



**“TOSHKENT IRRIGATSIYA VA QISHLOQ XO’JALIGINI
MEXANIZATSIYALASH MUHANDISLARI INSTITUTI”
MILLIY TADQIQOT UNIVERSITETI**



**“GIDROMELIORATIV TIZIMLARDAN FOYDALANISH”
Kafedrası**

Fan: Resurs tejamkor sug’orish texnologiyalar

Mavzu: Tomchilatib sug’orish tizimini loyihalash.
(amaliyot)

O’qituvchi:

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Toshkent 2023



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Fanning maqsadi va vazifasi

Fanning maqsadi: Suv va qishloq xo'jaligida foydalanilayotgan resurslarni maksimal tejagan holda yuqori samaradorlikka erishish.

Maqsadi: Qishloq xo'jaligi ekinlarini sug'orishda suv tekamkor texnologiyalarini loyihalash va undan foydalanish.

Vazifasi: Sug'orish uchun mo'ljallangan suvni kerakli hajmda, kerakli muddatlarda sug'orish manбайдan olib, sug'orish tizimlari yordamida ekin dalalariga yetkazib berishni loyihalashtirishdan iborat.



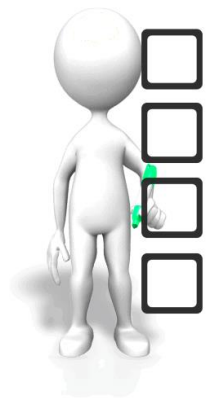
AGRO
BOSS



10 000 000 so'm +

<https://uz.linkedin.com/jobs/engineering-jobs-tashkent?countryRedirected=1¤tJobId=3678005692&position=8&pageNum=0>

Tavsiya etuvchi belgilar



Reja



Yozib olish



Ko'rib chiqish



Savollar



Yechim

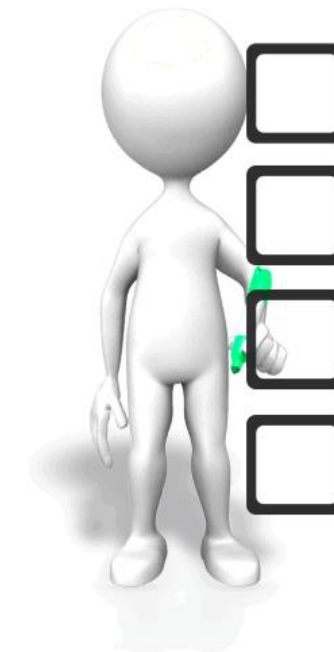


dasturlar

DARS SO'NGIGA QADAR BIZ QUIDAGILARNI O'RGANAMIZ:

Dars so'ngiga qadar biz quidagilarni o'rganamiz:

- Tomchilatib sug'orish tizimining qisimlari
- Tomchilatib sug'orish lentalarini loyihalash
- Tarqatuvchi quvurlarni loyihalash
- Magistral quvurlarni loyihalash
- Sug'orish meyoriga mos nasos, filtr va hovus tanlash





