

Seminář 2 - cvičení

1. Načtěte data ze souboru data.csv jako tabulku.

```
T = readtable('data.csv')
```

T = 45x5 table

| | Name | LastName | Age | Height | Weight |
|----|---------------|------------|-----|--------|--------|
| 1 | 'John' | 'Doe' | 30 | 180 | 75 |
| 2 | 'Jane' | 'Doe' | 28 | 167 | 60 |
| 3 | 'Bob' | 'Smith' | 35 | 190 | 85 |
| 4 | 'Emma' | 'Johnson' | 25 | 162 | 45 |
| 5 | 'Michael' | 'Brown' | 40 | 180 | 105 |
| 6 | 'Emily' | 'Davis' | 27 | 170 | 75 |
| 7 | 'William' | 'Miller' | 32 | 178 | 70 |
| 8 | 'Ava' | 'Wilson' | 29 | 165 | 58 |
| 9 | 'James' | 'Anderson' | 36 | 193 | 108 |
| 10 | 'Olivia' | 'Thomas' | 26 | 161 | 53 |
| 11 | 'Christopher' | 'Jackson' | 33 | 187 | 78 |
| 12 | 'Sophia' | 'White' | 24 | 160 | 50 |
| 13 | 'David' | 'Harris' | 37 | 195 | 92 |
| 14 | 'Charlotte' | 'Martin' | 31 | 163 | 87 |
| 15 | 'Daniel' | 'Thompson' | 38 | 188 | 80 |
| 16 | 'Mia' | 'Young' | 23 | 158 | 48 |
| 17 | 'Matthew' | 'Allen' | 34 | 186 | 75 |
| 18 | 'Aria' | 'King' | 28 | 167 | 60 |
| 19 | 'Jacob' | 'Wright' | 30 | 180 | 73 |
| 20 | 'Nicholas' | 'Scott' | 35 | 190 | 63 |
| 21 | 'Isabella' | 'Green' | 26 | 161 | 55 |
| 22 | 'Ryan' | 'Baker' | 32 | 178 | 68 |
| 23 | 'Ella' | 'Adams' | 29 | 165 | 58 |
| 24 | 'Jonathan' | 'Nelson' | 36 | 193 | 88 |
| 25 | 'Natalie' | 'Carter' | 31 | 163 | 57 |
| 26 | 'Liam' | 'Mitchell' | 38 | 188 | 80 |
| 27 | 'Lily' | 'Perez' | 23 | 158 | 48 |
| 28 | 'Samuel' | 'Roberts' | 34 | 186 | 75 |
| 29 | 'Hazel' | 'Turner' | 28 | 167 | 60 |

| | Name | LastName | Age | Height | Weight |
|----|------------|--------------|-----|--------|--------|
| 30 | 'Benjamin' | 'Phillips' | 30 | 180 | 93 |
| 31 | 'Violet' | 'Campbell' | 35 | 190 | 83 |
| 32 | 'Andrew' | 'Parker' | 32 | 178 | 68 |
| 33 | 'Savannah' | 'Evans' | 29 | 165 | 58 |
| 34 | 'Elijah' | 'Edwards' | 36 | 193 | 88 |
| 35 | 'Audrey' | 'Collins' | 31 | 163 | 57 |
| 36 | 'Evan' | 'Stewart' | 38 | 188 | 80 |
| 37 | 'Brooklyn' | 'Sanchez' | 23 | 158 | 45 |
| 38 | 'Isaac' | 'Morris' | 34 | 186 | 75 |
| 39 | 'Paisley' | 'Rogers' | 28 | 167 | 75 |
| 40 | 'Nathan' | 'Reed' | 30 | 180 | 73 |
| 41 | 'Zoe' | 'Cook' | 35 | 190 | 83 |
| 42 | 'Luke' | 'Bailey' | 32 | 178 | 98 |
| 43 | 'Leah' | 'Bell' | 29 | 165 | 70 |
| 44 | 'Gabriel' | 'Cooper' | 36 | 193 | 88 |
| 45 | 'Allison' | 'Richardson' | 31 | 163 | 57 |

