**MINISTRY OF EDUCATION OF TURKMENISTAN**

**INTERNATIONAL UNIVERSITY FOR THE HUMANITIES AND DEVELOPMENT**

**FACULTY OF INFORMATION TECHNOLOGIES**

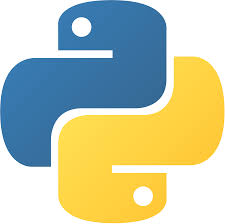
**DEPARTMENT OF COMPUTER TECHNOLOGY AND SYSTEMS**

**“Introduction to Programming”**

**PRACTICE FOR MIDTERM EXAM**

***(“For Computer Technology, Programming for Computer System, Information***

***and Communication Technology majors”)***

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Aşakdaky programmalary python programmirleme dilinde ýazmaly.

1. Ulanyjydan adyny we doglan ýylyny almaly we ulanyjynyň adyny we onuň näçe ýaşdygyny aýtmaly.
2. Given the side “a” of a square, find the perimeter P of the square: P = 4·a

Kwadratyň tarapy a berlen. Onuň perimetrini (P = 4\*a) tapmaly.

1. Given the side “a” of a square, find the area S of the square: S =

Kwadratyň tarapy a berlen. Onuň meýdanyny (S = ) tapmaly.

1. The sides “a” and “b” of a rectangle are given. Find the area S = a·b and the perimeter

P = 2·(a + b) of the rectangle.

Gönüburçlygyň taraplary a we b berlen. Onuň meýdanyny (S = a\*b) we perimetrini

(P = 2\*(a + b)) tapmaly.

1. Given the diameter d of a circle, find the length L of the circle: L = π·d. Use 3.14 for a value of π.

Töweregiň d diametri berlen. Onuň uzynlygyny tapmaly (L =π \* d. π -ululygyň bahasyny 3.14-e deň diýip hasaplamaly).

1. Given the edge a of a cube, find the volume V = and the surface area S = 6· of the cube.

Kubuň gapyrgasynyň uzynlygy a berlen. Kubuň göwrümini (V = ) we üstleriniň meýdanyny (S = 6·) tapmaly

1. The legs a and b of a right triangle are given. Find the hypotenuse c and the perimeter P of the triangle: c=, P=a+b+c.

Gönüburçly üçburçlygyň katetleriniň uzynlygy a we b sanlara deň. Onuň c gipotenuzasyny (c=) we P perimetrini (P = a + b + c) tapmaly.

1. Given the radius R of a circle, find the length L of the circumference and the area S of the circle: L = 2·π·R, S = π·. Use 3.14 for a value of π.

Berlen R radiusly töweregiň L uzynlygyny we şol radiusly tegelegiň S meýdanyny tapmaly L = 2·π·R, S = π·.

1. Given an independent variable x, find the value of a function f = − 7.

x-iň berlen bahasynda f = – 7 funksiýanyň bahasyny tapmaly.

1. Given an independent variable x, find the value of a function 2

x-iň berlen bahasynda 2 funksiýanyň bahasyny tapmaly.

1. Exchange the values of two given variables A and B. Output the new values of A and B.

A we B üýtgeýän ululyklaryň bahalaryny çalşyrmaly we olaryň täze bahalaryny çapa çykarmaly.

1. Variables A, B, C are given. Change values of the variables by moving the given value of A into the variable B, the given value of B into the variable C, and the given value of C into the variable A. Output the new values of A, B, C.

A, B, C üýtgeýän ululyklar berlen. A-nyň bahasyny B ululygyň, B-niň bahasyny C ululygyň, C-niň bahasyny bolsa A ululygyň adyna geçirmeli. A, B, C ululyklaryň täze bahalaryny çapa çykarmaly.

1. Variables A, B, C are given. Change values of the variables by moving the given value of A into the variable C, the given value of C into the variable B, and the given value of B into the variable A. Output the new values of A, B, C.

A, B, C üýtgeýän ululyklar berlen. A-nyň bahasyny C ululygyň, C-niň bahasyny B ululygyň, B-niň bahasyny bolsa A ululygyň adyna geçirmeli. A, B, C ululyklaryň täze bahalaryny çapa çykarmaly.