**NEGA BU FAN BIZGA
KERAK ???**

Fanning maqsadi va vazifasi



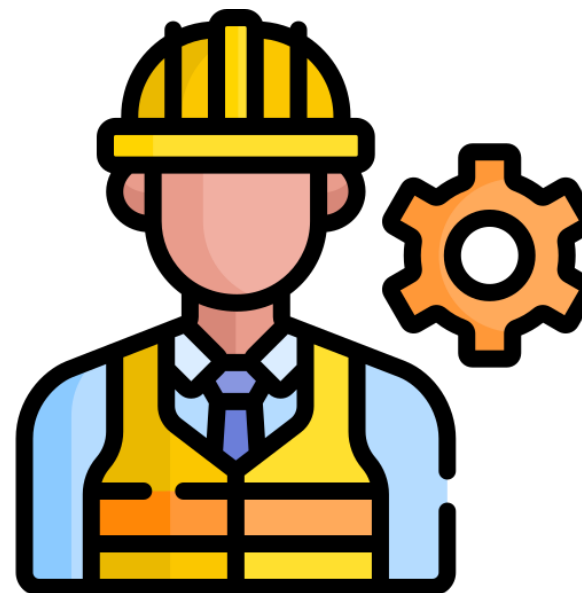
Moddiy manfaat



Fanni o'zlashtirish

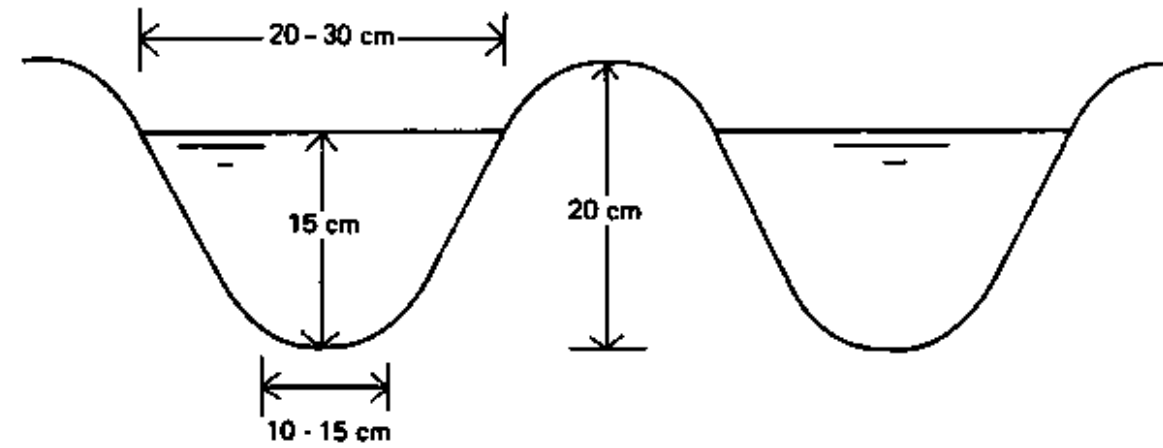


Oilaviy baxt



Yaxshi mutaxassis

Egatlab sug'orish



Pulsar sug'orish tizimi

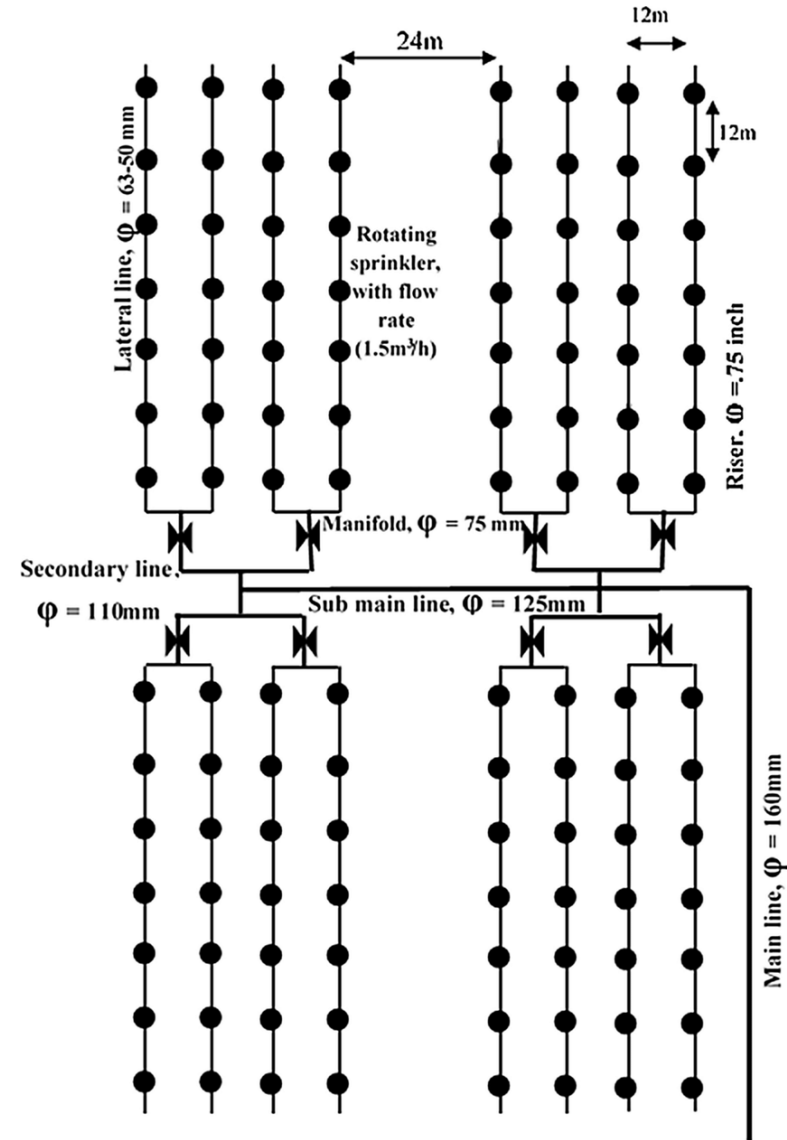


20 %

Yomg'irlatib sug'orish tizimi



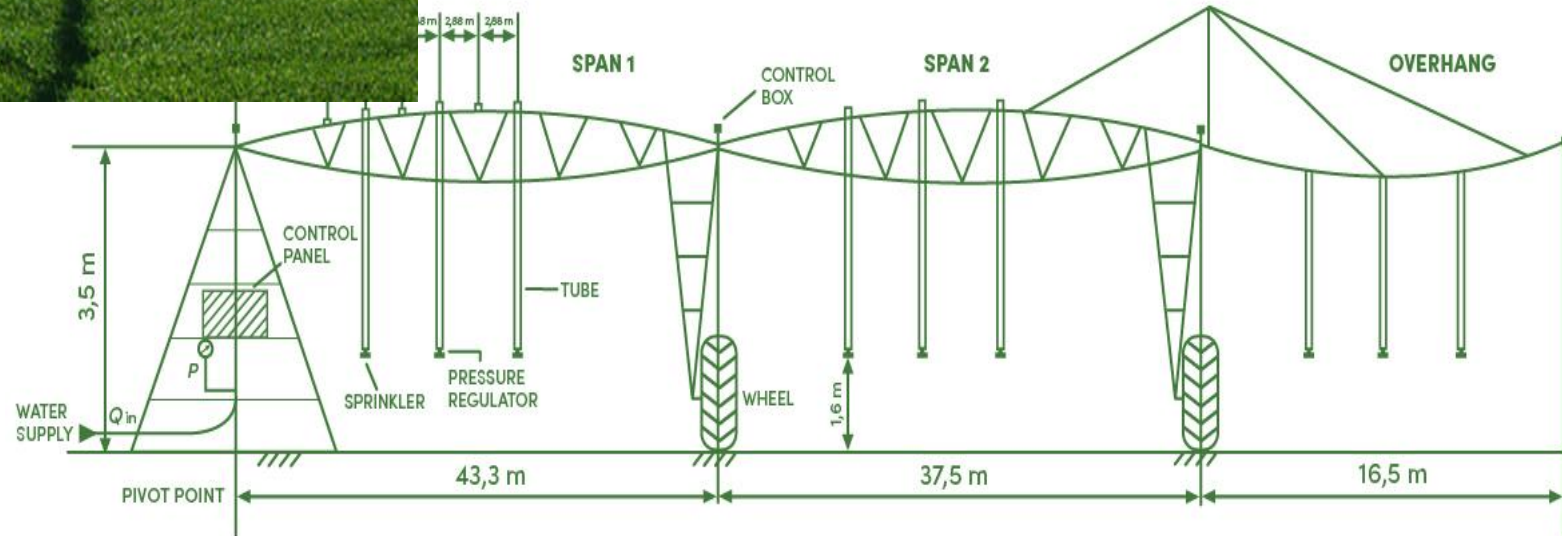
35 %



Markaziy sug'orish tizimi



40 %



Tomchilatib sug'orish tizimi



60 %





2

1

Quvur diametrlarini
noto'g'ri tanlash

2

Nasos stansiyalarni noto'g'i

3

Filtr satansiya

4

Sug'orish meyori



3

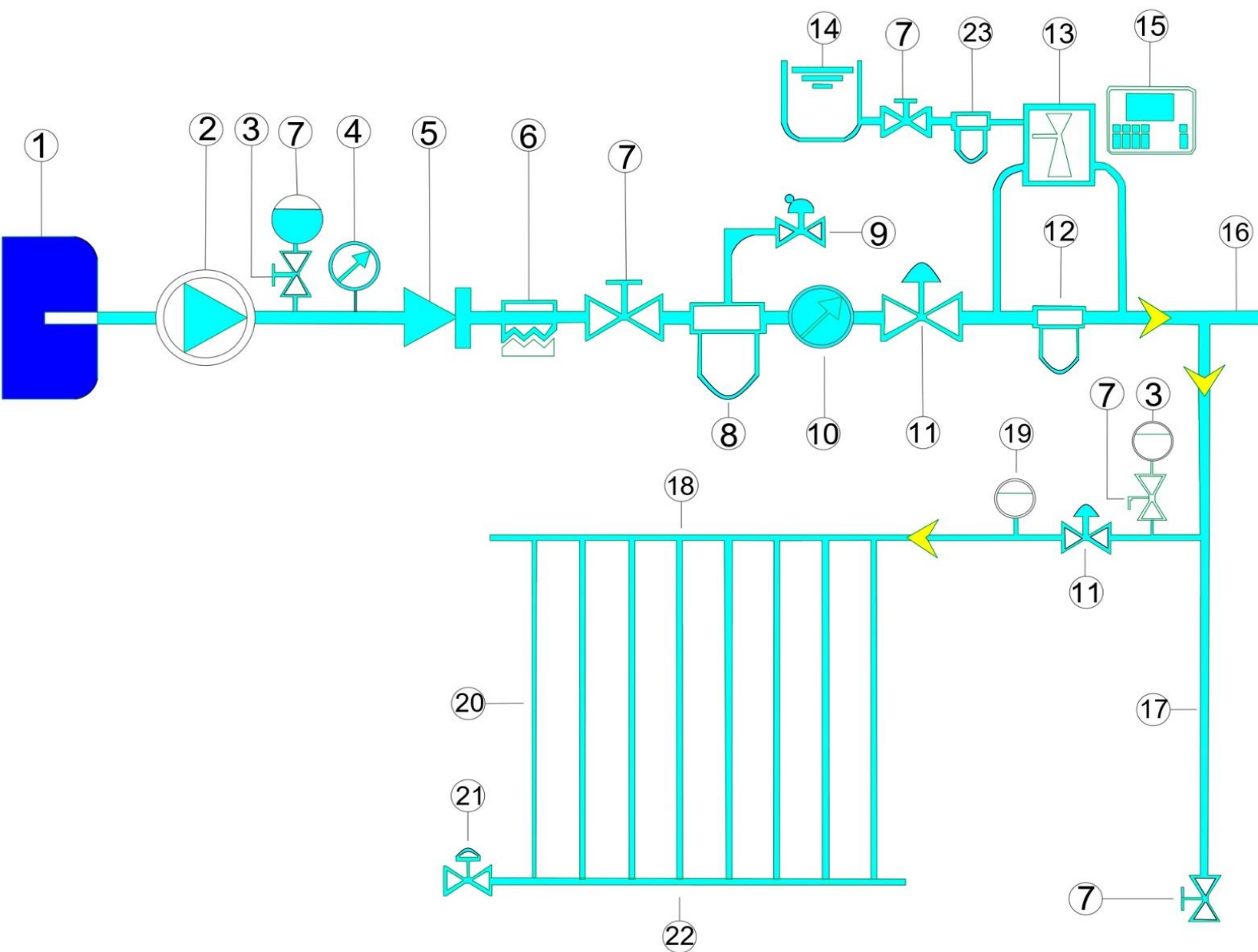


1



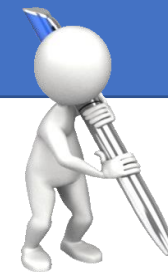
4

Tomchilatib sug'orish tizimining sxema va vazifalari



1. Suv rezurvari
2. Nasos stansiya
3. Havo chiqargiz
4. Bosimni boshqarish qurilmasi