2. Spočítejte průměrný věk lidí v tabulce. Hodnotu uložte do proměnné avgAge.

```
avgAge = mean(T.Age)
```

```
avgAge = 31.2667
```

3. Zjistěte velikost tabulky a tuto informaci uložte do proměnné tableSize jako vektor, kde první hodnota představuje počet zázamů a druhá počet atributů (sloupců).

```
tableSize = [height(T), width(T)]
```

```
tableSize = 1x2
45      5
```

4. Pro všechny záznamy spočítejte BMI a uložte je do nového sloupce Bmi.

```
T.Bmi = T.Weight ./ (T.Height / 100).^2
```

```
T = 45x6 table
```

| | Name | LastName | Age | Height | Weight | Bmi |
|---|--------|----------|-----|--------|--------|---------|
| 1 | 'John' | 'Doe' | 30 | 180 | 75 | 23.1481 |
| 2 | 'Jane' | 'Doe' | 28 | 167 | 60 | 21.5139 |

| | Name | LastName | Age | Height | Weight | Bmi |
|----|---------------|------------|-----|--------|--------|---------|
| 3 | 'Bob' | 'Smith' | 35 | 190 | 85 | 23.5457 |
| 4 | 'Emma' | 'Johnson' | 25 | 162 | 45 | 17.1468 |
| 5 | 'Michael' | 'Brown' | 40 | 180 | 105 | 32.4074 |
| 6 | 'Emily' | 'Davis' | 27 | 170 | 75 | 25.9516 |
| 7 | 'William' | 'Miller' | 32 | 178 | 70 | 22.0932 |
| 8 | 'Ava' | 'Wilson' | 29 | 165 | 58 | 21.3039 |
| 9 | 'James' | 'Anderson' | 36 | 193 | 108 | 28.9941 |
| 10 | 'Olivia' | 'Thomas' | 26 | 161 | 53 | 20.4467 |
| 11 | 'Christopher' | 'Jackson' | 33 | 187 | 78 | 22.3055 |
| 12 | 'Sophia' | 'White' | 24 | 160 | 50 | 19.5312 |
| 13 | 'David' | 'Harris' | 37 | 195 | 92 | 24.1946 |
| 14 | 'Charlotte' | 'Martin' | 31 | 163 | 87 | 32.7449 |
| 15 | 'Daniel' | 'Thompson' | 38 | 188 | 80 | 22.6347 |
| 16 | 'Mia' | 'Young' | 23 | 158 | 48 | 19.2277 |
| 17 | 'Matthew' | 'Allen' | 34 | 186 | 75 | 21.6788 |
| 18 | 'Aria' | 'King' | 28 | 167 | 60 | 21.5139 |
| 19 | 'Jacob' | 'Wright' | 30 | 180 | 73 | 22.5309 |
| 20 | 'Nicholas' | 'Scott' | 35 | 190 | 63 | 17.4515 |
| 21 | 'Isabella' | 'Green' | 26 | 161 | 55 | 21.2183 |
| 22 | 'Ryan' | 'Baker' | 32 | 178 | 68 | 21.4619 |
| 23 | 'Ella' | 'Adams' | 29 | 165 | 58 | 21.3039 |
| 24 | 'Jonathan' | 'Nelson' | 36 | 193 | 88 | 23.6248 |
| 25 | 'Natalie' | 'Carter' | 31 | 163 | 57 | 21.4536 |
| 26 | 'Liam' | 'Mitchell' | 38 | 188 | 80 | 22.6347 |
| 27 | 'Lily' | 'Perez' | 23 | 158 | 48 | 19.2277 |
| 28 | 'Samuel' | 'Roberts' | 34 | 186 | 75 | 21.6788 |
| 29 | 'Hazel' | 'Turner' | 28 | 167 | 60 | 21.5139 |
| 30 | 'Benjamin' | 'Phillips' | 30 | 180 | 93 | 28.7037 |
| 31 | 'Violet' | 'Campbell' | 35 | 190 | 83 | 22.9917 |
| 32 | 'Andrew' | 'Parker' | 32 | 178 | 68 | 21.4619 |
| 33 | 'Savannah' | 'Evans' | 29 | 165 | 58 | 21.3039 |
| 34 | 'Elijah' | 'Edwards' | 36 | 193 | 88 | 23.6248 |
| 35 | 'Audrey' | 'Collins' | 31 | 163 | 57 | 21.4536 |

