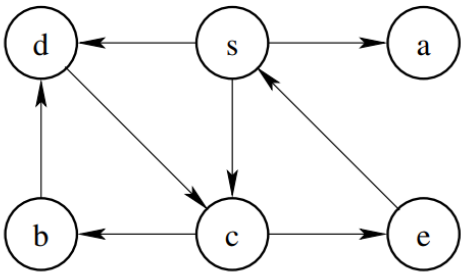
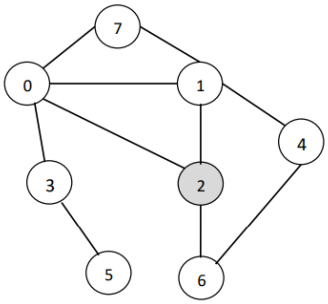
Mustaqil ishlash uchun masalalar

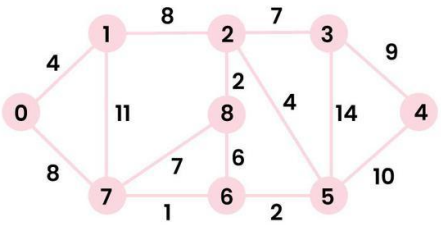
1. Berilgan graf uchun BFS va DFS algoritmlarining ketma-ketligi qanday ?.Algoritm s tugunidan boshlanadi?



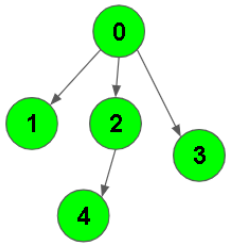
2. Berilgan graf uchun agar boshlang'ish tugun 2 dan boshlangan holatda BFS va DFS algoritmlarini qo'llang .



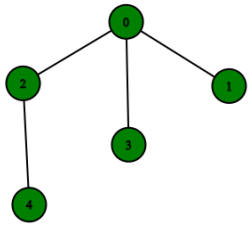
3. Dijkstra algoritmi yordamida berilgan graf uchun 0 va 4 chi tugunlar orasidagi eng qisqa masofani toping.



4. Yo'naltirilgan grafik berilgan. Vazifa 0 dan boshlab ushbu grafikning kengligi BFS bo'yicha birinchi o'tishni bajarishdir. *V = 5, E = 4 adj = {{1,2,3},{},{4},{},{}}*

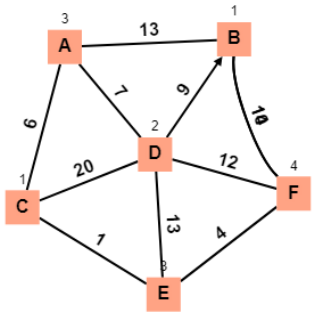


5. Sizga ulangan yo‘naltirilmagan graf berilgan. Grafda DFS algoritmini bajaring.Eslatma: grafka muvofiq 0-tepalikdan chapdan o‘ngga boshlanadigan grafning DFS o‘tishini topish uchun rekursiv yondashuvdan foydalaning.

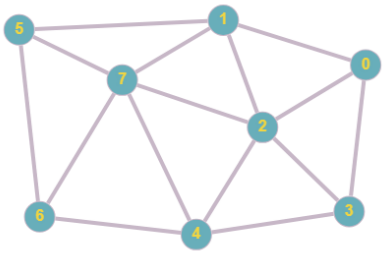


1. 4,4,3,2,2,1,1 grafmi? Agar yo‘q bo‘lsa, sababini tushuntiring; agar shunday bo‘lsa, ushbu daraja ketma-ketligi bilan oddiy grafni chizing.
2. 0, 1, 1, 0,
   1, 0, 1, 1,
   0, 1, 0, 0,
   0, 1, 1, 0,
   Berilgan qo‘shnilik matritsasidan foydalaning va yo‘naltirlgan graf chizing.
3. 0, 1, 1, 0, 1,
   1, 0, 1, 1, 0,
   0, 1, 0, 0, 1,
   0, 1, 1, 0, 0,
   0, 0, 0, 0, 1,
   Berilgan qo‘shnilik matritsasidan foydalaning va yo‘naltirlgan graf chizing.