1. A two-digit integer is given. Output its left digit (a tens digit) and then its right digit (a ones digit). Use the operator of integer division for obtaining the tens digit and the operator of taking remainder for obtaining the ones digit.

Iki belgili san berlen. Ilki ol sanyň çepki sifrini (onlugyny), soňra bolsa – sagky sifriny (birligini) çapa çykarmaly. Onluklaryny tapmak üçin bitinleýin bölmek operasiýasyny ulanmaly, birliklerini tapmak üçin bolsa bitinleýin bölmekden galýan galyndydan

peýdalanmaly.

1. A two-digit integer is given. Find the sum and the product of its digits.

Iki belgili san berlen. Onuň sifrleriniň jemini we köpeltmek hasylyny tapmaly.

1. A two-digit integer is given. Output an integer obtained from the given one by exchange of its digits.

Iki belgili san berlen. Onuň sifrleriniň orunlary çalşyrylanda emele gelen sany çapa çykarmaly.

1. A three-digit integer is given. Using one operator of integer division find first digit of the given integer (a hundreds digit)

Üç belgili san berlen. Bitinleýin bölmek operasiýasyny bir gezek ulanmak arkaly berlen sanyň ilkinji sifrini (ýüzlüklerini) çapa çykarmaly.

1. A three-digit integer is given. Output its last digit (a ones digit) and then its middle digit (a tens digit).

Üç belgili san berlen. Ilki onuň iň soňky sifrini (birliklerini),soňra bolsa ortaky sifrini (onluklaryny) çapa çykarmaly.

1. A three-digit integer is given. Find the sum and the product of its digits.

Üç belgili san berlen. Onuň sifrleriniň jemini we köpeltmek hasylyny tapmaly.

1. A three-digit integer is given. Output an integer obtained from the given one by reading it from right to left (for example, 123 will be changed to 321).

Üç belgili san berlen. Bu sany tersine, ýagny sagdan çepe tarap okanyňda alynýan sany çapa çykarmaly (mysal üçin, 123 san berlen bolsa, onda 321 san emele geler).

1. A four-digit integer is given. Find the sum and the product of its digits.

Dört belgili san berlen. Onuň sifrleriniň jemini we köpeltmek hasylyny tapmaly.

1. A four-digit integer is given. Output an integer obtained from the given one by reading it from right to left (for example, 1234 will be changed to 4321).

Üçbelgili san berlen. Bu sany tersine, ýagny sagdan çepe tarap okanyňda alynýan sany çapa çykarmaly (mysal üçin, 1234 san berlen bolsa onda 4321 san emele geler).

**Conditional statements (if/else/elif)**

1. Ask from a user the age. If the user is older than or equal to 40 output “You are old”, else “You are young”.

Ulanyjydan ýaşyny soramaly. Eger-de ýaşy 40-a deň ýa-da uly bolsa, “Ýaşy uly”, 40-dan kiçi bolsa “Ýaşy kiçi” diýip ýazmaly.

1. Get from user his height. If the height is higher than or equal to 165 “You are tall”, else “You are short”

Ulanyjydan boýunuň uzynlygyny soramaly. Eger-de boýunyň uzynlygy 165-a deň ýa-da uly bolsa, “Siz uzyn boýly”,eger-de 165-den kiçi bolsa “Siz kiçi boýly” diýip ýazmaly.

1. Get from user a number. If the number is higher than 50, then add 1 to that number, else minus 2 from that number. Output the gotten number.

Ulanyjydan bir san almaly. Eger ol 50-den uly bolsa onda ol sana 1-i goşmaly. Galan ýagdaýda ol sandan 2-ni aýyrmaly. Emele gelen sany çapa çykarmaly.

1. By user given a number. If the number is positive then the program outputs: “The number is positive”. But if the number is negative then the program outputs: “The number is negative”.

Ulanyjydan bir san almaly. Eger ol san položitel bolsa, onda “Položitel san”, otrisatel bolsa, “Otrisatel san” diýip ýazmaly.