| | Name | LastName | Age | Height | Weight | Bmi |
|----|------------|--------------|-----|--------|--------|---------|
| 36 | 'Evan' | 'Stewart' | 38 | 188 | 80 | 22.6347 |
| 37 | 'Brooklyn' | 'Sanchez' | 23 | 158 | 45 | 18.0260 |
| 38 | 'Isaac' | 'Morris' | 34 | 186 | 75 | 21.6788 |
| 39 | 'Paisley' | 'Rogers' | 28 | 167 | 75 | 26.8923 |
| 40 | 'Nathan' | 'Reed' | 30 | 180 | 73 | 22.5309 |
| 41 | 'Zoe' | 'Cook' | 35 | 190 | 83 | 22.9917 |
| 42 | 'Luke' | 'Bailey' | 32 | 178 | 98 | 30.9304 |
| 43 | 'Leah' | 'Bell' | 29 | 165 | 70 | 25.7117 |
| 44 | 'Gabriel' | 'Cooper' | 36 | 193 | 88 | 23.6248 |
| 45 | 'Allison' | 'Richardson' | 31 | 163 | 57 | 21.4536 |

5. Záznamy seřídíte podle Bmi sestupně.

```
T = sortrows(T, 'Bmi', 'descend')
```

T = 45x6 table

| | Name | LastName | Age | Height | Weight | Bmi |
|----|-------------|------------|-----|--------|--------|---------|
| 1 | 'Charlotte' | 'Martin' | 31 | 163 | 87 | 32.7449 |
| 2 | 'Michael' | 'Brown' | 40 | 180 | 105 | 32.4074 |
| 3 | 'Luke' | 'Bailey' | 32 | 178 | 98 | 30.9304 |
| 4 | 'James' | 'Anderson' | 36 | 193 | 108 | 28.9941 |
| 5 | 'Benjamin' | 'Phillips' | 30 | 180 | 93 | 28.7037 |
| 6 | 'Paisley' | 'Rogers' | 28 | 167 | 75 | 26.8923 |
| 7 | 'Emily' | 'Davis' | 27 | 170 | 75 | 25.9516 |
| 8 | 'Leah' | 'Bell' | 29 | 165 | 70 | 25.7117 |
| 9 | 'David' | 'Harris' | 37 | 195 | 92 | 24.1946 |
| 10 | 'Jonathan' | 'Nelson' | 36 | 193 | 88 | 23.6248 |
| 11 | 'Elijah' | 'Edwards' | 36 | 193 | 88 | 23.6248 |
| 12 | 'Gabriel' | 'Cooper' | 36 | 193 | 88 | 23.6248 |
| 13 | 'Bob' | 'Smith' | 35 | 190 | 85 | 23.5457 |
| 14 | 'John' | 'Doe' | 30 | 180 | 75 | 23.1481 |
| 15 | 'Violet' | 'Campbell' | 35 | 190 | 83 | 22.9917 |
| 16 | 'Zoe' | 'Cook' | 35 | 190 | 83 | 22.9917 |
| 17 | 'Daniel' | 'Thompson' | 38 | 188 | 80 | 22.6347 |
| 18 | 'Liam' | 'Mitchell' | 38 | 188 | 80 | 22.6347 |