5. Manometr
6. Zatvor
7. Asosiy zatvor
8. Asosiy filtr
9. Fitr drenaj tozalash qismi
10. Suv sarfini hisoblagich
11. Havo chiqargich
12. qumli filtr
13. O'g'it ulagich
14. O'gitlash bosimli bochkasi
15. Sug'orish kontrolleri
16. Magistral quvur
17. Tarqatuchi quvur
18. Ichki tarqatuvchi quvur
19. Vakum holatini so'ndirgich
20. Tomchilatib sug'orish lentasi
21. Gidrants
22. Tarqatuvchi quvurlar uchun gidrant
23. O'g'it filtri

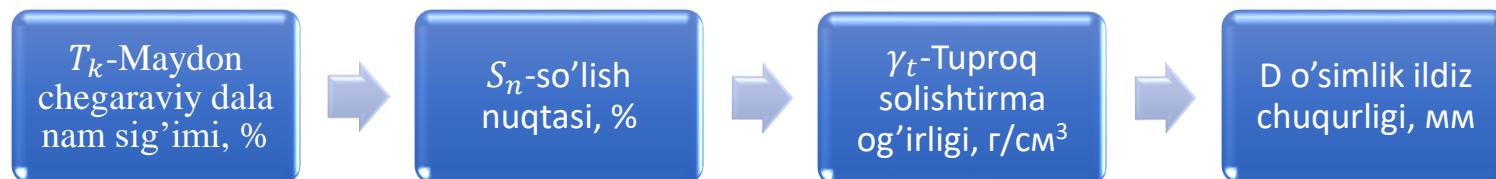
Tomchilatib sug'orish lentalarini loyihalash



1-rasm. Tomchilatib sug'orish lenta sxemasi

1

$$d = \frac{(T_k - S_n)}{100\%} * \gamma_t * D \quad (\text{tuproqning suv ushlab turish qobiliyati, 1-formula})$$



2

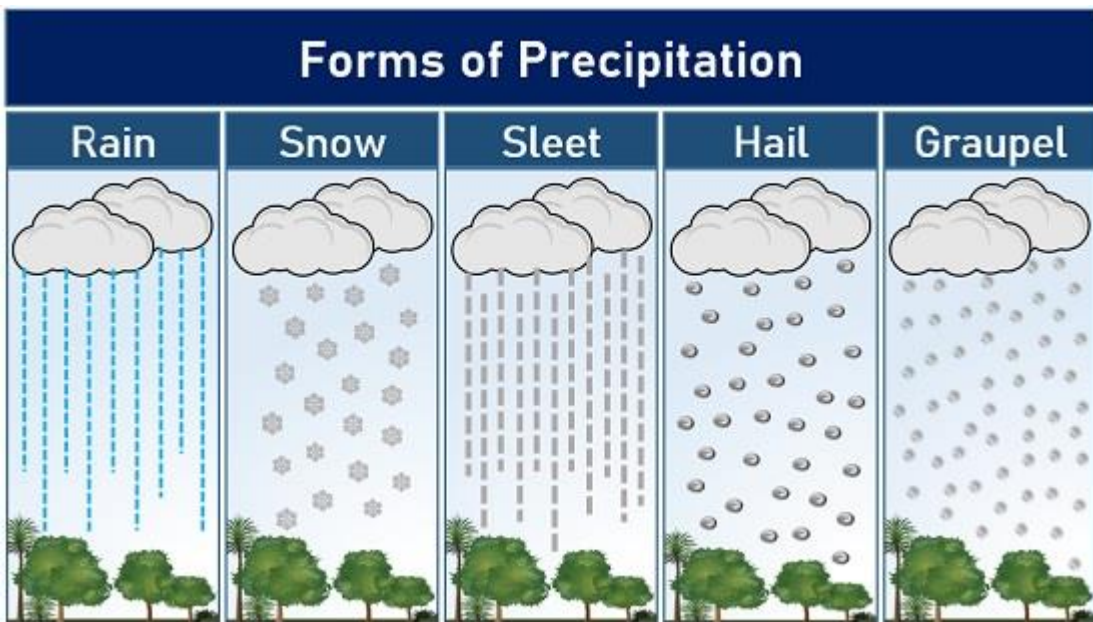
$$S_d = 0.9 * \sqrt{\frac{Q}{I}} \quad (\text{emitter oralig'ini aniqlash, 2-formula})$$