1. Ulanyjydan bir san almaly we alnan sanyň köküni hasaplamaly. Emma otrisatel sandan kök alyp bolmaýandygyny göz öňünde tutmaly.
2. Ulanyjydan 2 san alyp olaryň bölmek hasylyny ýerine ýetirýän programma ýazmaly (birinji san / ikinji san). Eger-de ikinji san 0(nol)-a deň bolsa, onda ulanyja sany 0(nol)-a bölüp bolmaýanlygyny aýtmaly(san/0 bolmaýar).
3. By user given two numbers. And the program outputs the smallest one (do not use min function).

Özara deň bolmadyk iki san berlen. Olaryň kiçisini çapa çykarmaly (max, min funksiýalaryny ulanmaly däl).

1. Given two real numbers, output the larger value and then the smaller value of them (do not use max, min functions).

Özara deň bolmadyk iki san berlen. Ilki olaryň ulusyny, soňra bolsa kiçisini çapa çykarmaly. (max, min funksiýalaryny ulanmaly däl)

1. Write a python program that asks a (student) name and grades for SIW, Midterm and Final exams from a user and calculates the average of grades (SIW-25%, Midterm-30%, Final-45%). If the average and final exam grade is higher than 50 or equal to 50 output: “You have passed”, if the average and final exam grade is less than 50 then output “You have failed”.

Talybyň adyny we synag bahalaryny(SIW, Midterm, Final) almaly we ortaça bahany hasaplamaly (SIW-25%, Midterm-30%, Final-45%) Eger-de ortaça baha we Final baha 50-ä deň ýa-da uly bolsa, onda “Siz synagdan geçdiňiz”, eger-de 50-den pes bolsa, onda “Siz synagdan geçmediňiz” diýip ýazmaly.

1. By user given a number. If the number is even then the program outputs: “The number is even”. But if the number is odd then the program outputs: “The number is odd”.

Ulanyjydan bir san almaly. Eger ol san jübüt bolsa, “Jübüt san”, täk bolsa, “Täk san” diýip ýazmaly.

1. Get from user a number. If the number is even, then add 1 to that number, else minus 2 from that number. Output the gotten number.

Ulanyjydan bir san almaly. Eger ol jübüt bolsa onda ol sana 1-i goşmaly, galan ýagdaýda ol sandan 2-ni aýyrmaly. Emele gelen sany çap etmeli.

1. Ulanyjydan bir san almaly. Eger-de alnan san položitel bolsa ol sany 2 esse artdyrmaly, otrisatel bolsa,ol sany 2-nji derejä götermeli. Netijäni çap etmeli.
2. Ulanyjydan açar sözüni almaly. Eger-de açar sözüň karakter sany 8-e deň ýa-da uly bolsa, açar sözi kabul etmeli, galan ýagdaýda kabul etmeli däl.
3. Get the exam grades from user. If the exam grade is between 100-85 output “5”, if the exam grade is between 84-70 output “4”, if the exam grade is between 69-50 output “3”, if it less than 50 then output “2”.

Ulanyjydan synag bahasyny almaly. Eger-de synag bahasy, 100-85 aralygynda bolsa “5-lik”, 84-70 aralygynda bolsa “4-lik”, 69-50 aralygynda bolsa “3-lik”, 50-den pes bolsa “2-lik” diýip ýazmaly.

1. Ulanyjy sistema girip bilmek üçin, sistema tarapyndan goýlan ulanyjy adyny we açar sözüni bilmeli. Eger-de ulanyjy ady we açar sözi dogry girilende “Siz sistema girdiňiz”, ulanyjy ady dogry açar sözi nädogry girilende, “Siz açar sözüni nädogry girdiňiz”, ulanyjy ady nädogry, açar sözi dogry girilende, “Siz ulanyjy adyny nädogry girdiňiz”, ulanyjy ady we açar sözi nädogry girilende, “Siz gaýtadan synanşyň” diýip ýazmaly.
2. Ulanyjydan “Nahar iýmek isleýäňizmi” diýip soralanda, ulanyjy “hawa” jogabyny berse, onda ulanyjydan näçe manat pulunuň bardygyny soramaly. Eger-de ulanyjynyň puly 30-manata deň ýa-da 30-manatdan geçýän bolsa, “Siz naharlanyp bilersiňiz”,eger-de 30-manatdan az bolsa “Siziň puluňyz ýetmeýär” diýip ýazmaly. “ýok” jogabyny beren ýagdaýynda “Sag boluň” diýip ýazmaly.
3. Goşmak, Aýyrmak, Köpeltmek we Bölmek işlerini ýerine ýetirýän programma ýazmaly. Ulanyjydan iki san almaly we aşakdaky menýuny çykarmaly. Ondan soň, ulanyjydan haýsy işi ýerine ýetirmek isleýändigini soramaly. Eger-de 1 girizilse Goşmak, 2 girizilse Aýyrmak, 3 girizilse – Köpeltmek, 4 girizilse – Bölmek işlerini ýerine ýetirmeli.