| | Name | LastName | Age | Height | Weight | Bmi |
|----|---------------|--------------|-----|--------|--------|---------|
| 19 | 'Evan' | 'Stewart' | 38 | 188 | 80 | 22.6347 |
| 20 | 'Jacob' | 'Wright' | 30 | 180 | 73 | 22.5309 |
| 21 | 'Nathan' | 'Reed' | 30 | 180 | 73 | 22.5309 |
| 22 | 'Christopher' | 'Jackson' | 33 | 187 | 78 | 22.3055 |
| 23 | 'William' | 'Miller' | 32 | 178 | 70 | 22.0932 |
| 24 | 'Matthew' | 'Allen' | 34 | 186 | 75 | 21.6788 |
| 25 | 'Samuel' | 'Roberts' | 34 | 186 | 75 | 21.6788 |
| 26 | 'Isaac' | 'Morris' | 34 | 186 | 75 | 21.6788 |
| 27 | 'Jane' | 'Doe' | 28 | 167 | 60 | 21.5139 |
| 28 | 'Aria' | 'King' | 28 | 167 | 60 | 21.5139 |
| 29 | 'Hazel' | 'Turner' | 28 | 167 | 60 | 21.5139 |
| 30 | 'Ryan' | 'Baker' | 32 | 178 | 68 | 21.4619 |
| 31 | 'Andrew' | 'Parker' | 32 | 178 | 68 | 21.4619 |
| 32 | 'Natalie' | 'Carter' | 31 | 163 | 57 | 21.4536 |
| 33 | 'Audrey' | 'Collins' | 31 | 163 | 57 | 21.4536 |
| 34 | 'Allison' | 'Richardson' | 31 | 163 | 57 | 21.4536 |
| 35 | 'Ava' | 'Wilson' | 29 | 165 | 58 | 21.3039 |
| 36 | 'Ella' | 'Adams' | 29 | 165 | 58 | 21.3039 |
| 37 | 'Savannah' | 'Evans' | 29 | 165 | 58 | 21.3039 |
| 38 | 'Isabella' | 'Green' | 26 | 161 | 55 | 21.2183 |
| 39 | 'Olivia' | 'Thomas' | 26 | 161 | 53 | 20.4467 |
| 40 | 'Sophia' | 'White' | 24 | 160 | 50 | 19.5312 |
| 41 | 'Mia' | 'Young' | 23 | 158 | 48 | 19.2277 |
| 42 | 'Lily' | 'Perez' | 23 | 158 | 48 | 19.2277 |
| 43 | 'Brooklyn' | 'Sanchez' | 23 | 158 | 45 | 18.0260 |
| 44 | 'Nicholas' | 'Scott' | 35 | 190 | 63 | 17.4515 |
| 45 | 'Emma' | 'Johnson' | 25 | 162 | 45 | 17.1468 |

6. Pro každý záznam určete, zda má člověk podváhu (BMI < 18,5), optimální váhu (18,5 - 24,9), nadváhu (25,0 - 29,9) nebo obezitu (> 30). Tuto informaci uložte do sloupce BmiCategories ("underweight", "normal", "overweight", "obese").

Matici prázdných řetězců vytvoříme pomocí strings(m,n)

```
T.BmiCategories = strings(tableSize(1),1)
```

