jackson piper

RMIT  S3893796

ASsingment 2

# Task 1

## Task 1.1

![Graphical user interface, text, application

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4RDiRXhpZgAATU0AKgAAAAgABAE7AAIAAAAIAAAISodpAAQAAAABAAAIUpydAAEAAAAQAAAQyuocAAcAAAgMAAAAPgAAAAAc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAGphY2tzb24AAAWQAwACAAAAFAAAEKCQBAACAAAAFAAAELSSkQACAAAAAzM0AACSkgACAAAAAzM0AADqHAAHAAAIDAAACJQAAAAAHOoAAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAyMDIzOjAyOjA1IDE1OjE1OjAwADIwMjM6MDI6MDUgMTU6MTU6MDAAAABqAGEAYwBrAHMAbwBuAAAA/+ELGmh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC8APD94cGFja2V0IGJlZ2luPSfvu78nIGlkPSdXNU0wTXBDZWhpSHpyZVN6TlRjemtjOWQnPz4NCjx4OnhtcG1ldGEgeG1sbnM6eD0iYWRvYmU6bnM6bWV0YS8iPjxyZGY6UkRGIHhtbG5zOnJkZj0iaHR0cDovL3d3dy53My5vcmcvMTk5OS8wMi8yMi1yZGYtc3ludGF4LW5zIyI+PHJkZjpEZXNjcmlwdGlvbiByZGY6YWJvdXQ9InV1aWQ6ZmFmNWJkZDUtYmEzZC0xMWRhLWFkMzEtZDMzZDc1MTgyZjFiIiB4bWxuczpkYz0iaHR0cDovL3B1cmwub3JnL2RjL2VsZW1lbnRzLzEuMS8iLz48cmRmOkRlc2NyaXB0aW9uIHJkZjphYm91dD0idXVpZDpmYWY1YmRkNS1iYTNkLTExZGEtYWQzMS1kMzNkNzUxODJmMWIiIHhtbG5zOnhtcD0iaHR0cDovL25zLmFkb2JlLmNvbS94YXAvMS4wLyI+PHhtcDpDcmVhdGVEYXRlPjIwMjMtMDItMDVUMTU6MTU6MDAuMzQwPC94bXA6Q3JlYXRlRGF0ZT48L3JkZjpEZXNjcmlwdGlvbj48cmRmOkRlc2NyaXB0aW9uIHJkZjphYm91dD0idXVpZDpmYWY1YmRkNS1iYTNkLTExZGEtYWQzMS1kMzNkNzUxODJmMWIiIHhtbG5zOmRjPSJodHRwOi8vcHVybC5vcmcvZGMvZWxlbWVudHMvMS4xLyI+PGRjOmNyZWF0b3I+PHJkZjpTZXEgeG1sbnM6cmRmPSJodHRwOi8vd3d3LnczLm9yZy8xOTk5LzAyLzIyLXJkZi1zeW50YXgtbnMjIj48cmRmOmxpPmphY2tzb248L3JkZjpsaT48L3JkZjpTZXE+DQoJCQk8L2RjOmNyZWF0b3I+PC9yZGY6RGVzY3JpcHRpb24+PC9yZGY6UkRGPjwveDp4bXBtZXRhPg0KICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICA8P3hwYWNrZXQgZW5kPSd3Jz8+/9sAQwAHBQUGBQQHBgUGCAcHCAoRCwoJCQoVDxAMERgVGhkYFRgXGx4nIRsdJR0XGCIuIiUoKSssKxogLzMvKjInKisq/9sAQwEHCAgKCQoUCwsUKhwYHCoqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioqKioq/8AAEQgCqwGbAwEiAAIRAQMRAf/EAB8AAAEFAQEBAQEBAAAAAAAAAAABAgMEBQYHCAkKC//EALUQAAIBAwMCBAMFBQQEAAABfQECAwAEEQUSITFBBhNRYQcicRQygZGhCCNCscEVUtHwJDNicoIJChYXGBkaJSYnKCkqNDU2Nzg5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6g4SFhoeIiYqSk5SVlpeYmZqio6Slpqeoqaqys7S1tre4ubrCw8TFxsfIycrS09TV1tfY2drh4uPk5ebn6Onq8fLz9PX29/j5+v/EAB8BAAMBAQEBAQEBAQEAAAAAAAABAgMEBQYHCAkKC//EALURAAIBAgQEAwQHBQQEAAECdwABAgMRBAUhMQYSQVEHYXETIjKBCBRCkaGxwQkjM1LwFWJy0QoWJDThJfEXGBkaJicoKSo1Njc4OTpDREVGR0hJSlNUVVZXWFlaY2RlZmdoaWpzdHV2d3h5eoKDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uLj5OXm5+jp6vLz9PX29/j5+v/aAAwDAQACEQMRAD8A+jLT/jzh/wCua/yrP1rX49HktreOzutRvrst5FnZhPMdVwXbLsqKoyMlmHJAGSQK0LT/AI84f+ua/wAqxte03VDq1lrOgraz3dpFLA9pdytFHPHIUJ/eKrFWDRqR8pB5BxkEIZY0fxHZaxG6gSWd3EzpNY3e1JomTG7IBIIG5DuUlSGUgnIp/wDwkuhfb7ax/trTvtd3EJre3+1J5k0ZBIdFzllwCcjjg1w+iWGvahfSeJbGzgTU7szxX9jqKXFmtsXWBV8t2iJm2LAoJACuSSGXpUWmfDXUtPurdbqG31CEi0kkca5eWywywxRx5FuimOYAxBgW2k9D0Bp9Pu+/+vl5i0/r+v67HoFlr+j6lIE07VrG7diwCwXKOSQFYjg9gyk+zD1FW7a5gvbWO5s547iCVQ8csThldT0II4IriNX8L3lt8PdA0fTsxanYmC2Sazj3LFuQxTP2woR5GBP8QXgniu3tbaKys4bW2QRwwRrHGg6KoGAPyFPTX+v66C7Bd/8AHnN/1zb+VUPJi/55p/3yKv3f/HnN/wBc2/lVOkMzJdV0qC11C4ldFi00lbtvKJ8shA54xz8rA8Z61bgNvcxeZHDhdxX95CUPBIPDAHHHB6Ecjg1xGteB5dTtfFk5W/8Atd7IzWUcOqTRRSj7PGo3RrIIz8ysDvHOOeMVlDwfqieILC5fQjczR3TMJro28tvBGbyWUuvzrNFLtKncm5WBAZTjhrp52/IH1sek2VxZajbmez2SRiR4i3l4+ZGKMOR2ZSKseTF/zzT/AL5FeVHwS1oGim8CxajaR3F9vtoTaqtw8sm6CcBnUHYmUy2GTd8oIya1tK8EG38O64fE3lf2jNCqHVmw7gJbQgyKTyAJIy2OMlQSOlTdWbfRDtrZHf8Akxf880/75FNaNEkjKIqnd2GOxrC8EwXJ0AapqUax6hqz/bbhVBG3coCJzz8qKi846HgVvyffi/3v6Gqas7MlO+o+iiikMKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooApwarqMjywWVhayR2pSIvNdtGWJiR+gjbj5wOvarCXeuPnGm6fx66g//AMZrm9T1248N6NrmqWun/b/s8ySOhmESqgtYSSWwT0GAADkkZwMkdnbHKk+oFAFLz9d/6B2nf+DB/wD4zR5+u/8AQO07/wAGD/8AxmuN034mQ3V1rp1D7JYWui+eZ43vma9VYiBva38sYRhyGDtnK+vFW6+Jrar4H1bW/Cc0KXGkOPtEN4EuVYbQ2A0ExXncOQzYwQRnoLXX5/IOtjvPP13/AKB2nf8Agwf/AOM0efrv/QO07/wYP/8AGa5fX/iXovhrXrXSNSnk+0ziIttljXyhI+xCVZw75IOfLVyAMnAxmzD4zkvjqR0rRtUvIbB5IvtSmFI55YzhkTfKrHByMkBflOD0ym7K/wDWgLX+u5uySa5JEyNp2n4YEHGoP/8AGar+Trn/AD6Wf/gwb/4xWZ4G8S6j4n8I2OqalYTWE1xCjnLJslyoO5AruQvs2D7VBqvjG/0zV71P7Pik0zTxCbu6N6VlQSHqsXl7WC9TlwcZwCeDTVnZivpc2vJ1z/n0s/8AwYN/8Yo8nXP+fSz/APBg3/xiucHxU0Fr7VLVJ5JG02GaZ/KmhkaQRcSARrIZFIPHzque2aTVPH19b6as1hoGptcrfwW01tMYFZFkZMN/rgPmD4Xk4b7wGDS3t/W+gzpPJ1z/AJ9LP/wYN/8AGKPJ1z/n0s//AAYN/wDGKwp/HVxa6jcWt1pVxbGO0inXzp13F2bDRts3KCBg8M2efSo7j4naVaaxqWmzpc/aNPjeV1ingmZwrKpwiSs6n5xgOqk/XijrYDofJ1z/AJ9LP/wYN/8AGKDb62SCbSz4OR/xMG/+MVy0vxZ0m2sZbi9t72ykSRI1gu5beBpGbfnDvKIxgxSDlhnb8u7K56zStXh1nSbXUrCZpLa6jEsbbs5BHscflQFxnk65/wA+ln/4MG/+MUeTrn/PpZ/+DBv/AIxTtX1ddH0e61G482SO2iMhSM/M+OijJxkngfWso+JNYsLOE6zo2b+5l2W1jpd6Lh5AF