**Bahria University,**

**Karachi Campus**



**Course: CSL-411 Artificial Intelligence**

**Term: Fall 2022, Class: BSE- 5(B)**

**Submitted By:**

\_\_Abdul Quddos\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 69984\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**(Name) (Reg. No.)**

**Submitted To:**

**Dr. Sorath Hansrajani/Engr. Rahemeen**

**Signed Remarks: Score:**

**INDEX**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNO** | **DATE** | **LAB NO** | **LAB OBJECTIVE** | **SIGN** |
| **1** | **27/09/22** | **1** | **Introduction to Python** |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Bahria University,**

**Karachi Campus**



**LAB EXPERIMENT NO.**

\_\_\_\_\_\_\_4\_\_\_\_\_\_\_

**LIST OF TASKS**

|  |  |
| --- | --- |
| TASK NO | OBJECTIVE |
| 1 | **Task 01:** Implement Breadth First Search algorithm in python for the given graph. |
| 2 | **Task 02:** Implement Breadth First Search algorithm in python for the given graph with the help of Networkx library. |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**Submitted On:**

\_25/10/2022\_\_\_\_\_\_

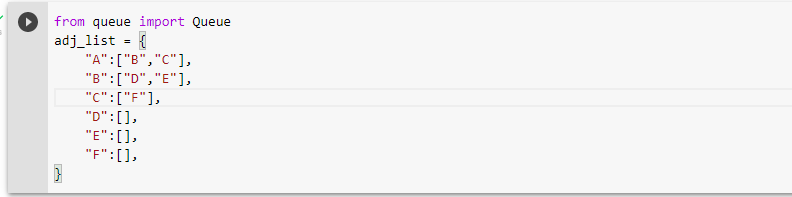
**(Date: DD/MM/YY)**

**Task 01:** Implement Breadth First Search algorithm in python for the given graph.

![A picture containing clock

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4RD4RXhpZgAATU0AKgAAAAgABAE7AAIAAAAPAAAISodpAAQAAAABAAAIWpydAAEAAAAeAAAQ0uocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAEhhcm9vbiBUcmFkZXJzAAAABZADAAIAAAAUAAAQqJAEAAIAAAAUAAAQvJKRAAIAAAADNDcAAJKSAAIAAAADNDcAAOocAAcAAAgMAAAInAAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAADIwMjE6MTE6MDIgMTM6NTA6MjIAMjAyMToxMTowMiAxMzo1MDoyMgAAAEgAYQByAG8AbwBuACAAVAByAGEAZABlAHIAcwAAAP/hCyFodHRwOi8vbnMuYWRvYmUuY29tL3hhcC8xLjAvADw/eHBhY2tldCBiZWdpbj0n77u/JyBpZD0nVzVNME1wQ2VoaUh6cmVTek5UY3prYzlkJz8+DQo8eDp4bXBtZXRhIHhtbG5zOng9ImFkb2JlOm5zOm1ldGEvIj48cmRmOlJERiB4bWxuczpyZGY9Imh0dHA6Ly93d3cudzMub3JnLzE5OTkvMDIvMjItcmRmLXN5bnRheC1ucyMiPjxyZGY6RGVzY3JpcHRpb24gcmRmOmFib3V0PSJ1dWlkOmZhZjViZGQ1LWJhM2QtMTFkYS1hZDMxLWQzM2Q3NTE4MmYxYiIgeG1sbnM6ZGM9Imh0dHA6Ly9wdXJsLm9yZy9kYy9lbGVtZW50cy8xLjEvIi8+PHJkZjpEZXNjcmlwdGlvbiByZGY6YWJvdXQ9InV1aWQ6ZmFmNWJkZDUtYmEzZC0xMWRhLWFkMzEtZDMzZDc1MTgyZjFiIiB4bWxuczp4bXA9Imh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC8iPjx4bXA6Q3JlYXRlRGF0ZT4yMDIxLTExLTAyVDEzOjUwOjIyLjQ3MDwveG1wOkNyZWF0ZURhdGU+PC9yZGY6RGVzY3JpcHRpb24+PHJkZjpEZXNjcmlwdGlvbiByZGY6YWJvdXQ9InV1aWQ6ZmFmNWJkZDUtYmEzZC0xMWRhLWFkMzEtZDMzZDc1MTgyZjFiIiB4bWxuczpkYz0iaHR0cDovL3B1cmwub3JnL2RjL2VsZW1lbnRzLzEuMS8iPjxkYzpjcmVhdG9yPjxyZGY6U2VxIHhtbG5zOnJkZj0iaHR0cDovL3d3dy53My5vcmcvMTk5OS8wMi8yMi1yZGYtc3ludGF4LW5zIyI+PHJkZjpsaT5IYXJvb24gVHJhZGVyczwvcmRmOmxpPjwvcmRmOlNlcT4NCgkJCTwvZGM6Y3JlYXRvcj48L3JkZjpEZXNjcmlwdGlvbj48L3JkZjpSREY+PC94OnhtcG1ldGE+DQogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgIDw/eHBhY2tldCBlbmQ9J3cnPz7/2wBDAAcFBQYFBAcGBQYIBwcIChELCgkJChUPEAwRGBUaGRgVGBcbHichGx0lHRcYIi4iJSgpKywrGiAvMy8qMicqKyr/2wBDAQcICAoJChQLCxQqHBgcKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKir/wAARCADWAWoDASIAAhEBAxEB/8QAHwAAAQUBAQEBAQEAAAAAAAAAAAECAwQFBgcICQoL/8QAtRAAAgEDAwIEAwUFBAQAAAF9AQIDAAQRBRIhMUEGE1FhByJxFDKBkaEII0KxwRVS0fAkM2JyggkKFhcYGRolJicoKSo0NTY3ODk6Q0RFRkdISUpTVFVWV1hZWmNkZWZnaGlqc3R1dnd4eXqDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uHi4+Tl5ufo6erx8vP09fb3+Pn6/8QAHwEAAwEBAQEBAQEBAQAAAAAAAAECAwQFBgcICQoL/8QAtREAAgECBAQDBAcFBAQAAQJ3AAECAxEEBSExBhJBUQdhcRMiMoEIFEKRobHBCSMzUvAVYnLRChYkNOEl8RcYGRomJygpKjU2Nzg5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6goOEhYaHiImKkpOUlZaXmJmaoqOkpaanqKmqsrO0tba3uLm6wsPExcbHyMnK0tPU1dbX2Nna4uPk5ebn6Onq8vP09fb3+Pn6/9oADAMBAAIRAxEAPwD6RooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACigkDrWBqPjPR9OuzaCd7u7XrbWcZmkX6hc4/GgDforlv+E1ON3/CP61s/vfZOfyzmrem+MtH1K6FoJ2tbs9La7jMMh+itgn8KAN6igEHpRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFITgZpawfGWpT6b4bnazOLqcrBB7O7BQfwzmgDLurm88Y6nPp2mTva6RbN5d1dxHDzOOsaHsB0Ldewro9L0XT9HtVg0+1jhUdSo5b3J6k/Wk0LS4tG0W2soBxEgBPdj3J9yea0KAEwKoaroen6zbGHULWOYHoxGGU+oI5B+lPGsacdVOmC9g+3BN5tvMHmbfXb1xV2gDjrK7vfCWqQaXq1w11ply2yzvJOXjftG57+zd+hrsQciszxBpUes6Hc2UnBkQ7G7ow5Vh7g4NVvCGpzar4atprsAXKAxTAdnQlW/UUAblFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABXL+Nfu6OW/1f8AaUW7+n64rqKw/F+mTar4buIrTi5j2zQE/wB9CGH6jFAG2vSmXEqwW8kshwqKWJPYCqOgatFrWi217FwZE+de6MOGU+4ORWhJGssbRyKGRhhlI4IoA+W49cvV8fp4/bTdRFvJqhjN4U/cfZD8gGc9fwr6jhkEsKSIcqygg1WOkae2nixNlAbQDHkeWNn5dKtIixxqkahVUYAHYUAKelcz4I5tNSK/c/tGfb/32c/rmtLxHq6aLodxeNy6rtiTu7nhVH1OBUXhPS5dI8N2ttctunKmSZh3djub9SaANqiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAqK5uIra3eW4dY4kUszMcACi5uYbS3ea5kWKKNSzOxwAK46OK48d3azXSvB4fibMcLDBvSOjMOyeg7/SgDL0691W11a+17w/pjy+H7hwXtgf3sx/imiXpg+nG7r9e20jxFpmtwl9Pu0lZOJI84eM+jKeQa0Y41jjCIoVVGAAOAKyNU8I6Lq9wLi8sU+0L92eMlJB/wJcGgDZ3DGc1l6x4j0vRIgb+6VHfiOIcvIfRVHJNZv/CD2u3b/amq+X/c+2vj/Gr2leE9G0ecz2VjGLhvvTuS8jf8COTQBx19e6pNrdjr/iXTWh0KFj5UGcyWzHpNKvT+e2vRoJ47iFJIHDxuoKspyCKWWFJomjkVWRhhlI4IrjGS48B3ReIPN4dlb5kUZaxJ7j1j9u30oA7aio4J4rmFJYHWSNxuV1OQRUlABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRVW51KzslzeXUMA9ZJAv8AOgC1RWZD4k0W4fZBqtnI3os6k/zrRV1dcqQR6g0AOqG6uobO2knuZFiijUszscAAVzniDx1pnh7xPpmj38qRvfpI+9mwECjPP1qlBb3Hjq7S6vkeHQIm3QWzjDXZB4dx/c9B36mgAihuPHd2txeI8Ph+Jsw27jBvSOjt/seg79TXaRxrGgVFCqowAB0oRBGgVQAAMAAdKdQAUUUUAFFFFABTJYlljZJFDKwwQRkEU+igDiXjn8B3RkgV5vDsjfPEoy1iT/EP+mft2rsbe4iuoEmt3WSN1DK6nIIPenyRrLGUdQysMEEdRXFSRT+A7pp7VXm8PStmSFRlrIk8svqnqO30oA7eiuX8OeOdN8SeIdV0rT5VkfTimWVshwwzkfyrpndUXLkAdyTQA6isubxLotvJsm1WyRvRrhQf51bttRs71d1ndQzj1jkDfyoAs0UUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUjMFXJ6Utcx4yup5o7PQ7FmSfVJfLZ1PMcQ5kb8uPqRQBWl1XVPFF5JaeHJfsmnQuUn1IruLkdViHQ/73T61ctPAmhQSeddWg1G4PWe/PnufxbOPwrb0+wt9MsIbSzjWKGFAiIowABVmgDHuPCXh+6jKT6NYMvvbpx+lZE3he/0EfaPCN7IApy2n3UheGQeik8ofTHHtXX5ooA+cvEfw88QfGDx7Lqxuo9GtrHbb+TKd00TAZPyj1OSDnkYNe4+FdBu/D+kR2d9rFxqsiADzp1AP4Y/rmszxNENA1uz8SW+UQuttfKvR42OAx91OOfQmuuVtygjvQAtFFFABRRRQAUUUUAFFFFABWB4t8PXniPR5LKx1m40l3BBlgUEn65/oRW/TXcIhY9AMmgD518LeAPEPwe8eJfrPHrNvqKtbrDC22WRuoO09gepzwM167D4VvdcX7R4vvZJdxyLC2kMcMY9Djl/qePajwrCNc1S78TXGWErGGxDdEhU9R7scn6Yrr6AMeDwnoFtF5cOjWCL6C2Tn9Kp3fgPQ5pPOs7b+zbkdJ7A+Q347cZ/GujziloA4+31fU/DV9FZeJZBdWUz7LfU1Xbgnosg7E9m6H2rr1O4ZFVdS0631XTprO9jWSGZCrKRWJ4MvZxa3Wj37l7rS5fJLt1kj6o34rj8c0AdNRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFctL+9+KEIfpBpzMn1ZwD/wCgiuprk9dcaX420fU5OILhXspG7KzYKZ/EEfjQB1lcL8Y9Qu9M+GWo3WnXE1vcK0YWSBirjLgHBFd0DkVj+KfDdn4s8Pz6RqLSLbz43GM4YYORg/hQB5D4G1jVrP4l6Xp9xPr0FnfWbs0WtSF/OcYOY/SvdhXFeHvhdpGga1Fqpu7/AFC7gQxwPe3Bk8oHrtHau1oAxPGUCXHg3VY5OhtXP04q5okrT6FZSv8AeeBCfyrH8e3LDw1JYW/zXOpMtpEo65fgn8Bk/hXQ2cC21nFAn3Y0Cj8BQBNRRRQAUUUUAFFFFABRRRQAVm+IpWg8N6hKn3kt3I/KtKq+oWwvNPnt26Sxsh/EUAUPCtulr4V02GIYRLZAPyrXPSub8CXbTeF4LW44urHNrOvo6cfrwfxrpKAPIJLbUvHnxC8SWc/iC/0m00XZFbRWcxiyxXO9sdRXofhBbuPw1bR6jqkOqzxgo13D0kwcA9Tz6+9YviP4W6T4h1qTVFvL/TbqeMR3DWU3l+evo1dNomi2fh/R7fTNMj8q2t12ouc/ifegDQrlrXEPxMvkQcTWMTv9QzgV1BOAa5Xw9J/ani7WtUQZgRks4W7N5edxH/Amx+FAHV0UUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABWb4g0y21bRLi1vG8uNlz5mcGMjkMD2IPNaRIAyeBXGahNN4z1WTSrJ2TR7V8XtwvHnsP+WSn0/vH8PWgBvgzxrHqUSafqb7L1SywzMpSO9VTjzIyevToK7XNZd/4d0vUtNWyu7RGhQARhRtMeOhUjkH6VkJ4e8Q6Yu3R/EBmhXhIdQhEm0em9cMfxzQB1dU9T1Sz0mye71C4SCFBks5x+A9T7VhfZPGtx8k1/pNsv8Afggd2/JjipLHwbAt8t9rV5Pq94n3HucBI/8AdjGFB98Z96AMrwzdjxf4muNYu1kgXT28m0spl2ugYA+awPdh09BXdVyfiawm0q+i8S6TEzzWy7LuBP8AlvD347svUfiO9dJY30Go2MN3ayCSGZA6MO4NAFiiiigAooooAKKKKACiiigAooooA4/V7e58N64+v6fDJPZXAA1C2jGSMdJVHcjuO4HtXS6dqVpqtml1YTpPC4yro2RVplDDB5Fc1e+DIRfNfaFeT6PdPy5t8GOT/ejOVz74BoA6ajNcLq174y0OSyiW60q8W7uBAsksLowyCckA47Vefw7r+qLs1nxA0ULcPBp8Xl7h6bzlh+GKAF1/X5ru6bQvDjCXUZBiaZRuS0Q9WY9N2Oi1uaLpUGi6TBY2wOyJcbj1Y9yfcnmjStFsNFtRb6dbrCg5OOSx9STyT7mr9ABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRmjNABRTXcJGzHoBmvMNK+Kn/CWfbtI0EL/ayXklurH7sUStjzm9sdu5oA6TXtTuta1I+HdBk2NjN/dqf+PdD/CP9s/oOa6LS9MtdH06GysIhFBCu1VH8/rVbQNEttC01be3JkkY75pn5aVz1Zj61qUAFFFFABRRRQAjAMpBGQa42yz4O8Sf2e426PqUha1YniCY8mP2DdR75FdnWfrej2+uaVNZXY+WQfKwOCjDkMD2IODQBoA56UVx2meLU0jRr6LxRKsF1pC/v3P/AC1j/hkH+8B+fFdbbzpc20c8ZykihlPqDQBJRRmkyKAFooooAKKKKACiiigAoooNAHLeMHVrjQirAj+0V6H/AGWrqFZWztIOOuO1fNvxusPFXhzxnZXHhi9uks9WnGyJDuWO46cA9CQc8e9e5+CdDk8PeFLOyup5Li62B7iaRizPIeWJJ96AOgooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigA6Vha74ng0iaO0ghe+1GcZhs4fvN7k9FX3NWvEOsR6Hok99IpcoMRoOrueFUfUkCqPhbQn0+3e+1E+fql7+8uJW/hzyEX0VelAFNdH8Uauok1XWRpcbc/Z9OQb19jI2c/gBTz4KlUZh8Ta8knZjdhh+RXFdV0ooA4TW08aaNol2ttJDrsbQsqnZ5U8ZIwDxw/0AFeefDL4FaIVi13UdZn1C5LEtHbsYQj55Vh97IPbivfiM9a47XLY+F9YTxFYAJaTOsepQjoVJwJceq9/UfSgDrYIUt4UijGFQYAznipKajB0DKcgjIp1ABRRRQAUUUUAFI4JQhTgkcH0paKAPnL41fD74hanM1/aXi6tYopHk28QjlVc52kD744/+tXo3hXxhe6l4U0uw8P2Ru9QS2RbmWYlIbZgOQx7t/sjn6V0Pi3ULhmtdD0uXyr/UmKiQDJhiH35PwyAPcitfR9HtNE02KysYhHHGPxY9yT3J9aAMMeF9avj5mseJ71WP/LPTgsCD8wx/WhvB17B8+neKNYjkHQXEyzIfqCv9a6uigDkDr+seG5AviqGOeyJx/aVopCp/10TkqPfJH0rq4Zo7iFZYXV0cZVlOQRRNDHPE0cqK6MMMrDIIrktIDeFfE39hvITp16GlsN3/ACyYfeiHt1Yfj6UAdjRRRQAUUUE4HNAFbUNRtdLsZLy/mSGCMZZ3OAK5lL/xL4ly+komjaefuT3Ue+aUeoTI2j65+lMghPi/xNNc3OH0nS5THBF/DNMPvOfUL0HuDXYgBRgDAoA425+Hiaj5L6tr+s3UsMnmRt9oVAj+qgLxU58P+I9My+j+IZLsDnyNUQSA+wddpH15rrKKAOd0bxSLy9/szVrZtO1RVyYJGysgHVkbow/Ud66IHNY3iTQI9c0/arGC7hPmW1yn3onHQj29R3FN8K6y+r6Rm7UR3tu5guox/DIvB/A9R7GgDbooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKAOW8UhbvxD4e06TlJLpp2Hr5aFh+uD+FdSOlct4qK2niDw/qMnCRXTQsfTzEKj9cCupByKAMvxNqcujeGNQ1K3VXltbd5VVuhIUnmvOdN+Iviy0Xw/qHiSw05tK1uSOJJLRmDws4yu4HrXo3ibTJda8M6hptuypLdW7xKz9AWBGTXnOlfDjxXdN4fsvE+o6d/ZWhukkcNmrF5mQYXcW/pQB6yp3KD6iqes2Ueo6Ld2cwyk8TIw9iMVcUbVA9Kpa1ex6dot3eTHCQQs5/AZoAzvBFzLd+DNNknbdKIdjt6lTt/pW/WD4JtZbPwZpsVwu2Uwh3X0LHd/Wt6gAooooAKKKKACg9KKKAOW06Nbz4jardPy1lbxQR/7IcFm/PC/lXU1y2nyLZ/EbVLWThr22iuI/8Aa2ZVvyyv511NAHJfEvxVd+DfBk+r2CQyTRyIgE+dvzHGTis7wD4s1fxHfTLqGoaFdwxxBtumSMzqSf4snpWj8SvC154x8Gz6Tp8kMc7yI6mfOz5TnBwDVTwVoHiPRr5/7Ws/D1vbNFtzpcBjkZhjGTgZHWgDuK5bx5CF0q01BeJbC8imRvTLBD+jGuprlvHcwbS7TTl5lv7yKJF9cMHP6KaAOoXlRS0ijCiloAKo61cmy0S8uV6xQs4/AVeqjrNsb3Rby2HWWFkH4igCh4LshYeD9OhHLGBXdv7zHkn8zW7WD4KvRf8Ag/TpejiEI6/3WHBH5it6gDy7xp8RdY0Tx4mgadNo9pEbQXBn1OQoCdxG0EEeld94euru90K2udQktZZ5E3M9oxMTZ6FSe1czqHw/j1b4m/8ACQanDZ3diLEW4gnj3kPuJ3YIx3rtLe2htLdILaJIoowFREXAUegFAEprldNRbL4iatBHwl1bw3BX/aG5Sf0FdUelcrpji9+IerXEfKWtvDbk/wC18zEfqKAOqooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKAM3xBo8euaJcWMpKmRco46o45Vh7ggGqHhXXXv7d9P1JfJ1Wy/d3ETcb8cCRfVW6/pXQ1ia74Zt9YljuopZLLUIAfIvIOHT2P95fY8UAbdFckuqeKtIATU9JXVY14+0ae4Dt7mNsY/Aml/4Ta4f5YfCuvGT0e2VR+ZbFAHVk45NcdrdyfFOtJ4fsCHs4HWTUphyoAORED6nv6D6094fFXiL91c+XoNk33xFJ5lw49M4wn1Ga6HSNHs9EsVtNPiEcS8nnJYnqSepJ9TQBdRQiBV4AGBS0UUAFFFFABRRRQAUUUUAc14t065P2XW9Ki82/01iyxg4M0Z+/H+OBj3ArW0bWLXWtOjvLKTejjkd0PcEdiPSr5GRXMah4Wngv5NU8M3Y0+9kO6aJl3Q3B/2l7H/AGhz9aAOnork/wDhJtdsPl1fwxdSkf8ALTTXWdT+B2kflR/wmGo3Xyab4V1cyHobpFhQfUlif0oA6maaO3haWZ1REGWZjgAVyWj7vFPiX+3ZIyNOsw0Wn7h/rWP3pfp1Ue2T3p3/AAj2r+IpA/iy4jiswcjTLRiUb/ro5wWHtgD611cUSQRLHEqoijCqowAKAH0UUUAFBGRzRRQBxkU3/CIeJ5YLnCaRqkpkhl7Qzn7yH0DcEe+a7JWDDI5FV9Q0+21OxktL6FJoJRh0cZBrmU03xJ4bJTRpY9XsB922u5CksQ9Fkwdw9j+dAHX0Vyf/AAml3D8t34V1xZO4igWRfwIakOu+JtUGzSdAaxU8efqcgXb7hFyT+JFAGn4k1+PRLDKKZ7yc+XbWyH5pXPQfTuT2FJ4V0Z9H0cLdMJLy4cz3Mg/ikbk/h2HsKi0XwstjeHUtTuW1HVHXDXEowEH91F6KPp+NdBQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAYowKKKADFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAGKMUUUAFFFFABRRRQAUUUUAFFFFABijFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAf/2Q==)