T = 45x7 table

| | Name | LastName | Age | Height | Weight | Bmi | BmiCategories |
|----|---------------|------------|-----|--------|--------|---------|---------------|
| 1 | 'Charlotte' | 'Martin' | 31 | 163 | 87 | 32.7449 | "" |
| 2 | 'Michael' | 'Brown' | 40 | 180 | 105 | 32.4074 | "" |
| 3 | 'Luke' | 'Bailey' | 32 | 178 | 98 | 30.9304 | "" |
| 4 | 'James' | 'Anderson' | 36 | 193 | 108 | 28.9941 | "" |
| 5 | 'Benjamin' | 'Phillips' | 30 | 180 | 93 | 28.7037 | "" |
| 6 | 'Paisley' | 'Rogers' | 28 | 167 | 75 | 26.8923 | "" |
| 7 | 'Emily' | 'Davis' | 27 | 170 | 75 | 25.9516 | "" |
| 8 | 'Leah' | 'Bell' | 29 | 165 | 70 | 25.7117 | "" |
| 9 | 'David' | 'Harris' | 37 | 195 | 92 | 24.1946 | "" |
| 10 | 'Jonathan' | 'Nelson' | 36 | 193 | 88 | 23.6248 | "" |
| 11 | 'Elijah' | 'Edwards' | 36 | 193 | 88 | 23.6248 | "" |
| 12 | 'Gabriel' | 'Cooper' | 36 | 193 | 88 | 23.6248 | "" |
| 13 | 'Bob' | 'Smith' | 35 | 190 | 85 | 23.5457 | "" |
| 14 | 'John' | 'Doe' | 30 | 180 | 75 | 23.1481 | "" |
| 15 | 'Violet' | 'Campbell' | 35 | 190 | 83 | 22.9917 | "" |
| 16 | 'Zoe' | 'Cook' | 35 | 190 | 83 | 22.9917 | "" |
| 17 | 'Daniel' | 'Thompson' | 38 | 188 | 80 | 22.6347 | "" |
| 18 | 'Liam' | 'Mitchell' | 38 | 188 | 80 | 22.6347 | "" |
| 19 | 'Evan' | 'Stewart' | 38 | 188 | 80 | 22.6347 | "" |
| 20 | 'Jacob' | 'Wright' | 30 | 180 | 73 | 22.5309 | "" |
| 21 | 'Nathan' | 'Reed' | 30 | 180 | 73 | 22.5309 | "" |
| 22 | 'Christopher' | 'Jackson' | 33 | 187 | 78 | 22.3055 | "" |
| 23 | 'William' | 'Miller' | 32 | 178 | 70 | 22.0932 | "" |
| 24 | 'Matthew' | 'Allen' | 34 | 186 | 75 | 21.6788 | "" |
| 25 | 'Samuel' | 'Roberts' | 34 | 186 | 75 | 21.6788 | "" |
| 26 | 'Isaac' | 'Morris' | 34 | 186 | 75 | 21.6788 | "" |
| 27 | 'Jane' | 'Doe' | 28 | 167 | 60 | 21.5139 | "" |
| 28 | 'Aria' | 'King' | 28 | 167 | 60 | 21.5139 | "" |
| 29 | 'Hazel' | 'Turner' | 28 | 167 | 60 | 21.5139 | "" |
| 30 | 'Ryan' | 'Baker' | 32 | 178 | 68 | 21.4619 | "" |
| 31 | 'Andrew' | 'Parker' | 32 | 178 | 68 | 21.4619 | "" |
| 32 | 'Natalie' | 'Carter' | 31 | 163 | 57 | 21.4536 | "" |
| 33 | 'Audrey' | 'Collins' | 31 | 163 | 57 | 21.4536 | "" |

| | Name | LastName | Age | Height | Weight | Bmi | BmiCategories |
|----|------------|--------------|-----|--------|--------|---------|---------------|
| 34 | 'Allison' | 'Richardson' | 31 | 163 | 57 | 21.4536 | "" |
| 35 | 'Ava' | 'Wilson' | 29 | 165 | 58 | 21.3039 | "" |
| 36 | 'Ella' | 'Adams' | 29 | 165 | 58 | 21.3039 | "" |
| 37 | 'Savannah' | 'Evans' | 29 | 165 | 58 | 21.3039 | "" |
| 38 | 'Isabella' | 'Green' | 26 | 161 | 55 | 21.2183 | "" |
| 39 | 'Olivia' | 'Thomas' | 26 | 161 | 53 | 20.4467 | "" |
| 40 | 'Sophia' | 'White' | 24 | 160 | 50 | 19.5312 | "" |
| 41 | 'Mia' | 'Young' | 23 | 158 | 48 | 19.2277 | "" |
| 42 | 'Lily' | 'Perez' | 23 | 158 | 48 | 19.2277 | "" |
| 43 | 'Brooklyn' | 'Sanchez' | 23 | 158 | 45 | 18.0260 | "" |
| 44 | 'Nicholas' | 'Scott' | 35 | 190 | 63 | 17.4515 | "" |
| 45 | 'Emma' | 'Johnson' | 25 | 162 | 45 | 17.1468 | "" |

```
T.BmiCategories(T.Bmi <= 18.5) = "underweight";
T.BmiCategories(T.Bmi > 18.5 & T.Bmi < 25) = "normal";
T.BmiCategories(T.Bmi >= 25 & T.Bmi < 30) = "overweight";
T.BmiCategories(T.Bmi >= 30) = "obese";
T
```