Q-emitterning suv sarfi l/s

I-infiltratsiya tezligi mm/soat

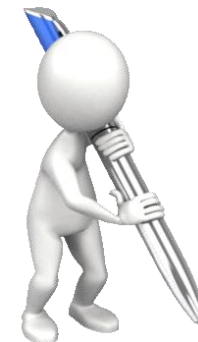
№	Tuproq turi	Infiltratsiya tezligi, MM/COAT	O'rtacha infiltratsiya tezligi, MM/COAT
1	Qumli tuproq	25-250	50
2	Yengil qumoq	13-76	25
3	O'rta qumoq	8-20	13
4	Og'ir qumoq	2.5-15	8
5	Gilli tuproq	0.3-5	2.5

Tomchilatib sug'orish lentalarini loyihalash



3

$$P = k * S_d / S_e \text{ maydon koeffitsienti}$$



k - Ekin ildiz koeffitsient 1 ga teng



S_d -emitter oraliq'i, (yuqorida topilgan)



S_e -tomchilatib sug'orish lentasi

No	Yog'ingarchilik miqdori, mm	P
1	0<360	0.35
2	360<750	0.3
3	750<	0.25

Tomchilatib sug'orish lentalarini loyihalash

Таблицы Шевелева



для пластмассовых труб (ГОСТ 18599-2001)

Диаметр трубы, мм

Наружный диаметр dn= мм

Внутренний диаметр dv= мм

ГОСТ 18599-2001

не по ГОСТу

Полиэтилен

ПЭ32 (MRS3,2)

ПЭ63 (MRS6,3)

ПЭ80 (MRS8,0)

ПЭ100 (MRS10,0)

Серия труб

SDR41 (S20)

SDR26 (S12,5)

SDR21 (S10)

SDR17,6 (S8,3)

SDR17 (S8)

SDR13,6 (S6,3)

SDR11 (S5)

SDR9 (S4)

SDR6 (S2,5)

Q	dp= 160	
<input type="radio"/> л/сек	γ	1000i
<input checked="" type="radio"/> м куб/ч		
<input type="text" value="80"/>	1,105	7,736

При расходе 22,22222222 л/сек = 80 м куб/ч рекомендуется использовать трубу диаметром 200 мм

Потери напора по длине, м

L= м

$h = i \cdot L = 1,547$ м

Tezkor bliss savollari



1. _____
2. _____
3. _____
4. _____
5. _____



1. _____
2. _____
3. _____
4. _____
5. _____



AUTOCAD

1. _____
2. _____
3. _____
4. _____
5. _____

Quvurlarda napor yo'qolishi

I Magistral



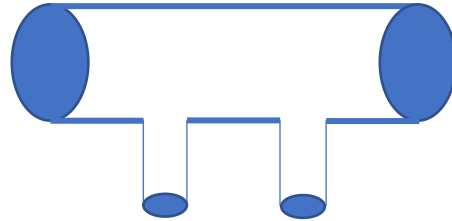
4

$$h_l = \frac{\lambda \cdot l}{d} \cdot \frac{v^2}{2g}$$

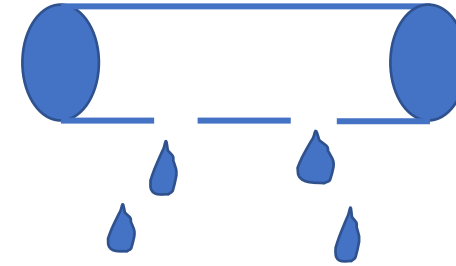
Darsi Veysbah

h_l = napor yo'qolishi (m);
 L = uzunlik (m),
 λ = gidravlik ishqalanish koeffitsienti,
 V = oqim tezligi (m/s),
 g = erkin tushish tezlanishi (9.81 m/c²)
 d = ichki diametr (m).

II tarqatuvchi



III tomchilatib sug'orish lentas



$$h_l = \frac{10,67}{C^{1,852}} \cdot \frac{Q^{1,852}}{d^{4,8704}} \cdot L;$$

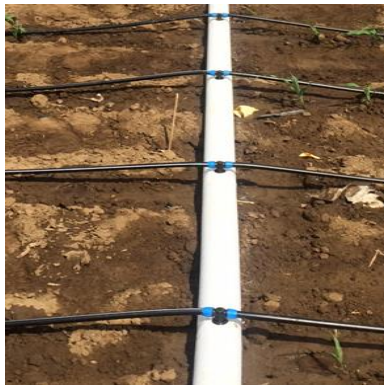
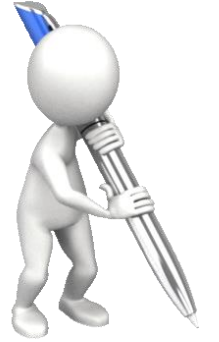
Xazan Villiams

h_l = napor yo'qolishi (m);
 L = masofa (m),
 d = ichki diametr (m).
 Q = suv sarfi (m³/c)
 C = shezi koeffitsienti

Nasos tanlash

5

$$H(\text{nasos}) = h(\text{lateral}) + h(\text{manifold}) + h(\text{magistral}) + h(\text{filtr})$$



Mustahkamlash uchun amaliy masala



Ma'lum bir hududda 4 gektar paxta ekilishi uchun mo'jallangan maydon mavjud, paxta dalasiga to'liq tomchilatib sug'orish tizimini loyihalash lozim. Mavjud maydon uchun tomchilatib sug'orish lentasi oraliqlarini aniqlash $S(l)$ va nasos uchun kerakli bosimni topish $H(\text{nasos})$ lozim.

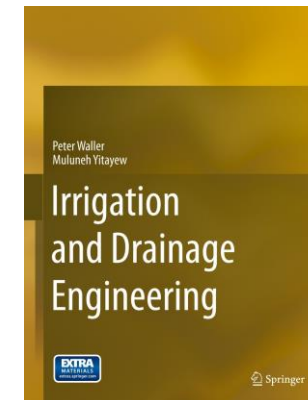
S_l - ???

