Programming assignment 1
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Problems:

1. **Body Mass Index (BMI) is a measure of health on weight. It can be calculated by taking your weight in kilograms and dividing by the square of your height in meters. Write a program than prompts the user to enter a weight in pounds and height in inches and display the BMI. Note that 1 pound is 0.45359237 kilogram and 1 inch is 0.0254 meter.**
2. **Write a program that prompts the user to enter two points (x1,y1) and (x2,y2) and display their distance.**
3. **Write a program that prompts the user to enter a number n and displays n1, n2, n3, n4, n5.**
4. **Write a program that prompts the user for a character and displays its ASCII code as well as the ASCII codes for the next 3 characters.**
5. **Write a program that prompts the user to enter an uppercase letter and converts it to a lowercase letter. Hint: In the ASCII table the uppercase letters appear before the lowercase letters. The offset between any uppercase letter and its corresponding lowercase letter is the same**

Problem 1

```
Enter weight in pounds:
35
Enter height in inches:
50
Your bmi is:9.84297

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 11196) exited with code 0.
Press any key to close this window . . .
```

Pic.1. Successful program execution

```
Enter weight in pounds:
-30
You entered wrong weight
D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 7532) exited with code 0.
Press any key to close this window . . .
```

Pic.2. Entering negative or 0 value of weight stops the program

```
Enter weight in pounds:
56
Enter height in inches:
0
You entered wrong height
D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 18364) exited with code 0.
Press any key to close this window . . .
```

Pic.3. Entering negative or 0 value of height stops the program

Problem 2

```
Enter x1 and y1:
3
4
Enter x2 and y2:
5
9
The distance between the points (3,4) and (5,9) is 5.38516

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 11144) exited with code 0.
Press any key to close this window . . .
```

Pic.4. Successful program execution

```
Enter x1 and y1:
-5
-10
Enter x2 and y2:
0
95
The distance between the points (-5,-10) and (0,95) is 105.119

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 18120) exited with code 0.
Press any key to close this window . . .
```

Pic.5. Program also accepts negative numbers and 0

```
Enter x1 and y1:
6.5
-19.345
Enter x2 and y2:
0
234.656
The distance between the points (6.5,-19.345) and (0,234.656) is 254.084

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 12652) exited with code 0.
Press any key to close this window . . .
```

Pic.6 As well as fractional numbers

Problem 3

```
Enter n:34

34 raised in the power of 1: 34
34 raised in the power of 2: 1156
34 raised in the power of 3: 39304
34 raised in the power of 4: 1.33634e+06
34 raised in the power of 5: 4.54354e+07

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 14536) exited with code 0.
Press any key to close this window . . .
```

Pic.7. Successful program execution

```
Enter n:-10

-10 raised in the power of 1: -10
-10 raised in the power of 2: 100
-10 raised in the power of 3: -1000
-10 raised in the power of 4: 10000
-10 raised in the power of 5: -100000

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 8132) exited with code 0.
Press any key to close this window . . .
```

Pic.8 Works with negative and 0 values

Problem 4

```
Enter a character:A

ASCII code for A is 65
ASCII code for B is 66
ASCII code for C is 67

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 8216) exited with code 0.
Press any key to close this window . . .
```

Pic.9 Successful program execution

```
Enter a character:G

ASCII code for G is 71
ASCII code for H is 72
ASCII code for I is 73

D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 17216) exited with code 0.
Press any key to close this window . . .
```

Pic.10 Another try

Problem 5

```
Enter an uppercase letter : F
The lowercase letter is : f
D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 4600) exited with code 0.
Press any key to close this window . . .
```

Pic.11 Successful program execution

```
Enter an uppercase letter : 5
You entered a character which is not a letter or you entered a lowercase letter
D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 17160) exited with code 0.
Press any key to close this window . . .
```

Pic.12 Letter check

```
Enter an uppercase letter : g
You entered a character which is not a letter or you entered a lowercase letter
D:\C++ Projects\ProgAssignment1\Debug\ProgAssignment1.exe (process 1180) exited with code 0.
Press any key to close this window . . .
```

Pic.13 Lowercase letter check