T = 45x7 table

| | Name | LastName | Age | Height | Weight | Bmi | BmiCategories |
|----|-------------|------------|-----|--------|--------|---------|---------------|
| 1 | 'Charlotte' | 'Martin' | 31 | 163 | 87 | 32.7449 | "obese" |
| 2 | 'Michael' | 'Brown' | 40 | 180 | 105 | 32.4074 | "obese" |
| 3 | 'Luke' | 'Bailey' | 32 | 178 | 98 | 30.9304 | "obese" |
| 4 | 'James' | 'Anderson' | 36 | 193 | 108 | 28.9941 | "overweight" |
| 5 | 'Benjamin' | 'Phillips' | 30 | 180 | 93 | 28.7037 | "overweight" |
| 6 | 'Paisley' | 'Rogers' | 28 | 167 | 75 | 26.8923 | "overweight" |
| 7 | 'Emily' | 'Davis' | 27 | 170 | 75 | 25.9516 | "overweight" |
| 8 | 'Leah' | 'Bell' | 29 | 165 | 70 | 25.7117 | "overweight" |
| 9 | 'David' | 'Harris' | 37 | 195 | 92 | 24.1946 | "normal" |
| 10 | 'Jonathan' | 'Nelson' | 36 | 193 | 88 | 23.6248 | "normal" |
| 11 | 'Elijah' | 'Edwards' | 36 | 193 | 88 | 23.6248 | "normal" |
| 12 | 'Gabriel' | 'Cooper' | 36 | 193 | 88 | 23.6248 | "normal" |
| 13 | 'Bob' | 'Smith' | 35 | 190 | 85 | 23.5457 | "normal" |
| 14 | 'John' | 'Doe' | 30 | 180 | 75 | 23.1481 | "normal" |
| 15 | 'Violet' | 'Campbell' | 35 | 190 | 83 | 22.9917 | "normal" |

| | Name | LastName | Age | Height | Weight | Bmi | BmiCategories |
|----|---------------|--------------|-----|--------|--------|---------|---------------|
| 16 | 'Zoe' | 'Cook' | 35 | 190 | 83 | 22.9917 | "normal" |
| 17 | 'Daniel' | 'Thompson' | 38 | 188 | 80 | 22.6347 | "normal" |
| 18 | 'Liam' | 'Mitchell' | 38 | 188 | 80 | 22.6347 | "normal" |
| 19 | 'Evan' | 'Stewart' | 38 | 188 | 80 | 22.6347 | "normal" |
| 20 | 'Jacob' | 'Wright' | 30 | 180 | 73 | 22.5309 | "normal" |
| 21 | 'Nathan' | 'Reed' | 30 | 180 | 73 | 22.5309 | "normal" |
| 22 | 'Christopher' | 'Jackson' | 33 | 187 | 78 | 22.3055 | "normal" |
| 23 | 'William' | 'Miller' | 32 | 178 | 70 | 22.0932 | "normal" |
| 24 | 'Matthew' | 'Allen' | 34 | 186 | 75 | 21.6788 | "normal" |
| 25 | 'Samuel' | 'Roberts' | 34 | 186 | 75 | 21.6788 | "normal" |
| 26 | 'Isaac' | 'Morris' | 34 | 186 | 75 | 21.6788 | "normal" |
| 27 | 'Jane' | 'Doe' | 28 | 167 | 60 | 21.5139 | "normal" |
| 28 | 'Aria' | 'King' | 28 | 167 | 60 | 21.5139 | "normal" |
| 29 | 'Hazel' | 'Turner' | 28 | 167 | 60 | 21.5139 | "normal" |
| 30 | 'Ryan' | 'Baker' | 32 | 178 | 68 | 21.4619 | "normal" |
| 31 | 'Andrew' | 'Parker' | 32 | 178 | 68 | 21.4619 | "normal" |
| 32 | 'Natalie' | 'Carter' | 31 | 163 | 57 | 21.4536 | "normal" |
| 33 | 'Audrey' | 'Collins' | 31 | 163 | 57 | 21.4536 | "normal" |
| 34 | 'Allison' | 'Richardson' | 31 | 163 | 57 | 21.4536 | "normal" |
| 35 | 'Ava' | 'Wilson' | 29 | 165 | 58 | 21.3039 | "normal" |
| 36 | 'Ella' | 'Adams' | 29 | 165 | 58 | 21.3039 | "normal" |
| 37 | 'Savannah' | 'Evans' | 29 | 165 | 58 | 21.3039 | "normal" |
| 38 | 'Isabella' | 'Green' | 26 | 161 | 55 | 21.2183 | "normal" |
| 39 | 'Olivia' | 'Thomas' | 26 | 161 | 53 | 20.4467 | "normal" |
| 40 | 'Sophia' | 'White' | 24 | 160 | 50 | 19.5312 | "normal" |
| 41 | 'Mia' | 'Young' | 23 | 158 | 48 | 19.2277 | "normal" |
| 42 | 'Lily' | 'Perez' | 23 | 158 | 48 | 19.2277 | "normal" |
| 43 | 'Brooklyn' | 'Sanchez' | 23 | 158 | 45 | 18.0260 | "underweight" |
| 44 | 'Nicholas' | 'Scott' | 35 | 190 | 63 | 17.4515 | "underweight" |
| 45 | 'Emma' | 'Johnson' | 25 | 162 | 45 | 17.1468 | "underweight" |