$H(\text{nasos})$ - ???

Maydon	4 gektar
Magistral quvur	160 mm (300 m)
Tarqatuvchi quvur	110 mm (250 m)
Tomchilatib sug'orish lentasi	1,6 l/soat (120 m)
Tuproq turi (o'rta qumoq) infiltratsiya tezligi	8 mm/soat
Tk maydon chegaraviy dala nam sig'imi	33,9%
Sn so'lish nuqtasi	18,99%
Yt Tuproq solishtirma og'irligi	1.28 gr/sm ³

Qo'shimcha topshiriqlar

1. Shevelyov dasturini o'rnatish
2. Irrigation and drainage kitobidaning 40-48 betlarini o'qib o'rganish
3. <https://hemis.tiame.uz/> web saytidagi misollarni ishlash
4. O'tilgan darslarni takrorlash



Qo'shimcha topshiriqlar

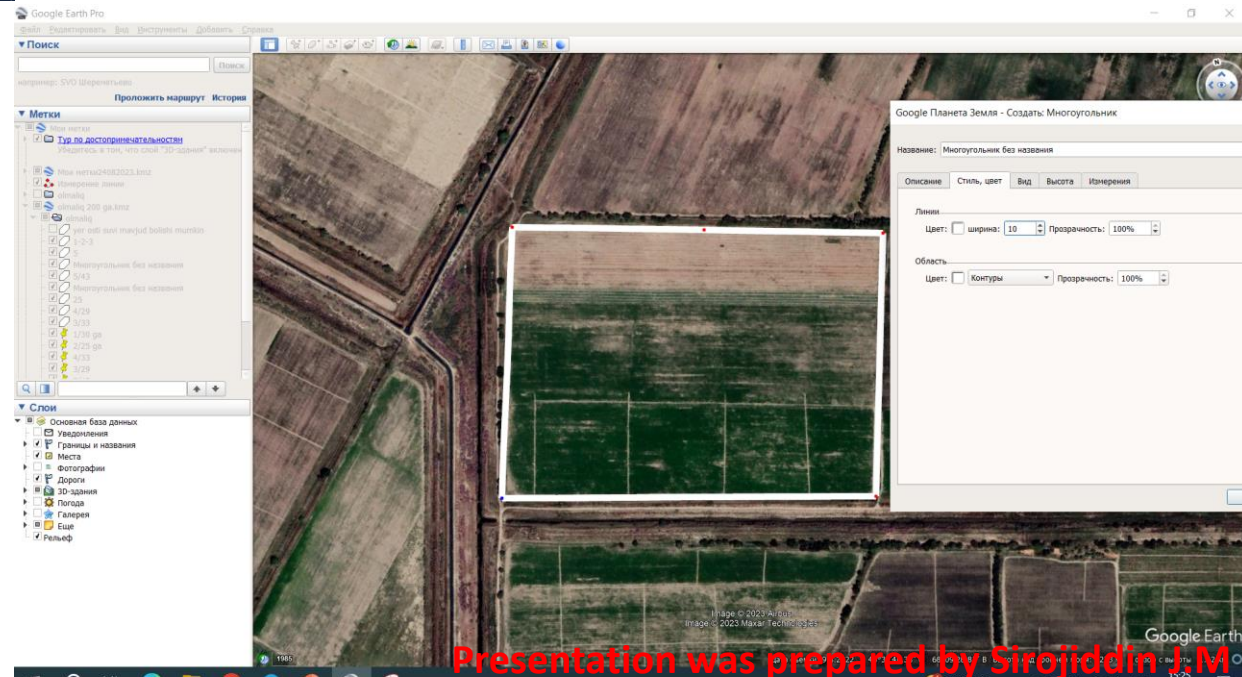
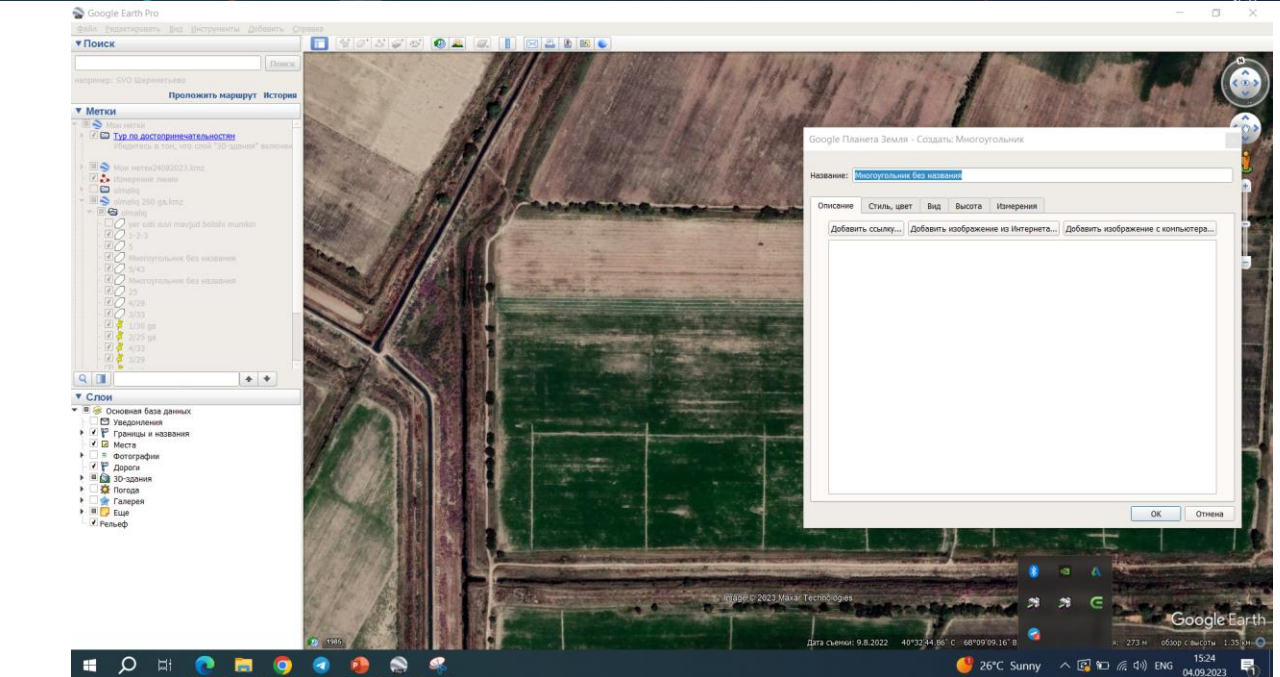
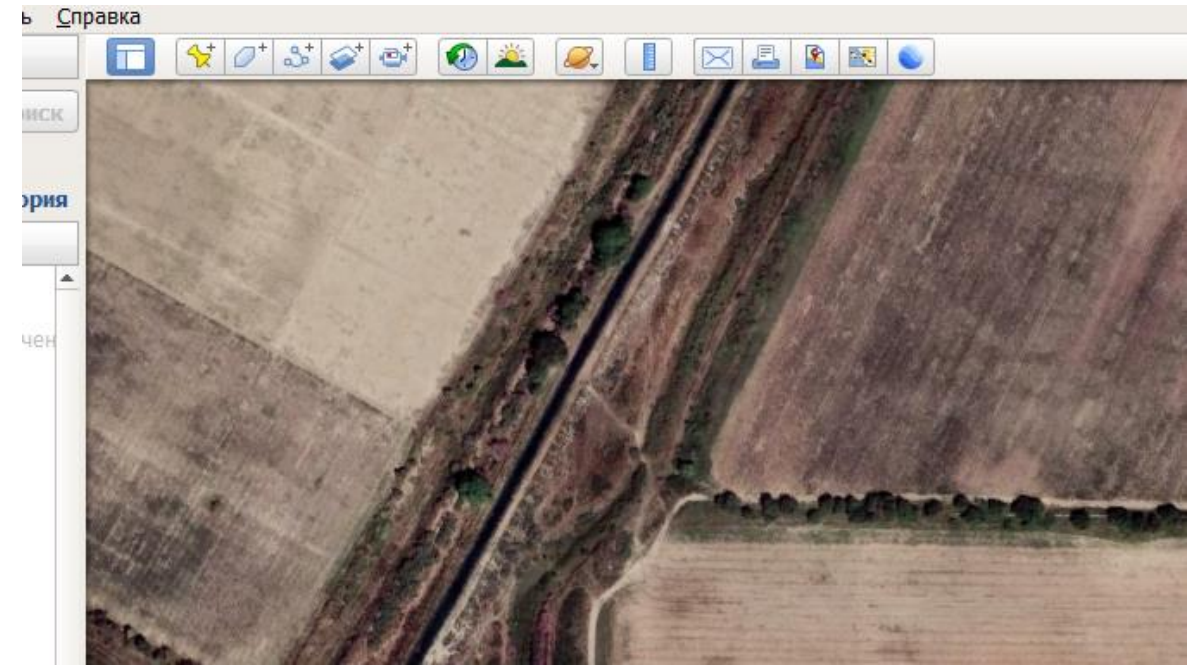
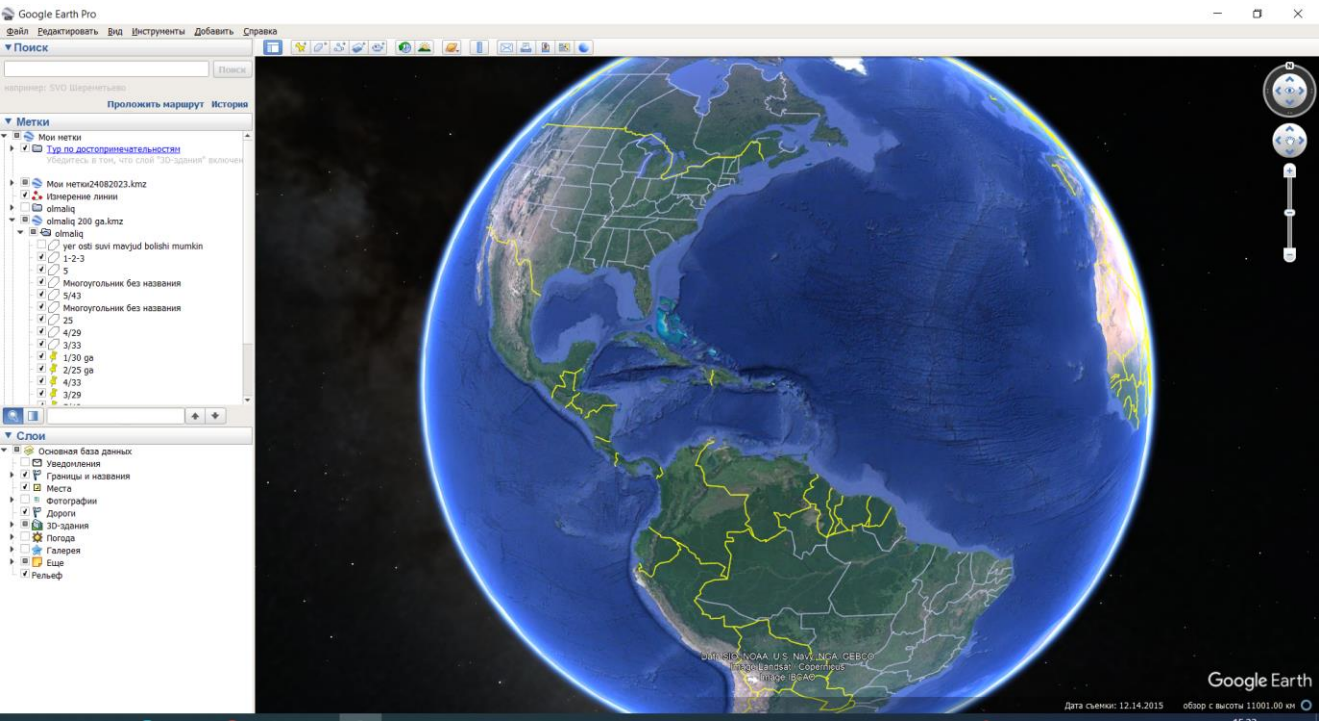
1. Google earth – dasturini yuklab olish va o'rnatish

