[i].bmi > max) THEN max:=data[i].bmi END;
  INC(i);
  END;
average:=sum/count;

  (* Print results *)
Write.Ln;
Print.F("Patientendaten:\n");
i:=0;
WHILE (i < count) DO
  Print.F7("  %-24s - %02d.%02d.%4d - %3dcm - %2dkg - BMI %5.2f\n",data[i].name,
data[i].dateofbirth.day,data[i].dateofbirth.month,data[i].dateofbirth.year,data[
i].height,data[i].weight,data[i].bmi);
  INC(i);
  END;
Write.Ln;
Print.F("Statistische Auswertung:\n");
Print.F1("  Minimaler BMI     : %5.2f\n",min);
Print.F1("  Maximaler BMI     : %5.2f\n",max);
Print.F1("  Durchschnitts-BMI : %5.2f\n",average);

END BodyMassIndex.
```