7. Spočítejte počet lidí v jednotlivých kategoriích. A uložte tuto informaci do proměnných `underweight`, `normal`, `overweight` a `obese`.


```
underweight = sum(T.Bmi <= 18.5)
```

```
underweight = 3
```

```
normal = sum(T.Bmi > 18.5 & T.Bmi < 25)
```

```
normal = 34
```

```
overweight = sum(T.Bmi >= 25 & T.Bmi < 30)
```

```
overweight = 5
```

```
obese = sum(T.Bmi >= 30)
```

```
obese = 3
```

8. Vytvořte dvě proměnné představující spodní a horní hodnotu BMI. Obě tyto proměnné se budou nastavovat pomocí slideru (Krok a krajní hodnoty zvolte vhodně. Je možné používat i hodnoty proměnných.). Tyto dvě hodnoty použijte pro filtraci zázamů v tabulce (vyfiltrovanou tabulku uložte do nové proměnné).

```
minBmi = floor(min(T.Bmi))
```

```
minBmi = 17
```

```
maxBmi = ceil(max(T.Bmi))
```

```
maxBmi = 33
```

```
low = 22.4
```

```
low = 22.4000
```

```
top = 23.4
```

```
top = 23.4000
```

```
T2 = T(T.Bmi >= low & T.Bmi <= top,:)
```

```
T2 = 8x7 table
```

| | Name | LastName | Age | Height | Weight | Bmi | BmiCategories |
|---|----------|------------|-----|--------|--------|---------|---------------|
| 1 | 'John' | 'Doe' | 30 | 180 | 75 | 23.1481 | "normal" |
| 2 | 'Violet' | 'Campbell' | 35 | 190 | 83 | 22.9917 | "normal" |
| 3 | 'Zoe' | 'Cook' | 35 | 190 | 83 | 22.9917 | "normal" |
| 4 | 'Daniel' | 'Thompson' | 38 | 188 | 80 | 22.6347 | "normal" |
| 5 | 'Liam' | 'Mitchell' | 38 | 188 | 80 | 22.6347 | "normal" |
| 6 | 'Evan' | 'Stewart' | 38 | 188 | 80 | 22.6347 | "normal" |
| 7 | 'Jacob' | 'Wright' | 30 | 180 | 73 | 22.5309 | "normal" |
| 8 | 'Nathan' | 'Reed' | 30 | 180 | 73 | 22.5309 | "normal" |

9. Novou tabulku uložte do newTable.csv.

```
writetable(T, 'newTable.csv')
```

10. Vyexportujte tento skript jako PDF a odevzdejte.