1/1 Google earth dasturi yordamida maydonlarning chetki qismlarini belgilash

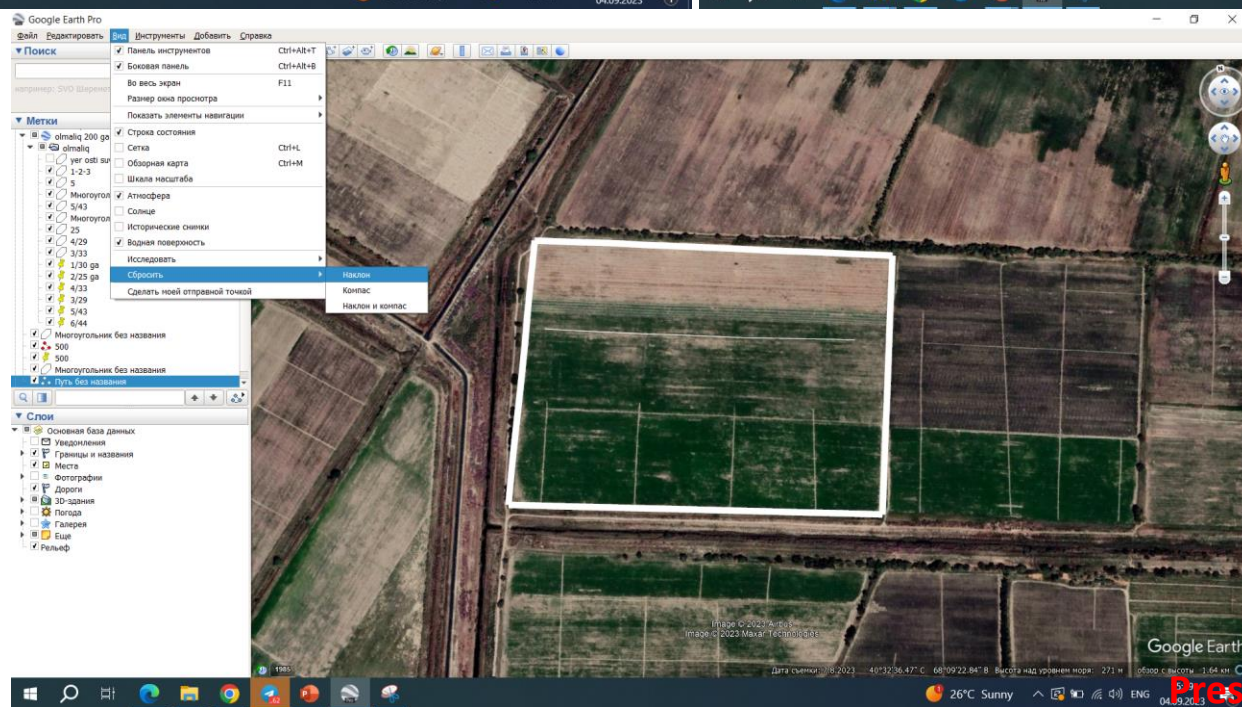
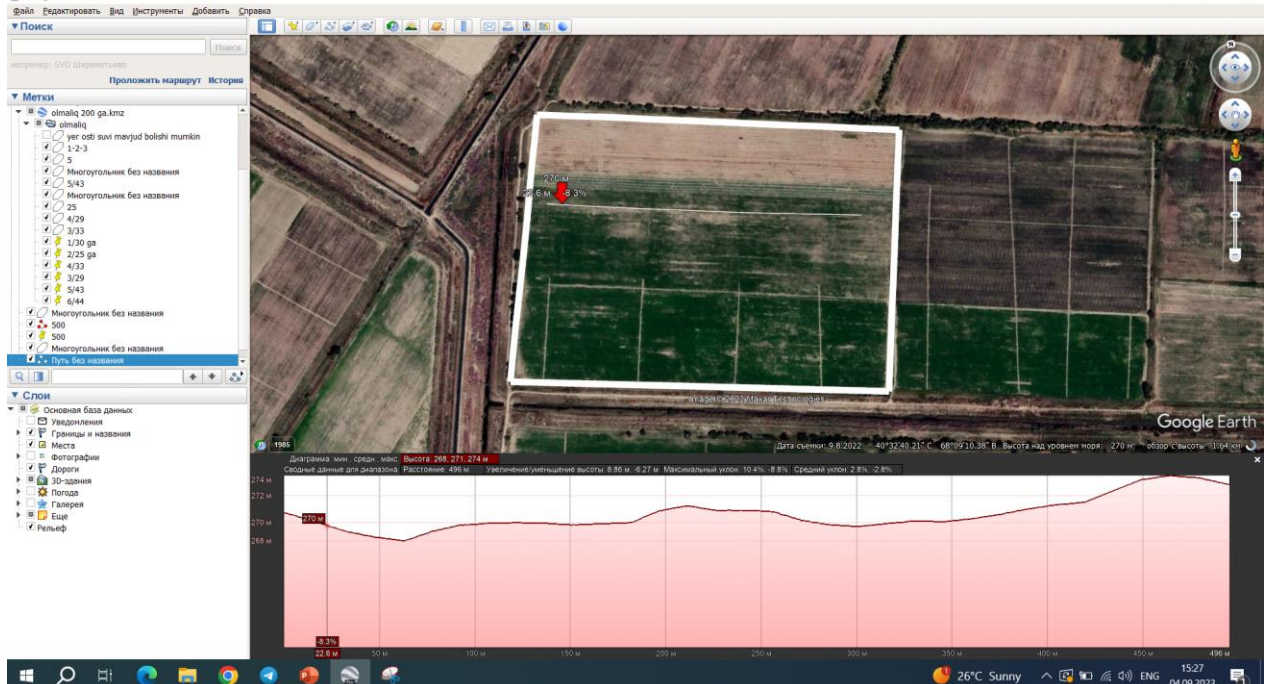
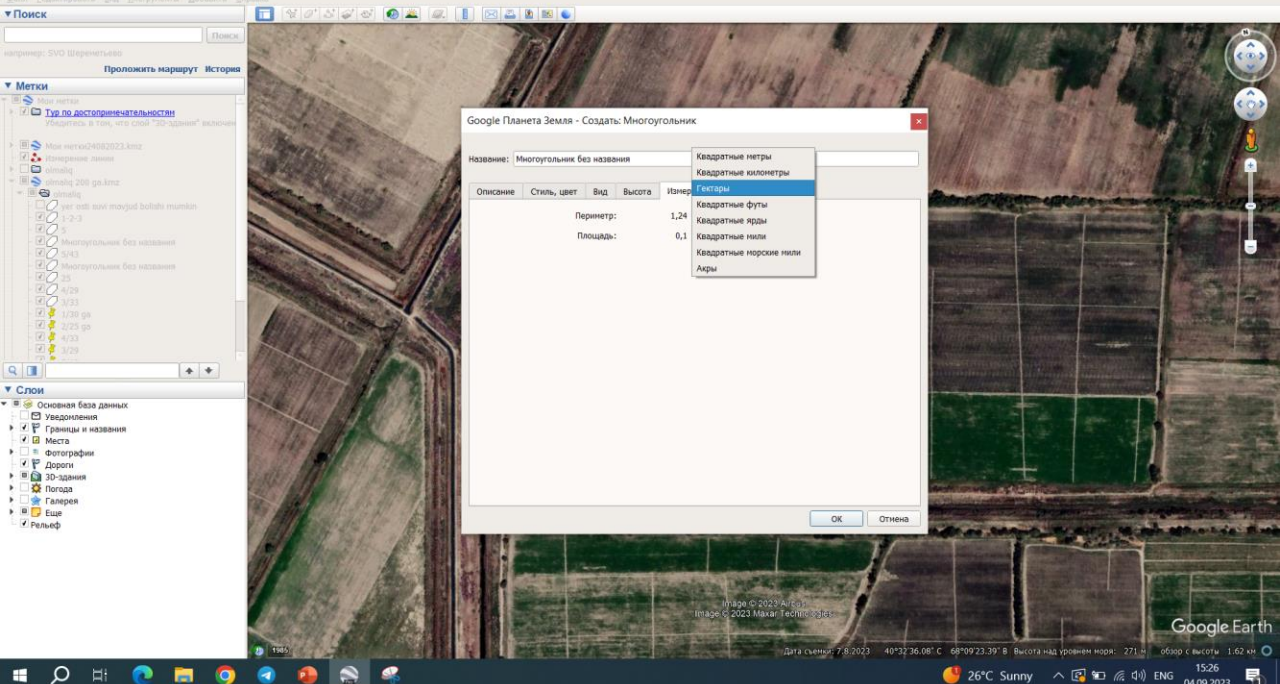
1/2 Google earth dasturi yordamida masofalarni o'lchash

