week4-solutions

October 25, 2018

In [1]:
```
# Exc. 1 Model Answer
username = input("Please enter your username: ")
password = input("Please enter your password: ")

username = username.lower() #  Convert the username to lowercase

# Check that the username-password combination is valid
if (username == "alex") and (password == "fish123"):
    print("Welcome back Alex")
elif (username == "frank") and (password == "password"):
    print("Welcome back Frank")
else:
    print("Invalid login details")

# ------------------------------------------------------------------------------------
# - Also Possible -
if ((username == "alex") and (password == "fish123")) or ((username == "frank") and (pa
    print("Welcome back " + username)
else:
    print("Invalid login details")

# However, this is difficult to read, and will get even more ugly if we add more users
```

```
Please enter your username: a
Please enter your password: a
Invalid login details
Invalid login details
```

In [2]:
```
# Exc. 2 Model Answer
username = input("Please enter your username: ")
password = input("Please enter your password: ")

username = username.lower() # convert username to lowercase

# This is our mini database of valid users
valid_users = ["alex", "frank", "nina", "michael"]
valid_passwords = ["1234", "newyork", "feelingood", "thriller"]
```

```
        # Store bad passwords
        bad_passwords = ["1234", "password", "himrhacker"]

        logged_in = False # For changing password later
        password_index = 0 # Also for changing password

        # - Check log in -
        if username in valid_users:
            # now we need to get the matching password
            index = valid_users.index(username)
            matching_password = valid_passwords[index]
            if (password == matching_password):
                print("Welcome back " + username)
                logged_in = True

        # - Check password -
        # (We could also have done this by nesting another if statement above)

        if logged_in and (password in bad_passwords):
            change_password = input("Your password sucks! Wanna change it? ")
            if "y" in change_password.lower(): # works for Yes, Yeah, yes etc.
                valid_passwords[password_index] = input("OK, New password: ")

        # - Check it's working -
        if logged_in:
            print("Username: " + username)
            print("Password: " + valid_passwords[password_index])
```

```
Please enter your username: a
Please enter your password: a
```

```
In [3]: # Exc. 3 Model Answer
        import time
        import sys

        num_attempts = 0
        max_attempts = 5

        time_to_sleep = 10

        username = input("Please enter your username: ")
        password = input("Please enter your password: ")

        username = username.lower() # convert username to lowercase

        # This is our mini database of valid users
```

```
        valid_users = ["alex", "frank", "nina", "michael"]
        valid_passwords = ["1234", "newyork", "feelingood", "thriller"]

        # Store bad passwords
        bad_passwords = ["1234", "password", "himrhacker"]

        logged_in = False # For changing password later
        password_index = 0 # Also for changing password

        # - Check log in -
        if username in valid_users:
            # now we need to get the matching password
            index = valid_users.index(username)
            matching_password = valid_passwords[index]

            while (password != matching_password):
                print("Wrong password, please try again!")
                password = input("Please enter your password: ")

                num_attempts += 1

                if num_attempts >= max_attempts:
                    print("Too many attempts! Exiting...")
                    sys.exit()

                time.sleep(time_to_sleep * num_attempts)

            print("Welcome back " + username)
            logged_in = True

        # - Check password -
        # (We could also have done this by nesting another if statement above)

        if logged_in and (password in bad_passwords):
            change_password = input("Your password sucks! Wanna change it? ")
            if "y" in change_password.lower(): # works for Yes, Yeah, yes etc.
                valid_passwords[password_index] = input("OK, New password: ")

        # - Check it's working -
        if logged_in:
            print("Username: " + username)
            print("Password: " + valid_passwords[password_index])

Please enter your username: a
Please enter your password: a
```