Problem – 1: **List Indexing**

Use list indexing to determine how many days are in a particular month based on the integer variable ***month***, and store that value in the integer variable ***num\_days***. For example, if month is 8, ***num\_days*** should be set to 31, since the eighth month, August, has 31 days.

Problem – 2: **Count Unique Words**

**verse** = "if you can keep your head when all about you are losing theirs and blaming it on you if you can trust yourself when all men doubt you but make allowance for their doubting too if you can wait and not be tired by waiting or being lied about don’t deal in lies or being hated don’t give way to hating and yet don’t look too good nor talk too wise"

1. Split verse into a list of words. Hint: You can use a string method ***split()***.
2. Convert the list into a data structure that would keep only the ***unique elements*** from the list.
3. Print the length of the container

Problem-3: **Define a Dictionary**

Define a dictionary named ***population*** that contains this data:

|  |  |
| --- | --- |
| **Keys** | **Values (in million)** |
| Shanghai | 17.8 |
| Istanbul | 13.3 |
| Karachi | 13.0 |
| Mumbai | 12.5 |

1. Print the value of element ***Karachi***
2. Check if ***Dhaka*** is in the dictionary or not?
3. Update the dictionary with the value (“Dhaka” : 22.5)

Problem – 4: Create a nested dictionary using the following information

|  |  |  |
| --- | --- | --- |
| **Movie Name** | **Director Name** | **Releasing Year** |
| Braveheart | Mel Gibson | 1995 |
| The Terminal | Steven Spielberg | 2004 |
| The Hateful Eight | Quentin Tarantino | 2015 |
| Vertigo | Alfred Hitchcock | 1958 |
| Amadeus | Milos Forman | 1984 |
| Unforgiven | Clint Eastwood | 1992 |

1. Create a dictionary named “***movie\_name***” and store **Movie Name** as Key and **Releasing year** as Value.

**Example:**

movie\_name = {“Braveheart” : 1995 }

1. Create a list named “***director\_name***” and update the dictionary with the information as follows:

**Example:**

movie\_name = {“Braveheart” : {“name”: “Mel Gibson”

“year” : 1995}

1. Store the new information in a variable name“***movie\_information***”.

Problem – 5: **Which Prize**

Write an if statement that lets a competitor know which of these prizes they won based on the number of points they scored, which is stored in the integer variable points.

|  |  |
| --- | --- |
| **Points** | **Prize** |
| 1 - 50 | wooden rabbit |
| 51 - 150 | no prize |
| 151 - 180 | wafer-thin mint |
| 181 - 200 | penguin |

In your if statement, assign the ***result*** variable to a string holding the appropriate ***message*** based on the value of points. If they've won a prize, the message should state "***Congratulations! You won a [prize name]!***" with the prize name. If there's no prize, the message should state "***Oh dear, no prize this time***."

Problem – 6: **Tax Purchase**

Depending on where an individual is from, we need to tax them appropriately. The states of CA, MN, and NY have taxes of **7.5%, 9.5%,** and **8.9%** respectively. Use this information to take the amount of a purchase and the corresponding state to assure that they are taxed by the right amount.

1. Define two variables named ***state*** & ***purchase\_amount*** and take user input for both the variables
2. Use the formula ***final\_amount*** = ***purchase\_amount*** + (.075\****purchase\_amount***)