4. Berilgan grafda C va B tugunlari orasidagi enq qisqa yo‘lni toping.



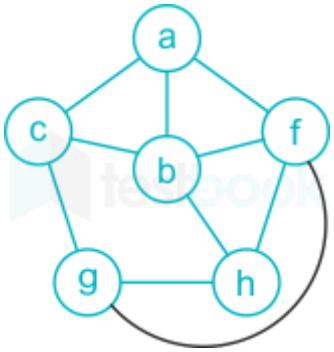
5. Berilgan grafda 5 va 3 tugunlari orasidagi enq qisqa yo‘lni toping.



Mavzu yuzasidan testlar:

1. Graftda BFS qidirish algoritimi uchun qaysi ma’lumotlar tuzilmasidan foydalaniladi.
   a) Massiv (array)
   b) Bog’langan ro‘yxat (Linked list)
   c) Navbat (Queue)*
   d) Stek (Stack)
2. Graftda BFS qidirish algoritimi uchun qaysi ma’lumotlar tuzilmasidan foydalaniladi.
   a) Massiv (array)
   b) Bog’langan ro‘yxat (Linked list)
   c) Navbat (Queue)
   d) Stek (Stack)*

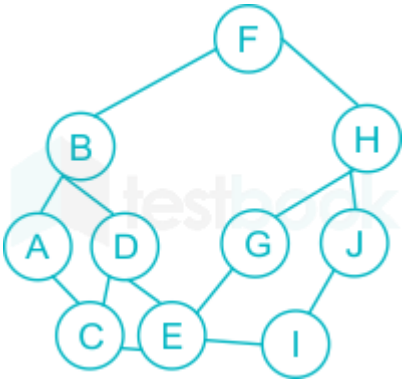
3. Berilgan Graf uchun; quyidagi ketma-ketliklar qaysilarida DFS algoritimlari berilgan



1) Abcghf
2) Abfchg
3) Abfhgc
4) Afhgcb

a) 1,2 va 4
b) 1,2,3 va 4
c) 2,3 va 4
d) 1,3 va 4*

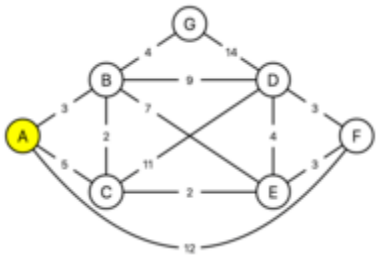
4. Berilgan Graf uchun; quyidagi ketma-ketliklar qaysilarida DFS algoritimlari berilgan



a) A, D, G, J, C, E, I, F, B, H
b) F, B, G, J, C, H, A, D, E, I
c) F, B, H, A, D, G, J, C, E, I*

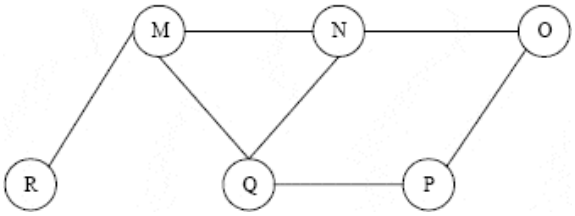
d) F, B, J, C, E, I, H, A, D, G

5. A tugunidan f tugunigacha bo‘lgan eng qisqa yo‘l qanday?



a) A - > B - > D - > F
b) A -> C -> B -> E -> F
c) A -> F
d) A -> C -> E -> F*

6. BFS qidiruv algoritmi navbat ma’lumotlari tuzilishi yordamida amalga oshirildi. Quyidagi grafitugunlariga tashrif buyurishning mumkin bo‘lgan ketma-ketlikni ko‘rsatib bering.



a) MNOPQR
b) QMNPRO*
c) NQMPOR
d) QMNPOR

7. Graf bu _____to‘plami ?
   a) Qator va ustunlar
   b) tugunlar va qirralar*
   c) Tenglamalari
   d) Ma’lumotlar

8. Quyidagilardan qaysi biri BFS algoritmi emas?

a) ikki tugun orasidagi eng qisqa yo‘lni topish
b) grafning ikki tomonlamaligini topish
c) GPS navigatsiya tizimi
d) yo‘lni qidirish*

9. Navbat (Queue) tuzilmasi _____ uchun ishlatiladi
   a) DFS algoritmi
   b) BFS algoritmi*
   c) Rekursiya
   d) Dijkstra algoritmi
10. DFS graf qidiruv algoritmi _____ ma’lumotlar tuzilmasidan foydalanadi.
   a) Stek*
   b) Navbat
   c) Rekursiya
   d) Dijkstra algoritmi