**Assignment2: Total Marks - 10**

**All Questions are compulsory**

**No Cheating. 0 Grade, if found copied assignment.**

**Make Sure Assignment Follows Coding Conventions discussed in class.**

**Rubrics for each:**

**Accepting Input from User: 1 Mark**

**Display correct Output: 1 Mark**

**Correct Calculation: 0.5 Mark**

**Coding conventions: 0.3 Mark**

**Comments: 0.2**

**Last Question: Correct if/else statements -> 1 Marks**

Q1; Write a program that displays following table, This time POW(A,B) column values should be generated using Math Class Power function. 3 Marks

A b pow(A,b)

1 2 1

2 3 8

3 4 81

Q2; Write a program that lets user guess flip of a coin is head or tail. The program generates random number either 0 or 1, where 0 represents head and 1 represents tail. The program prompts user to enter his guess whether head or tail and displays “You Win” if guess is correct otherwise “Better Luck Next Time”.

For 0 or 1 just round off value generated using random function of Math Class. 3 Marks

Q3: Write a Program to calculate Body Mass Index and print BMI category as specified at the last on this page. BMI can be calculated as:- 4 Marks

**Imperial BMI Formula**

**BMI** = weight (lb) ÷ height2 (in2) × 703

For example:-

For an adult with height of 5ft 11 inches and weight of 155 pounds (lb). Step one is to convert the height into inches only. There are 12 inches in a foot, so we simply multiply the 5ft by 12 and then add the 11 inches. This gives us a total of 71 inches.

Let's plug those figures into our formula:

**BMI** = (155 ÷ (71 × 71)) × 703

We do the multiplication inside the brackets first:

**BMI** = (155 ÷ 5041) × 703

And then...

**BMI** = 0.030747867 × 703

**This gives us a BMI figure of 21.62.**

|  |  |
| --- | --- |
| **BMI** | **BMI Category** |
| Less than 15 | Very severely underweight |
| Between 15 and 16 | Severely underweight |
| Between 16 and 18.5 | Underweight |
| Between 18.5 and 25 | Normal (healthy weight) |
| Between 25 and 30 | Overweight |
| Between 30 and 35 | Moderately obese |
| Between 35 and 40 | Severely obese |
| Over 40 | Very severely obese |