1/3 Google earth dasturi yordamida maydon kengligini o'lchas

<https://google-earth-pro.softonic.ru/>

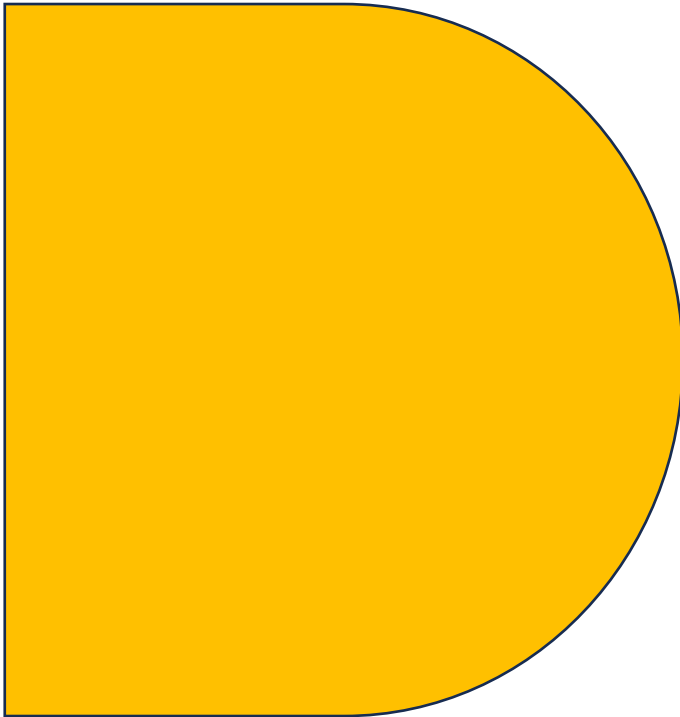


Presentation was prepared by Sirojiddin J M

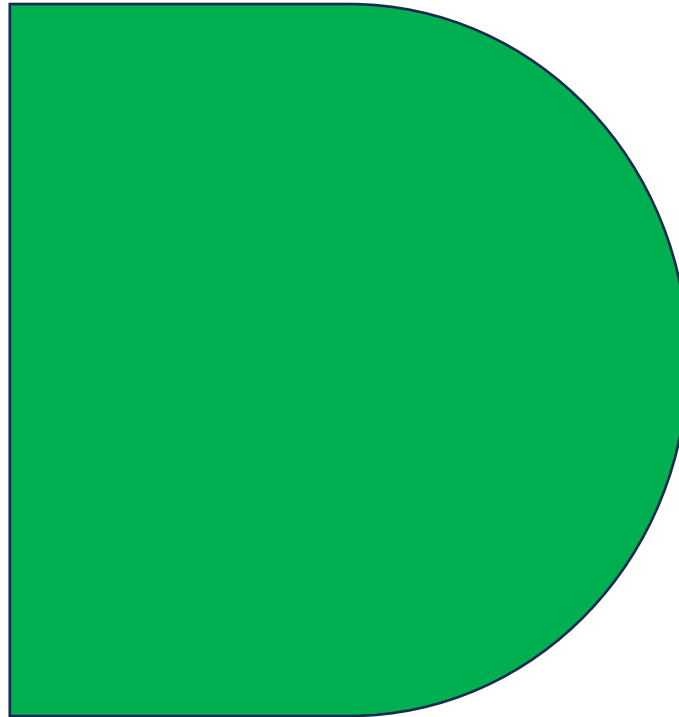


BBB

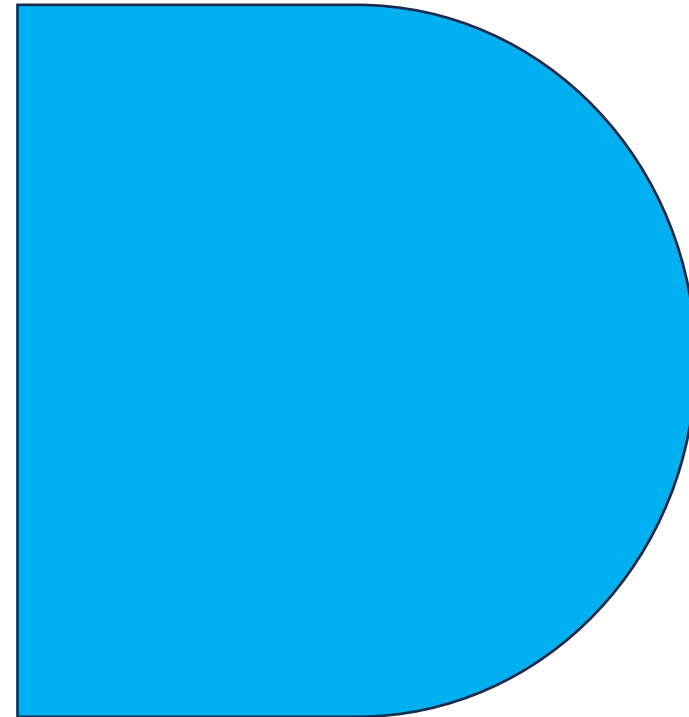
Bilardim



Bilib oldim



Bilmoqchiman



Biznesingizni boshlang



Foydalanilgan adabiyotlar va dasturiy ta`minotlar

Scan for Info

Scan

