

Variable list:

Sex - float, stores the parameter relating to the users sex used for risk calculation

Age - int, stores the users age

BMI - float, stores the users BMI

Hypertension - float, stores the parameter relating to whether the user takes hypertension medication used for risk calculation

Steroids - float, stores the parameter relating to whether the user uses steroids used for risk calculation

smoker - float, stores the parameter relating to the users smoking status used for risk calculation

history - float, stores the parameter relating to the users family history of diabetes used for risk calculation

Exponent - float, stores the "exponent" value used in the risk calculation equation, calculated using the equation $\text{exponent} = 6.322 + \text{sex} - (0.063 * \text{age}) - \text{BMI} - \text{hypertension} - \text{steroids} - \text{smoker} - \text{history}$

Risk - float, stores the final calculated risk calculated with $100 / (1 + e^{**} \text{exponent})$

userInput - string, used to store the user input relating to the yes or no questions in order to compare to both uppercase and lowercase letters

Sequence of Steps:

Import euler's constant from math module

Ask user for gender, if female, assign gender variable to 0.879, if male, assign sex variable to 0

Ask user for age and assign to properly casted variable age

Ask user for BMI. If under 25, assign BMI variable to 0, if between 25 and 27.49 assign BMI variable to 0.699, if between 27.5 and 29.99 assign BMI variable to 1.97, if over 30, assign BMI variable to 2.518

Ask user for hypertension medication use, if answered yes, assign hypertension variable to 1.222, if answered no, assign hypertension variable to 0

Ask user if they use steroids, if answered yes, assign steroids variable to 2.191, if answered no, assign steroids variable to 0

Ask user if they currently smoke, if answered yes, assign smoker variable to 0.855, if answered no, ask user if they used to smoke, if they used to smoke, assign smoke variable to -0.218, if they have never smoked, assign smoker variable to 0

Ask the user for family history of diabetes, if answered no, assign history variable to 0, if answered yes, ask user whether history is in only parent or only sibling or both parent and sibling. If only parent or sibling, assign history variable to 0.728, if both parent and sibling, assign history variable to 0.753

Calculate the exponent variable using the formula $n = 6.322 + \text{sex} - (0.063 * \text{age}) - \text{BMI} - \text{hypertension} - \text{steroids} - \text{smoker} - \text{history}$, substituting in the variable values

Calculate risk score variable using the formula $\text{risk} = 100 / (1 + e^n)$ where n is the previously calculated risk variable

Print the users calculated diabetes risk to the console in a full sentence

Test Cases:

	Sex	Age	BMI	Hyper-tension	Steroids	Smoker	Former smoker	Family history	History in both parent and sibling	Expected output	Case Type
1	M	17	21	n	n	n	n	y	n	1.1%	typical
2	F	25	20	n	n	y	-	n	-	0.8%	typical
3	M	99	99	y	y	y	-	y	y	99.9%	edge
4	F	1	1	n	n	n	n	y	y	0.2%	edge
5	M	12	25	y	n	y	-	n	-	5.8%	edge
6	F	64	27.5	n	y	n	y	n	-	68.4%	edge

7	M	32	30	y	n	y	-	n	-	57.2%	edge
8	F	40	20	y	y	n	n	y	n	36.8%	typical
9	M	50	30	n	n	n	y	n	-	29.5%	typical
10	F	60	40	n	y	n	y	y	n	85.8%	typical
11	M	45	32	y	n	n	y	y	n	68.2%	typical
12	F	37	28	n	n	n	y	n	-	4.2%	typical
13	M	93	87	n	y	y	-	y	y	99.7%	edge
14	F	29	27	y	n	n	y	n	-	2.5%	edge
15	M	34	54	y	y	y	-	n	-	93.1%	typical
16	M	73	21	n	n	n	y	n	-	12.6%	typical
17	F	64	29	y	n	n	n	y	n	67.9%	typical
18	F	27	32	n	y	n	n	y	n	48.4%	typical
19	F	55	18	y	n	n	n	n	-	7.5%	typical
20	M	6	7	n	n	n	n	n	-	0.3%	edge
21	M	85	10	y	n	n	n	n	n	56.3%	typical
22	F	32	54	n	n	n	y	n	n	5.3%	typical
23	F	25	20	y	n	y	y	y	y	5.8%	typical
24	M	30	10	y	y	y	y	y	y	64.3%	typical
25	F	45	25	n	n	n	n	n	n	2.5%	typical
26	F	35	20	n	n	n	n	n	n	0.7%	typical
27	M	45	50	y	y	n	n	y	y	95.6%	edge
28	M	15	2	n	n	y	y	n	-	2.2%	typical
29	F	6	7	y	n	y	n	y	-	0.9%	typical
30	M	10	3	n	y	n	y	n	-	2.4%	typical
31	M	31	40	N	N	Y	Y	N	N	43.3%	edge
32	F	40	60	Y	Y	Y	-	N	-	89.1%	edge
33	F	25	14	N	Y	N	N	N	-	3.1%	typical
34	F	3	1	N	N	Y	-	N	-	0.2%	typical
35	F	32	16	Y	Y	N	Y	Y	N	22.1%	typical
36	M	28	37	N	N	N	Y	N	-	9.5%	typical
37	F	54	60	N	N	N	Y	N	-	18.3%	typical

38	M	65	12	N	Y	N	N	Y	Y	67.2%	edge
39	M	4	7	N	N	Y	-	N	-	0.5%	typical
40	F	42	24	Y	Y	N	Y	N	-	20.4%	typical