**1. Write a program to prompt user to enter userid and password. If Id and password is incorrect give him chance to re-enter the credentials. Let him try 3 times. After that program to terminate.**

**first\_name = input("Enter first name: ")**

**last\_name = input("Enter last name: ")**

**userid = input("Enter userid: ")**

**password = input("Enter password: ")**

**i = 0**

**while i < 4:**

**if ((first\_name not in userid) or (last\_name not in userid)) and ((type(password) == int) and (len(password) == 8)) :**

**print("userid invalid please try again")**

**userid = input("Enter userid: ")**

**password = int(input("Enter password: "))**

**i += 1**

**else:**

**print("Welcome aboard!!")**

**2. Enter number of students from user. For those many students accept marks of 5 subject marks from user and calculate percentage. Display all percentage and average percentage of students.**

**num = int(input("Enter total number of students: "))**

**sum\_of\_percents = 0**

**i = 0**

**while i != num:**

**maths = int(input("Enter the maths marks out of 100: "))**

**science = int(input("Enter the science marks out of 100: "))**

**history = int(input("Enter the history marks out of 100: "))**

**english = int(input("Enter the english marks out of 100: "))**

**geography = int(input("Enter the geography marks out of 100: "))**

**percentage = ((maths + science + history + english + geography) / 500) \* 100**

**sum\_of\_percents = sum\_of\_percents + (percentage / 100)**

**print(i,". Percentage of student: ",percentage)**

**i += 1**

**avg\_of\_all\_percents = (sum\_of\_percents / num) \* 100**

**print("Class percentage : ", avg\_of\_all\_percents)**

**3. Accept no. of passengers from user and per ticket cost. Then accept age of each passenger and then calculate total amount to ticket to travel for all of them based on following condition:**

**a.\_Children below 12 = 30% discount**

**b. Senior citizen(above 59) = 50% discount**

**c. Others need to pay full.**

**num = int(input("Enter total number of passengers: "))**

**total\_cost = 0**

**i = 0**

**while i != num:**

**per\_tic\_cost = int(input("Enter ticket cost: "))**

**age = int(input("Enter age: "))**

**if age < 12:**

**discount = per\_tic\_cost \* 0.30**

**total\_cost = total\_cost + (per\_tic\_cost - discount)**

**elif age > 59:**

**discount = per\_tic\_cost \* 0.50**

**total\_cost = total\_cost + (per\_tic\_cost - discount)**

**else:**

**total\_cost = total\_cost + per\_tic\_cost**

**i += 1**

**print("Total cost of",num,"passengers is = ",total\_cost)**

**4. Write a program to check if given number is Armstrong number or not. (Hint:153=1\*1\*1+5\*5\*5+3\*3\*3,1634=1\*1\*1\*1+6\*6\*6\*6+3\*3\*3\*3+ 4\*4\*4\*4)**

**for num in range(1, 100):**

**size\_of\_num = len(str(num))**

**quo = int(num)**

**sum = 0**

**while quo != 0:**

**rem = quo % 10**

**quo = quo // 10**

**sum = sum + (rem \*\* size\_of\_num)**

**if sum == num:**

**print(num)**

**5. Write a program to print prime numbers between 1 to 100.**

**for num in range(2, 100):**

**for i in range(2, num):**

**if num % i == 0:**

**break**

**else:**

**print(num, end=" ")**

**6. Write a program to print first n prime numbers.**

**n = int(input("Enter a number: "))**

**cnt = 0**

**num = 2**

**while cnt != n:**

**for i in range(2, num):**

**if num % i == 0:**

**break**

**else:**

**print(num, end=" ")**

**cnt += 1**

**num += 1**

**7. Write a program to solve the following series:**

**a. 1!+ 2!+ 3!+ 4!+ .....n!**

**b. N+N^2+N^3+N^4.....+N^N(here^means**

**exponent)**

**c. Find the sum of a geometric series from 1 to n where the common ratio is 2.**

**d. S = a +a2 /2+ a3 / 3+ ......+ a10/10e.x -x2/3 + x3/5-x4/7 +....to n terms**

**n = int(input("Enter a number: "))**

**fact = 1**

**sum\_of\_facts = 0**

**sum\_of\_expo = 0**

**sum\_of\_geo = 0**

**sum\_a = 0**

**sum\_even = 0**

**sum\_odd = 0**

**i = 1**

**num = 1**

**while i != n + 1:**

**fact = fact \* i**

**sum\_of\_facts = sum\_of\_facts + fact**

**sum\_of\_expo = sum\_of\_expo + (n \*\* i)**

**sum\_of\_geo = sum\_of\_geo + (i + i)**

**sum\_a += ((n \* i) / i)**

**if i % 2 == 0:**

**sum\_even += ((n \* i) / num)**

**num += 2**

**else:**

**sum\_odd += ((n \* i) / num)**

**num += 2**

**i += 1**

**print("a. sum of factorials: ",sum\_of\_facts)**

**print("b. sum of exponents: ",sum\_of\_expo)**

**print("c. sum of geometric series: ",sum\_of\_geo)**

**print("d. sum of a thingy: ",sum\_a)**

**print("e. ans =", sum\_odd - sum\_even)**