**Code:**

**** #bfs code

visited = {}

level = {}

parent = {}

bfs\_traversal\_output = []

queue = Queue()

for node in adj\_list.keys():

  visited[node] = False

  parent[node] = None

  level[node] = -1 #inf

# print(visited)

# print(level)

# print(parent)

s = "A"

visited[s] = True

level[s] = 0

queue.put(s)

while not queue.empty():

  u = queue.get()

  bfs\_traversal\_output.append(u)

  for v in adj\_list[u]:

    if not visited[v]:

      visited[v] = True

      parent[v] = u

      level[v] = level[u]+1

      queue.put(v)

print(bfs\_traversal\_output)

**Output:**

****

**Task 02:** Implement Breadth First Search algorithm in python for the given graph with the help of Networkx library.

![Diagram

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4RDmRXhpZgAATU0AKgAAAAgABAE7AAIAAAAJAAAISodpAAQAAAABAAAIVJydAAEAAAASAAAQzOocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAFJhaGVtZWVuAAAABZADAAIAAAAUAAAQopAEAAIAAAAUAAAQtpKRAAIAAAADMDgAAJKSAAIAAAADMDgAAOocAAcAAAgMAAAIlgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAADIwMjI6MTA6MTggMTM6MTM6MDMAMjAyMjoxMDoxOCAxMzoxMzowMwAAAFIAYQBoAGUAbQBlAGUAbgAAAP/hCxtodHRwOi8vbnMuYWRvYmUuY29tL3hhcC8xLjAvADw/eHBhY2tldCBiZWdpbj0n77u/JyBpZD0nVzVNME1wQ2VoaUh6cmVTek5UY3prYzlkJz8+DQo8eDp4bXBtZXRhIHhtbG5zOng9ImFkb2JlOm5zOm1ldGEvIj48cmRmOlJERiB4bWxuczpyZGY9Imh0dHA6Ly93d3cudzMub3JnLzE5OTkvMDIvMjItcmRmLXN5bnRheC1ucyMiPjxyZGY6RGVzY3JpcHRpb24gcmRmOmFib3V0PSJ1dWlkOmZhZjViZGQ1LWJhM2QtMTFkYS1hZDMxLWQzM2Q3NTE4MmYxYiIgeG1sbnM6ZGM9Imh0dHA6Ly9wdXJsLm9yZy9kYy9lbGVtZW50cy8xLjEvIi8+PHJkZjpEZXNjcmlwdGlvbiByZGY6YWJvdXQ9InV1aWQ6ZmFmNWJkZDUtYmEzZC0xMWRhLWFkMzEtZDMzZDc1MTgyZjFiIiB4bWxuczp4bXA9Imh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC8iPjx4bXA6Q3JlYXRlRGF0ZT4yMDIyLTEwLTE4VDEzOjEzOjAzLjA4MjwveG1wOkNyZWF0ZURhdGU+PC9yZGY6RGVzY3JpcHRpb24+PHJkZjpEZXNjcmlwdGlvbiByZGY6YWJvdXQ9InV1aWQ6ZmFmNWJkZDUtYmEzZC0xMWRhLWFkMzEtZDMzZDc1MTgyZjFiIiB4bWxuczpkYz0iaHR0cDovL3B1cmwub3JnL2RjL2VsZW1lbnRzLzEuMS8iPjxkYzpjcmVhdG9yPjxyZGY6U2VxIHhtbG5zOnJkZj0iaHR0cDovL3d3dy53My5vcmcvMTk5OS8wMi8yMi1yZGYtc3ludGF4LW5zIyI+PHJkZjpsaT5SYWhlbWVlbjwvcmRmOmxpPjwvcmRmOlNlcT4NCgkJCTwvZGM6Y3JlYXRvcj48L3JkZjpEZXNjcmlwdGlvbj48L3JkZjpSREY+PC94OnhtcG1ldGE+DQogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgIDw/eHBhY2tldCBlbmQ9J3cnPz7/2wBDAAcFBQYFBAcGBQYIBwcIChELCgkJChUPEAwRGBUaGRgVGBcbHichGx0lHRcYIi4iJSgpKywrGiAvMy8qMicqKyr/2wBDAQcICAoJChQLCxQqHBgcKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKir/wAARCAE3AfcDASIAAhEBAxEB/8QAHwAAAQUBAQEBAQEAAAAAAAAAAAECAwQFBgcICQoL/8QAtRAAAgEDAwIEAwUFBAQAAAF9AQIDAAQRBRIhMUEGE1FhByJxFDKBkaEII0KxwRVS0fAkM2JyggkKFhcYGRolJicoKSo0NTY3ODk6Q0RFRkdISUpTVFVWV1hZWmNkZWZnaGlqc3R1dnd4eXqDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uHi4+Tl5ufo6erx8vP09fb3+Pn6/8QAHwEAAwEBAQEBAQEBAQAAAAAAAAECAwQFBgcICQoL/8QAtREAAgECBAQDBAcFBAQAAQJ3AAECAxEEBSExBhJBUQdhcRMiMoEIFEKRobHBCSMzUvAVYnLRChYkNOEl8RcYGRomJygpKjU2Nzg5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6goOEhYaHiImKkpOUlZaXmJmaoqOkpaanqKmqsrO0tba3uLm6wsPExcbHyMnK0tPU1dbX2Nna4uPk5ebn6Onq8vP09fb3+Pn6/9oADAMBAAIRAxEAPwD6RooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiue8X+J4/DelF0Cvdy/LDGfX1PsKzqVI0oOc3ZIunTlUkoR3Zoatr2m6HCJNSukiz91c5ZvoK5G5+LFgj4tbC4mH95iFzXm1xcXWqXj3N7K000hyzsf09hUqWfHNfH4nPqrlalovxPpqGUUkv3mr/A9Is/irpczhby1uLYH+LAYD8q7DT9Ts9VtRcafcJPGe6Hp7H0rwZ7PA4p+l6rfeH9QW6sJCjA/MhPyyD0Iq8Jn1TmtW1X4k4jKION6Wj/A+gaKzdB1q317SIr614DjDoeqN3BrSr6+EozipR2Z81KLhJxlugoooqiQooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigBGbapJ6AV4h421N9U8VXGWzHbnykHpjr+te1XhIs5SP7prwDUsjW7rd185j+teBn05RwyS6s9jKIp1230RYtYgFFdXoPhY6pDHc3VzHbWsj7E5G6RvQVzNsQVra8Pu7+JNLVmYqlwNqk8L9BXxOEdJ4hKrHmT0t8z6qupqi3TdmiPXtNi0vWZrKFmdIwuGbqcjNYN3ENprq/GX/I2Xf0T/wBBrmbojaaWJiqeLnCGiTf5hRk54eEpbtL8jpvhXqTQ6zdaa7fu54/NQejKQD+h/SvVa8Y+HCM/jqBl6LDKW+mMf1r2evvclnKWEV+jZ8jmsUsTddUgooor2TywooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigBsqeZEynuMV4h4w0x7HXJH24Vz6d69vkkSKNpJXVEQFmZjgADuTXjmr3t38UNeceG1aHQLCTEl+Bhr2Qfwp/sD1rlxmEWLoOm9PPzOjDYr6tVU9/LyMC1uMAAmtO1vXtriO4gfZLG25G64NZ+oaRdadOwaNtoPXHSqi3DjivzjEYOrh6lpKzX9aM+2o4inWheLuv63N2+1Ka+uXubuTzJnxubAGcfSsi5n3cCoDO78DJPoK3dF8I32q5lmidIAOQeGb/CtMNgq2Jqe6rt7v8AzZNfE0qEPe0Xb/JHV/CzRnhjudVnUgzDy4sj+Eck/if5V6LXlPhrxLc+A9Tg8P8AimZpdGupNmm6q4/1T/8APGY9j6MeP6erA5GRX6Nh8MsLSjSjrbr3PiK2IeIqOo9PLsFFFFbmQUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABTZJEhiaSV1REUszMcAAdSaJZUhiaWZ1REBZmY4AHrXk+p6jf/FjVH0jR5ZbTwnbybby7T5Xv2B/1aHsnqe9VGNyZSt6i6lqN98WNUfS9HkktvCsD7bq6T5WviDyin+56mvS9J0m00fT4bOxgSGGFAiIgwFHoKNJ0m00bT4rOxgSGGJQqIgwFA7VeolK+i2FGNtXuZ9/olnqAPnRDd6gV5p8UPDUGjeB9VvrRiksduWVl4KnI6GvW68/+NH/JMtZ/69T/ADFJRUmk1cqTai2i/wCGvCGnjRdPunQM8ltE7EjqSgJrrYbeK3j2RIFX2FUvDv8AyK+lf9ecP/oArRpWS0QJtq7Oc8S+GrXV9PuIJ7dJ7edds0LDhx6+xHUGuO8N+JbvwLqEHh/xPcPPo0zeXp2pynmI9oZT29jXqlc54l8NWmr6fPDcWyXFvMu2aBujj1HoR2PaqjK2j2JlG+q3OjByKK8q8M+JLzwJfweHfE9zJdaLK3l6Zqkv3ofSCY+o6Bv8j1QEMAQcg9CKJRsOMuYWiiipKCiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAoorI8ReJLLw5YefdndI3EUK/ec/4e9ROcacXKbskVCEpyUYq7Zr5pvmIOrr+deJav421vWZWAuGtISeIrc7cD3PU1hkXDtuaWUt6mQ5/nXz9XP6UZWhG/4HtU8nqSV5yt+J9F5B6c02SRIY2kldURRlmY4AHqTXg+neJdb0aQNa30pUdY5WLqfwNbV5qmrfE2+ttCMiabpfl+ZfCKT95dEH7i+i+td2CzShi5cnwvz/Q48Xl9bDx517y/rcm1HVL74savJpWhvLbeE7WTZdXq/K2oOOqR/wCx6n/61emaRpFpo2nxWljCkMUShVRBgAUaTpFro2nQ2djCkMMKBERBgKKvV68pX0Wx5kY21e4UUVFcXMNpbST3MixxRruZ2OABUt21Ze5LXn/xn5+GWs4/59T/ADFY/iL4k3t5M9voX+jW4OPOI+d/cegrj55ry9cvd3E05PXzXLZ/A14NbPaFGdoLmt8kexTyirVh775b/M928OMD4X0vBB/0OH/0AVpV89W19qOnOHs7y4gI6bJDj8uld34X+JLtMln4h24Y7VulGMH/AGh/Wqw2d0K8uWa5W/uJrZTVpRvB81vvPSqKQMGUFTkEZBHelr3DyTnPEvhq11fT54p7dZ4ZlxLCw4YevsfeuN8N+JrvwJqcHh7xRO9xolw3l6Zq0nWFv+eEx7H0b/I9VrnPEvhq11fT54Z7dZ4Jl2zQsOGHr7EdjVRlbR7ESjfVbnRgggEcg+lIWA6nH1rxrTvFes+DILrQftEepQQECyuZiTJCv9xx3I9axb3WtX1WQteX08mf4Q5VR+ArxcZm1DDTcF7zXY9XC5dVrxU5e6j34SIejKfoadXzrG11C2+KaZGHdZGB/nXSaH8QdX0mVUvXN9bZ+ZZD84Hs3+NctHPqM5WnG34nTVyepFXhK/4Hs1FUtJ1a01rTkvbCTfE/X1U+hHY1dr6CMlJKUXoeLKLi7PcKKKKoQUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAR3Ey28DyyHCoCSTXg/iDWJvEOuTXchOzO2Ff7qDp+fWvWPHd01t4Vu/LOGaMjP14rxi1Ub6+W4gryio0ltv/kfQZNSTcqj9C5BbAL0rVTQr97fzksp2ixncEPSorKRLe4ileMSqjBihOA2O1dvoWsanrXiI3xJtdNgjIlj3ZjHHT3OefavmcFQpYmfJOTu3ZJL72/JHvYmrUoQ5opWSu23+C82eeTWwIPFUopp9Nvorq0cxzQuHRh6/wCFdFrM8F3rF3NaDELyEpgdR61g3oFc8ZOnVcYu9nubSSlBNrfoe66HqketaJa6hFwJ4wxH909CPwINX64f4VTtJ4XnibkQ3TBfoQD/ADJruK/TsJVdahCo+qPgsTTVKtKC6MK8t+JviF57tNGt3IijAefB+8ew/rXp1w/l27t6CvAtZma68RXsrnJadvyHFebnVaVLDcsftO3yO7KqSnXu+iuRW1vu5IrVtNMnvG2WlvJMw6hFziq9soCiuj0rWbtLEaPp/k2r3EnzXZcqfXk9umK+EoqFWry1G0vLdvsfXT5oQvBXfn08zDu9NmtH8u6geF8dHXGaybm325IFek+MzLHoum21zuuZVAL3m35WOOgPvXB3S5U1riqKwuIdKLvsZ0Kn1iiqjR6F8MtefUNLk025ctNZ42Enloz0/Lp+VdzXjXw2maLxvFGp+WaCRW98YP8ASvZa+8ymtKthU5brQ+RzKkqeIfL11Cub8b6+dB0CR4Di5mPlxexPf8BXSV5P8UbppdWtYM/Iis2PfgVvmFZ0MLOcd/8APQxwdJVcRGD2/wAtTjIYzNIWYliTkk9SfWtGK3AXnioLNRgV1PhzSFv7l7q8BFjaDfKcZ3Hstfm8YVMRVVOG7/q59w5QpU3OXQyJtMuIbdZpreSOJ/uuy4Bz0rNuLYYOBXpPim6fUfBVldeQYt8wbywD8i/NjP4YrgpRlK1xtBYSsoQd00n95nhqrxFJykrNNr7i74B119G8Rx20j/6LesI3U9A/8Lf0r2ivnOZjDOJE4ZGDAj1BzX0Rbv5lvHIf4kB/MV9dkNeU6Uqb6fqfOZxSUakZrr+hJRRRX0Z4YUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAc344tTdeHpUXupFeLwNskw3B6GvoPUYo5rCVZ2VU2kszHAA9a+fJ7qDUNSvZdJjklsYZNi3WPklbvt9vevn88wc61JVoK/Lv6Hs5Vio0qjpSfxbept6ebeS4iW7kaOAt87KMkD2Fdtd6v4budKj02G6urW1T7yRREb/qa8yhuinBq0LwY618hh8TUwsZRjFPm3v+W59LVowruMpSat2/4Y0b420d1KLJ2eAH92zjBI96xbyTJxTpbvIwDmr3hzQJ/EOqJHtIt1bMr+3oKjD4ederywWr/r7iq1aFKneT0R6V8NrBrLwfHJIMNdSNNz6HgfoK62oreBLa3jhjUKsahQB2AqWv0yhSVGlGmuiPhKtR1ajm+rIrpS9rIo7qa8E1yBrXXrlWGNz7h+NfQB5FeZePvDjmb7Xbr78fyrhzTCyxOHcYbrVHXl+IVCveWz0OQtpAVFdVY3ehXmiLZarG1rPGcrcxR5LD3rhY5WhbawIIPINXEvBjk1+fwlPDzbUU76NNH2MlGrFJtq2t0djrmt2D6HbaPpXmSQQHJmlGCfp+dcfdyjaabJeDHBqvHHPqF0kFuhkkc4VRVzlVxdVSktdEkvwQoxp0KbjF+bb/M634XWLXHiaa8I+S2hIz/tN2/IGvXK5/wfoC6BoiwnBmkO+VvVq6Cv0LL8M8Nh405b7s+LxtdV6zmtugV5R8TbRl1GK4xxypP1r1eub8Y6INV0xiq5ZRW2LofWKEqXf+kZYet7GrGp2PHrOTHFdNpviPUdMtTBYzKkZYsQUB5rlbi3lsLlo5QQQeD61NFeYHNfm0418NVfK3GSPuYypV6a5rNM77UvF5u/C8VssxN6/wAtzmPAK85wfyrjJ5Aq4qA3gx1qpNcl+BSr162LmpVXsrBSpUsPFxprd3JLW1fUtWt7SIZaaVU49M8/pX0JGoSNVHRQAK8R8Kaja+GvFFnP4itngtbtfLtr1j+7jkP8Lf3cjoTXt4IIyORX3OT4OeHoc81Zy/I+TzPFRr1uSD0j+YtFFFe0eWFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFNkkSKNpJWCIoyzMcACh3WONnkYIijLMxwAPU15Rqer33xW1aXR9Akkt/C1tJsvL9eDfMOscZ/u+pqoxuTKVvUNV1O/wDitqz6Nocstp4Vt32316nD3zD/AJZRnsvqf/1V2/8Awhumx6NFYWsCQRxJtjVBworT0fR7TRNOhs7CFIYolCqijAAq/RKV9FsKMbavc8l1b4fXMMjNbA4/2Rx+VcnNptzD4ms9DMbG5u4nlRgOAE65FfQxAPWvLr9R/wANB+HBgY/s+7rzp5Xg60nKUNfLT8juWY4mlFKMu2+pX0n4cXFxIrXzEJ3UDFek6To9rpFqsNtGqgDsK0MY6UVvQwtHDq1KNv67mdbEVazvUlcKKKK6DAKhurWK7hMUyhlI71NRQB51r3w/82RpbQZ9MdRXJzeDdTifCrn6qa9xppRT1UflXDXy/DYh81SOvfb8jro4yvRXLCWn3njNj4C1K6kAlOxe+Fr0Lw54Os9EUPsDTHqx5NdKFA6AClqsPgcPh3enGz77sVbF166tOWgDiiiiuw5QpCAwIIyDS0UAcn4h8GQamGkgUBzyRXA33gi/tmbYDtHqM17VUF4oNpJkA/LXLXwlDEfxY3/M6KOJrUP4crHgmhaRda/eajb2iFTp1wLeVm5y2M5FeheHvh3FbSrcah+8ZeQG7fhVP4TAf8JB444/5i4/9AFemVnTyzCYed4Q189fzKlmGJrQtOX3afkc14h8LWWpaZLbS2qT28qbZYG6OP6H0PauO8NeI7zwFqEPh7xNcyXWhzPs0zVJfvQekEx9ugb/ACPVq53xL4atdXsJ4p7dJ4ZlxLCw4Yf0PvXoxlbR7HFKN9VudCpDKCpyDyCO9LXlPhzxLd+AdSg0DxPM8+h3L+Xpuqyf8sG7QTHt7N/keqgggEHI9aUo2HGXN6i0UUVJQUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRXI+KvHtpoDtaWiC7vu6Zwkf+8f6VjWrU6EOeo7I1pUp1pckFdnXUV4VfeL/EOpyFptSmiQ/wDLO3PlqPy5/M1Ui1rWbZt8GqXqH189j+hrw5Z/QUrKLsessnqtayVz6ApruscbPIwVVBLMxwAPWvLNA+J17bSpBryC6hJx56LtkX6gcEfkabrWoaj8UdWfQtGaey8MwPi/vFBV7w/88k9F9TXsYPF0cWr03tv3R5mKw1XCu01vsJquq3vxU1STRtBlkt/DED7Ly+Tg3hHWND/d9TXpOj6PaaJpsNlYQJDDCgREQYCijR9Hs9E02Gy0+BIIYVCoiDAUVfrslK+i2OSMbavcKKKz9Z1qy0Kwa71CXYg4VRyzn0A7ms5SjCLlJ2RrGLk+WK1NCvL9QGP2hPDmeP8AiX3dZus/EfWdRkZNOb+zrfsEAaQj3Y9PwrmXur2W9W9kuZmukBCzlzvUHqA3UA14k8+w9OTUU5fgerHJ61SKcml+J9EUV4jpnjvxDpUoLXZvIu8V182fo3UV6h4Z8WWPia3JgzDcoP3lu55X3B7j3rqwmZ0MU+WOj7M58TgK2HXM9V3RvUUUV6ZwBRRRQAUUUUAFFFFABRRRQAUUUUAFQ3YzayY5+Wua8VeObTw8TbW6C7viP9UGwqe7H+lea6h4x8Qaq7GbUJIoz/yyt/3agfhyfxNeVis1w+GlyvV+R6OHy6tXXNsvM6r4Tf8AIweOf+wx/wCyCvS6+ebS+1DTpZJbC6ntpJW3SNE5UyN6t6n6112hfE3ULORYdcQXkHQzKoWRfcgcN+hrCnnuHqztJOP4mksnrU4e60z1iiq9jfW2o2cd1ZSrLDIMq6nrVivbTTV0eW007M53xL4atdX0+4hnt0ngnXbNCw4cf0I6g9q4vw34kuvAWowaB4muHm0SZ/L07U5TzCe0Mp7exr1aud8S+GrTV7CeG4tkubeZds0Djhx/Q+hHIq4yto9jOUb6rc6IHIBHIoryjw34ivvAN2ugeIHnvtEYH+ztQYbpIQP+WMv07H/Ig1v4larqEjR6SBYW+cBgA0rfieB+H51w4zG0cH/Eer2SOzC4WrivhVrb3PXqK+fn1fWJn3yanes3qZ2/xrQ07xv4h0uQEXzXMY6xXXzg/j1H515MM+oOVpRaR6UsnqpXUke40VznhbxlZeJY/LC/ZrxRl4GOc+6nuK6OvepVYVoKdN3R5FSnOlLlmrMKKKK0MwooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKAOd8aeIP7A0KSWEj7TL+7hHoT3/CvF0V7iZpJWLsx3MxPJPrXYfFC8abWba3z8kaM2PcnFczZoNor4bPsTKWIdPpH/hz63KaEY0VPqyaG0zwqlj6AZqV7J9pJicD1KGut8ARE6xcSqufLg4+pP/1qvak3iKXRJ5Rf2d5BtKzLAASo78159HL/AGuG9u29b6JX2+aO2pi1Cv7FJdN3bf5M81uLbAJArqPhvr7WGtjS7hv9HuziPP8ABJj+v88ViTKClZiTNaX8NxEcPDKsikdiCDWWAxUqNWNRdPyLxdCNWm4PqfRVFIjb1DDoRmlr9OPghksixRs7nCqMkmvDPFOvTeItckm3H7PGSkCdgvr9TXqvje8az8L3bRnDNGQD9eP614rar84r5jP8RKEY0l11f6Hv5PRUnKo/QtW9twM1aFuMfzqW2iMjxxrwXYKPxNemNY3mmPaWeiwWiQKoMzT43Tt3A/Dv718xg8HPGc0r2StsrvXyPexGJjhuVWu3522PKJrUFelV7K9udG1KK8s2KyxNkejDuD7Guo8TIq65MBZGyOAWiyCM+ox2NcveqBWKcqFdwT1i9zR8tWkpW0aPedK1GLVtJtr+3P7ueMOPb1H4HirlcV8LLlpfCssLEkQXLquewIDfzJrta/TMLV9tQjUfVHwuIp+yqygujCiiiugwCiiigAooooAKKKKACsHxfrw8P6DLcJgzt8kKnux6fl1reryr4pXjS6laW2fkQM+PfgVxY6s6GGnUjuv10OrB0lWrxg9v8tTih5l3cPLO7SSO253bqxq/FajAwKgskGBWxYXkunXkd1b7fMj+7uGRX5nOfNO0nofdxjaN0imbXj7p/KqVxa4zxg16j4b12/v4ru+1MwpY2qnJWPG5uuM+w/nXCatdHUb6e7dQplctgdh2rrr4enQpQqwm3zbJq2nfdnPSqzq1JU5Rty9b317bIu/DvxA+l64umzv/AKLeNtAJ4STsfx6V7BXzo8jW10k0Zw0bh1I7EHNfREL+bBHIP4lDfmK+syHESqUZU5fZ/U+dzeioVFNdf0H0jMFUk9BS1jeKrxrHw7dyocMImx+VfQyaim2eKk27I8m8X6z/AGz4gn+z8WsTFIwOjEdWrPt7UYBIqrarlxnmteNcR8V+W4zETrVHOW7Pv8NQjTgoR2Q6HT5p1JggllC9SkZbH5VWmtcZBGCOoI6V6jCmoT6DpP8AYEiWSAjzVlXBf6evf61zXjiSCTxCwhiZGVAJCVxvPr7/AFrsxWXLDUPbKT6dNHdX016eZz0MZ7ar7Pl79dVZ219Th4Z59Nvorq0cxzRNuRh6/wCFe7aBqya5odtfx8eanzr/AHWHBH514beLXo3wmuWfRb+3P3YbgMv/AAJf/rV6eQYiSq+y6P8ANHBm9FOlz9Ud9RRRX2h8sFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQB5D8SbZk1qOY9MFf61zdnIMCvVPHeiDUNOaZQMoMk+nvXjltcxuN9vKsse4rvQ5BI618Xn2DkqvtktJfmfU5RiYun7J7r8jtvD0mmfaJYtXeWOOVcJLHIy7T74PP41s21zpnhnRr6K31BL+4uhtVY1wAMEZP51wMV2Mdaka7XHBrxKGMnQgoxgrq9n1139fmerVoRqu8pOztddNPy+RJO4VMZqjZ2r6jrFtaRDLTzKn4Z5/SmT3O/gV3fw28Nubr+2LxCoUEQKw9erVtluDlXrKPTr6GWOxUaNJyfy9T01QAoA6AcUtFFfpJ8Mcz47t2ufDsyr3U14zbttkGeK+g9QtVvLGSFv4hxXh3iDSJdL1KTKkIW/I185nuFlVpqrHpv6HuZRiFCbpy67E9tN5bxyLyUYMPwNd1qK2PiG+0/VItWit1gUeZHIcMhBzx715lBdbeDVr7UuOor5LD4iWHUoOPNF2fbVbbH0dWkqrU1KzV/xOk8XatBqmtNNanMUaBA3973rkbxwTipJrsY4NSaJo9x4g1ZLaIEJnMr/wB1f8acY1cZiHO3vSYm6eHoqN/dij034ZWTWvhESuMG6maUf7vAH8q7GoLK1jsrKG2hULHEgVQOwFT1+k4ekqNKNNdEfDVqjq1JT7sKKKK2MgooooAKKKKACiiigAryb4mWzLqkU+OOVP416zXK+N9E/tPTWdBllHOK5cZQ+sUJUu/57o6MNW9jWjUfQ8ls5OxrTjHmMqggFiBljwPrWK8clncMkgwyn86tRXYxya/Ma1GUJtSWqPvKVSMo3TO38QajaWug2eiaTMssYG+eRD94+n4nmuSmcBaiN2oHWqc9zuyFq69WeJqc8lZJJJdEkTShGhDlTv1b7thFbtf6lDbRDLTSKgH1NfQ0SCOJEHRVAFeRfDGystQ8Q3Ez3MbXNiB/oxOHXcPvYPavX6+4yXCyoUXOas5fl0PlM0xEatVQi7qP5hWF4vgNx4fnQd1I/St2obu3F1ayRN0YYr3Gk1ZnkptO6PnmAmOTDcEHBrXhkGAeuDnFL4n0WXS9TkbYdjNk8dDWZBdbeDX5lj8JPD1nB9NvNH3mExMa1NTXU9J1K60XxFHZTy6o1i9soDRFen09Dx1rI8X6zbatqUbWeWjhj2eYRgua5gXYx1qGa7GODVV8dVxEJQcUua13rrbb0+QqWFp0ZKSk3y3su19xl4+eBXpnwqs2g8PXNywx9pnyvuFGP55rzXS9Nudc1OO1tgcsfmbsi9zXu+lWEWmaZBZwDCRIFAr3Mhwkud13stF6nkZviFyeyW7/ACLlFFFfYHzQUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFI7rGjO7BVUZLE4AHrQ7rGhd2CqoySTgAV5TrGr33xR1SXQvD0slv4bhfZfX8fBuyOscZ/u+pqoxuTKVvUTVtYvvinq0ui+HJJLfw1bybL3UE4N2w6xxn+76mtXU/hxbw2EcOmRLHHEuFRRjFdnoui2ehaZBY6fAkEEKBERBgKK0Kmoo1I8klp2HT5qcudPXueE3XhXULaQjYcZxyMVnaLp9zr8csmnozJDM0Dlh0Zete+ahFG1qxZATkc4rgfgoinw1rBKjP8AbVz29xXkvJcHK8rNfM9H+1cVFqN19w3w98OsSpPqfzAHIQjivR4II7aFY4lCqowAKkor0KNClQjy01ZHJVrVK0uao7hRRRWxkFYmveHINXhOVAkx1x1rbooA8Z1TwPe2kreSh29uMisj/hHtS3bRCTXvjKrDDAH61H9lgznylz9K8qrlGEqS5uW3oejTzLEwVr39Tx7SvAV/fSr9ozGnfAr0/QfD1rodoI7dAG7n1NawUKMKAPpS11YfB0MN/Cjbz6nPWxVav/EYUUUV1nMFFFFABRRRQAUUUUAFFFFABSMiupVhkHrS0UAcR4k8Dx3u6a1Xnrj0rgbzwpqFq5+QkD1Fe61WvYo2tZCyA/L6VxYjA4fE61I69+p10MXWoaQenY8B0qwudZuryCyRmeym8ibI4DYzxXcaB8OWeRZtTOQOdvQU74TIv9v+OBtHGrjHH+xXptZU8pwlCd1G/rqVLMsTWhZu3oeZeKvBtxb3cGq6BMLHWLMf6Nc4wsq/88pPVT+ldJ4J8aweK7Wa3uYGsNasT5d9p8n3om/vD1U9jXSzwJcQmOVQVNeceLvCV3HqMGtaDP8AZNasxi2uf4Zk/wCeMnqp6D0r1U01ZnnOLT5onpdFcx4L8aW/iuzliliNlq1mdl7YyH5om9R6qexrp6lpp2ZaaaujJ1vQYNXtyHUB8cHFeZat4Fu7SVjAh29sDIr2OkKhhhgD9a5q+GpYiPLVjc3o16lF3pux4GfD2pBtohJrU0zwJqN9Ivnfu0zzgV7J9lgznylz9KkVVUYUAfQVwQybBxlezfqztlmmJkrXt8jE8PeGbTQrYLCg3nlm7mtyiivVjFRXLFWR5spOTu9woooqhBRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUVWv9RtNLtGudQuI7eFerOcfh7n2pNqKuxpNuyLNFcFffFbT4nK6fZT3IHR3IjB/DrVaD4tR7/8ASdKcL6xygn9RXnvNMGpcrn+Z2rL8S1fk/I9GprusaF3YKqjJJOABWNovi7R9dRvsd0ElRdzwzfIygdTg9R7iuC1bWb/4o6tLofhuWS38NW8my+1FODdsOsUZ9PU16FKUKseaDuu5w1VKk+WS17BrOrX/AMUtXk0Hw9NJbeGrd9uoahHw12R1ijP931Nej6LotloWmw2WnwJBDEu1EQcKP896NE0Sy0LTIbLT4EhhiXaqqOgrRq5SvotiIxtq9wooqve31tp1q9zfTxwQp955GwBUNpK7NEm3ZBff8ejfUVwHwU/5FnWf+w1dfzFWNW+KGmbWh0+0muh/z0b5FP581yngbxdF4P0+8s5rV7lbq9luy6MFK7yPlweuMVwvNMHG8XPX5nV/Z2Kk1JQ/I9qorC0LxhpGvt5VncbLjGfs8w2v+Hr+FbtddOpCpHmg7o550505cs1ZhRRRWhAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAVDd/8ekn+7SXd5b2Fq9zezxwQoMtJI2AK4nVfijpaB4bC2muwRjzD8in6Z5/SuetiqNBXqysb0sPVrfw43KPwm/5GDxx/2GB/6AK9LrxPwf4sj8ManrdzLavcLq159qKowBi4xt5616bofjPR9fcQ2tx5VyRnyJhtY/TsfwqIZhha87U53f3fmN4HEUYXnH9fyN+o54EuIjHKuQakorrOc8y8XeEbuLUYda0CcWWuWY/0a5/gnXvDKO6nse1dN4L8aW/iyxkSWE2Wq2h2XthJ96F/Ueqnsa6K4t47mExyqCDXm/izwne2+pxa14dnWz1q1H7iduEuF/55S+oPr2q001ZmbTT5onptFcx4L8aW3i2xlSSFrHVrNvLvtPl4eB/6qexp+t+OtG0SVoJJjc3K8NDANxU+56Csa1SFFXqOyN6UJVnamrnSUV5vJ8Wx5n7rSTt/2puf5Vo6d8UdIupAl/DNYk8b2+dB9SOR+VcMMzwk5cqmdcsBiYq7gdvRUcE8VzAk1vIksTjKujAhh7EVJXop31Rw7BRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAUdY1W30XS5r27bCRrnA6sewFeH61rV94j1I3N65IB/dRA/LEPQD196634pao0l1bacjHYuZHHqegrjbOLIzXxme42Tqewi9Fv5s+oynCxUPavd/kJHZ5605rMY6V1HhvQBrVxL5sphtrdQ0rqOT7D8jzV59C0jUtJurrw/NcGS0BLxz87165H4V4dPCYirT9rG2t7K+rtvZHrTr0ac+R9LX00V9rnn09thWVhlWBB+h616n8MdVsZ9GGlwW8VrPZKAI4xhWT+8B9evvXn9xGCvFL4Zv20nxXY3CkhfNEbgd1bgj+v4V2ZTj50KqV/de6/U5cwwkatN6arY95ooor9DPiypqeowaVp815dNtiiUsff2rxDX9fvfE2pGe6YiFT+5gz8sY/x967D4qao22102NsKzGSQeoHT9a5Lw9pD6tqCWsckcRZS7SSHhVHU18jnWKqVKywtPy+bZ9JleHhCn7ef/DIox2eRzUjWQ9K7bWfDmmab4djvbC5kuZDKEMpYbW65wB9KpeG9Dj1m4ma7kaO1tk3ylep9h+VfPTwmIjiI0NOZ676fee1HEUXRdXovI4x4ngkV42ZWQ5VlOCp9Qa9Y8A+Ln1y3aw1Bgb6Bch/+eq+v19awrzw7o+raBdah4fa4SS0J3xTHO8AZ/DjpXIaHqDaP4jsr1CQI5lD47oThh+Rr1MHVq4CtHmd4y7bNf8AAODE06eLpSSVpR77p/8ABPf6KKK+7PkAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACq99ew6dYy3d0+yKJSzH2FWK86+KeqstrbabG2BK++THcL2/M/pXPiq6w9GVV9DfD0vbVY0+5xviPxHeeJtQMkzMtsjfuYM8KPU+9UYrPI5q54e0efWb8W1tsVsF2aQ4CqOpP511WteF7TR9Ehu7e8a6d32FgBsPrj/wDXX57Up4rExniN0t3/AJH2cJUKMo0dm9kcabIY6VVkgaJgyEgqcgg4IPqK6XS9Mm1a+FrblFbBZmc4CgdTWj4l8LWmk6HBeW94908soQnjZ0J4x9PWsKFDETpOul7q6mtWrRhNUm/eZu+APGEmsRnTdTfdeQrlJD1lX39xXcV8+6ZfPpGu2t7GSDDKpOO65wR+Wa+gVO5QR0IzX2+T4yWJotT3ifK5nho0aqlHZi1FcW8dzCY5VyCKlqnqt6un6ZPct0jQt+Qr2tjyjyHxsltY+LI59Nlkh1KCMxS3MD7S8ZHCPjrj9K5+G2L9aDLJe3slxO26SZy7E+pOa7vw34StLyG2n1S9EYuhmC3iOHYepPbpXwGIq4jM8RaHyvskfZUKdHA0fe+fmzjRZDHSopbTH3a6DVrWKx1e6toN3lwyFV3HJxW4uiaBYWtmNZlnnubzHFu/yx59cfWvNo4erUqSjdLl3bem9juqVacIRlZvm2SWvc5nwn4qufDN+qOzPYSN++h7L/tL6H+de2wzJcQpNCweORQysO4NeJ+M/D6eH9XEEEjSQyJ5kZf7wGcYPrXffDLUWvfCv2eVsvZymIf7vVf54/Cvqsor1adWWEq9Nj57MqNOpTWJp9TsaKKK+nPACiiigAooooAKKKKACiiigAooooAKKKKACiiigDxb4gbj4mLN02YH51k2bDaK7H4k6S/nLdxrnHJ+lcJbTbGwa+BzyhKOJk+j1PsMqqxlQS7aHf8Agma9jursWdvHdRMg86FpArHrgrnr3FbOmT2dnoOq3EGmS6dbhGH7/O52wRjB7ZOK8/sdSms51ntJmilXgMp7elWtQ1+/1NAt9dtKi8heAM+uBWGFzGOHoKDTco3ttbXz3XmupviMG61VyTSTtfe+nls/J9DPl+WIA9hWfbKZdWtkTq0yAf8AfQqa5uBggGtr4faM+qeJUunX/R7M72bHBf8AhH9a5cBh5Va0YLqzfGVo06cpvoezDoKWgUV+nnwJ478SNx8RRk9NhA/OsOyfC8EjIwcHqK7f4k6S0m26jXO3nivPLabY2DXwee0JRxLn0lr+h9dlNWMqCj2/4c9Fvf8Akmdl/wBdv6mneCWE1jq1kuPOliyg9eCP61yQ1W5ksUs3uGa2Q5WIngGkhvZLWZZraVopV6OpwRXCsfGOJp1eV2jFRf3WZ2PCuVCdO+rba++6Oy8P282keE9auNRie3VhtUSrtJIUjofc4rzBlMkyRp95mVRj1JxW1q3iDUNSjEd7eSTIpyEJwM+uBVjwNo76v4ngkZc29qwlkJ6Ej7o/Pn8K6IuOKlSw9FOy0131d2zKV8PGpWqtXeum2iske1RgrGoPJAANOoor9CPigooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACvIfiZuOuwsegRgPzFevV578SdJaeFbmNclTkVw5hRlWws4R3/wAtTswVRUsRGUtv89DgrCZo1Pluy7htbacZHpXdan/yTbSsdN/9TXnNvL5bc1u/21dT6bFYSzbraI5RMDj8fxr8+pVlRjUUvtRsvvR9lOm6jg19l3/BjVkePd5bMu4bTtOMj0rp9d4+G+k/9dR/6C1cmZVAovtcu59NisJZt1tCcxpgcHnv+JrPCVlThUhL7SsvvReIpucoSXR3/Ax7gF5dq8ljgfU19E2ylLWJG6qgB/KvEvBujvrXiaDcuYLdhLKe3HQfnXuIr6/IKMoUpVH1/Q+aziqpTjBdP1Cue8bBm8M3Kp1aMj9K6GqGtWn2zS5YwMnHFfRSjzRcX1PEi+VpngdqcOK7LwaS3iiyyScbgMnoNprkr61fT9QkiYEAN8v0q7p+oy2syzW0rRSr9116ivzNqWFxSc18L1+TPvE1XoNRfxLT5mz4h/5GO/8A+uxrd8P+HXs7UazqVrNMU+a3tI0Jdj2JHauQlu2uJmmncvI5yzHqTVyTxXrCrxqU4/Ef4U8NXw8cRKtVi3rdbfe/QK1Ks6MaVNpdHv8Ah6lTxZc6jdaq8+rwSW80gykTrjanYD2rsPhJGw0zUpD91p1A/Bef5155qWpXmrXSPdzPcygbELcnr0r2bwZo50Xwzb27jErZkk/3jXuZPTdXFyrK7Svq99TyczmqeGVPS77eRvUUUV9ifMBRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQBQ1bTI9TsmikHOODXj+veFrrTbpzHGSmemP5V7fUFzZQXcZWeMMPcVzYnC0sVDkqL/gHRQxFTDz5oM+ed8kRwwKn3FKZ3bgV7Pc+CNOuGJC7fwptt4G02B9xQH8K+elw8ubSenp/wT2VnWmsNfX/gHluj+G7/AFq4VY42jjJ5kYdvavZdA0S30PTI7a3XGBlj3J7k1ctbGCzQLBGFH0qxXt4PAUcIvc1b6nlYrGVMS/e0XYKKKK7zjKep6fHqNm8MgzkcH0ryDxD4UudOunaJCVJziva6huLSG6QrOgYe4rmxGGpYmHJURvQr1KE+aDPnktLC2GBU+hFBnduBXtF14K064YkLtz2xTLfwLpsL7iob8K+flw8ub3Z6en/BPZWdO2sNfX/gHlWleH9Q1m4VIY2VCeZGHAr2Tw3oEGg6asEK/N1dj1Y+pq/aafb2SBYI1X3xVmvZweX0cIrw1fc8zFY2piXaWi7BRRRXoHEFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAVV1Cxj1C0eGUZBHFWqKAPF/EfhK50+6d4UJUnPsa5smWBtrhlPuK+h7i1huYykyBgfUVg3fgvTrliQu3PtXh4vJqOIk5wfK39x62GzSrRjyyV1+J4sbhzwDV7S9C1DWLhUgiYKTy7DgV6tB4E02FwxUH8K3rPTbayQLBGq++K5qGQU4SvUlfyWhvVziclaEbeupm+GPDsGgaasUQzI3LuerGtyiivo4xjCKjFWSPElJyblJ6sKCMjBooqiTg/GXhAXga5tV568DpXmdxZXNlIVkRhjuBxX0OQGGCMisq+8OWF9kvEAx7gV5mNy2ji/elpLv/md+Fx1XDaLVdjwn7Q4pY47i7kCQxtIT2UV6+fAOnl8nH5VqWHhnT7DBjiBI9q8mHD0VL3p6eh6Ms5bXuw19TjvBXgdorhNQ1RQXXmOPsvv9a9IAwAB0FCqFGFGBS19FQw9PDw9nTVkeLWrTrT55vUKKKK3MQooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooA//9k=)

**Code:**

**** def bfs():

  visited = {node: False for node in G.nodes}

  Queue = [StartNode]

  visited[StartNode] = True

  Result = []

  while Queue:

    cur\_node = Queue.pop(0)

    Result.append(cur\_node)

    for node in G.neighbours(cur\_node):

      if not visited[node]:

        Queue.append(node)

        visited[node] = True

  print("Result : ", "->".join(Result))

if \_\_name\_\_ == '\_\_main\_\_':

  D = {

      '1':['2','3','4'],

      '2':['1','5','6'],

      '3':['1'],

      '4':['1','7','8'],

      '5':['2','9','10'],

      '6':['2'],

      '7':['4','11','12'],

      '8':['4'],

      '9':['5'],

      '10':['5']

  }

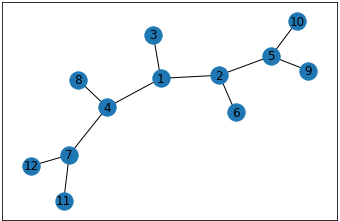
  G = nx.Graph(D)

  nx.draw\_networkx(G)

  plt.plot

  StartNode = '1'

**Output:**

****