1 - Goşmak

2 - Aýyrmak

3 - Köpeltmek

4 – Bölmek

1. Given an integer, output its description string as: positive even number, positive odd number, negative even number, negative odd number and zero number.

Bitin san berlen. Bu sany beýan edýän degişli «položitel jübüt san», «položitel täk san», «otrisatel jübüt san», «otrisatel täk san» we «nol san» ýazgyny çapa çykarmaly.

1. Given three real numbers, output the minimal value and then the maximal value (do not use max, min functions).

Üç san berlen. Ilki olaryň iň kiçisini, soňra bolsa olaryň iň ulusyny çapa çykarmaly (max, min funksiýalaryny ulanmaly däl).

**while statements (loop)**

1. Print the numbers from 1 to 10 (use while loop).
   1. aralygyndaky sanlary çapa çykarmaly.
2. Print the numbers from 10 to 1 (use while loop).
   1. aralygyndaky sanlary çapa çykarmaly.
3. Print the “Introduction to Programming” 10 times(use while loop).

“Introduction to Programming” sözüni 10 gezek çapa çykarmaly.

1. Print your name 10 name times (use while loop).

Öz adyňyzy 10 gezek çapa çykarmaly.

1. Output the even numbers from 1 to 100 (use while loop).

1-100 aralygyndaky jübüt sanlary ýazmaly.

1. Output the odd numbers from 1 to 100 (use while loop).

1-100 aralygyndaky täk sanlary ýazmaly.

1. Output the even numbers from 100 to 1 (use while loop).
   1. aralygyndaky jübüt sanlary ýazmaly.
2. Output the odd numbers from 100 to 1 (use while loop).
   1. aralygyndaky täk sanlary ýazmaly.
3. Find the square of numbers from 20 to 30 (use while loop).

20-30 aralygyndaky sanlaryň kwadratlaryny hasaplamaly.

1. Find the sum of numbers from 1 to 10 (1+2+3+...+9+10) (use while loop).

1-10 aralygyndaky sanlaryň jemini tapmaly (1+2+3+...+9+10).

1. Find the multiplication of numbers from 1 to 10 (1\*2\*3\*...\*9\*10) (use while loop).

1-10 aralygyndaky sanlaryň köpeltmek hasylyny tapmaly (1\*2\*3\*...\*9\*10).

1. 10 integers are given. Find the amount of positive and amount of negative  
   integers in the input data (use while loop).

Ulanyjydan 10 sany san almaly we olaryň näçesiniň položitel näçesiniň otrisatel bolýandygyny hasaplamaly.

1. Input 10 numbers and output the sum of positive numbers and the sum of negative numbers separately (use while loop).

Ulanyjydan 10 san almaly. Položitel sanlaryň jemini we otrisatel sanlaryň jemini aýry aýry hasaplamaly.

1. Calculate the squares of all inputted numbers until the user inputs q(quit)(use while loop).

Ulanyjy q(quit) harpyny girizýänçä her bir girizilen sanyň kwadratyny hasaplamaly.

1. Calculate the average of all inputted numbers until the user inputs q(quit)(use while loop).

Ulanyjy q(quit) harpyny girizýänçä san almaly we olaryň ortaça bahasyny hasaplamaly.

1. Ulanyjy q(quit) harpyny girizýänçä san almaly we ol sanlaryň iň ulysyny tapmaly.
2. Ulanyjy q(quit) harpyny girizýänçä san almaly we ol sanlaryň iň kiçisini tapmaly.

**While True:**

**print (“Good Luck ☺”)**