3MS0qxKuADnnHTBJIFAGn5Ouf8APpZ/+DBv/jFHk65/z6Wf/gwb/wCMVm2vjexu7Z5olu9qQ28rBlAI86RowuM/eVlIb9M1Xj8d/apriKy0fVpWjW48hyIlW5eF9kipukB4JzltoIzg9qTdtwWpteTrn/PpZ/8Agwb/AOMUeTrn/PpZ/wDgwb/4xWDpnjHVL7wPbatNpM9rf3KQJBFPJGI55JdoDLsdyseWz82GwDxT/EHjC80hktLSzmvrqN7Zbq4jCrBbiWUJlg0gbJG4gKGxxnjrTTTt8hX0Nvydc/59LP8A8GDf/GKPJ1z/AJ9LP/wYN/8AGK5wfFTQWvtUtUnkkbTYZpn8qaGRpBFxIBGshkUg8fOq57ZpNU8fX1vpqzWGgam1yt/BbTW0xgVkWRkw3+uA+YPheThvvAYNLe39b6DOk8nXP+fSz/8ABg3/AMYo8nXP+fSz/wDBg3/xisi48cC0v47O40jVkl2QSXJxEVtBM5RN5EmD8wOQm716VVuPidpVprGpabOlz9o0+N5XWKeCZnCsqnCJKzqfnGA6qT9eKP6+4DofJ1z/AJ9LP/wYN/8AGKPJ1z/n0s//AAYN/wDGK5aX4s6TbWMtxe297ZSJIkawXctvA0jNvzh3lEYwYpBywzt+Xdlc7MPidrv+xr6ydZtJ1VdqyhvnjcqWQ8EgqcFeO+OSDwAaHk65/wA+ln/4MG/+MUeTrn/PpZ/+DBv/AIxU99qKadp9xe3cxSC2iaWRieiqMk/kK4Wb4qT23hq31C70yKzun1AWFxHdX7Jb2bFN6tLMIztBUp/B1YAnvR1t/WugdL/13Oz8nXP+fSz/APBg3/xijydc/wCfSz/8GDf/ABiptPvZLzTba5aSImaJZCbacyxnIz8j4G5fQ4GR2rlbb4gzQwi88Q2cOnadMlxJb3MV6ZiRCTuEimNNhKgkYLDg5I4yPR2YLXY6Tydc/wCfSz/8GDf/ABijydc/59LP/wAGDf8Axiucsfidp2p2EU+mW17fTy3RtFtLSa3nfzPLMn30lMQG1Sc7+O+Kevjm/uPEWmWun6FqFzY31k1wZg0CshDRjkNMCAu8hhgnONueaOtv62uHS50Hk65/z6Wf/gwb/wCMUeTrn/PpZ/8Agwb/AOMVhaf47a8DefYyQOktyrJ9oH3IgSrgttGGHqQAQQTxmqUPxb0i40z7Zb21/OBO0Dx20kFwU2oHZt0crIQFbPDE8YxnAJuB1Xk65/z6Wf8A4MG/+MUeTrn/AD6Wf/gwb/4xXMt8V9DjvLC1uHmt57whWinngR4CZGjAZDLuf51Yfuw+MZOBir9v4tvZILzVLixig0K380Jcm7Zriby2K5EIjxhmBx8+SMcDOAAa/k65/wA+ln/4MG/+MUeTrn/PpZ/+DBv/AIxWbY+Mo7q+isbmx1DT72S5+zm2ufLLIfKaUMSjspUqpwQScjBAqsfiDam4gjhsNUmSSOCWWZETZbpM5RC+XBPzKchQxHXGKANvydc/59LP/wAGDf8Axijydc/59LP/AMGDf/GKyPD3inVNX1vVbK70S9s4bO5MSXDyQ7QBGjYbbKzFjuJBC4wRnByK7KM5jXPoKOiYdbGJ5Ouf8+ln/wCDBv8A4xR5Ouf8+ln/AODBv/jFbtFAGF5Ouf8APpZ/+DBv/jFHk65/z6Wf/gwb/wCMVu0UAYXk65/z6Wf/AIMG/wDjFHk65/z6Wf8A4MG/+MVu0UAYXk65/wA+ln/4MG/+MUeTrn/PpZ/+DBv/AIxW7RQBheTrn/PpZ/8Agwb/AOMUeTrn/PpZ/wDgwb/4xW7RQBheTrn/AD6Wf/gwb/4xR5Ouf8+ln/4MG/8AjFbtFAHFXmgr4m0zWdKl1C7sYbi4jWZ7QR73Q2sQK/vEYAHPUAHjrXU6ZA9rZpBLcy3bxqFaeYIHkPqQiqufoAK4TxNqek6Xo+oS65qNxYxSX8McQt742jTyG1i2oZQVKL/ETuUfLycZB67wnIZPC+nM2pQ6q4to1e+hcOlwwXDOGHByQeaFswe6OdvPAFjq2oTXevajf6qXtprWJLjyUW3jlI3bDHGhz8owWLEY9eafqHgyXVPDMuiX/ifWZoJjiSYraiVkxjYSIMY75xuz3xxXI6dc61a6P4118SylrN9UFpdSavPNsaN22KLR18lQu3ggk8Yxyavarqet6HZ6Q2reK3t9P1a4BuNUe2t4jYDyCwjDMpj2tIMAupIHy5JINJP3b+S/HYbVn83+FrnTJ4SMWrRalBr2qRXflRw3Uii3xeqjEr5imLAI3MMoEOD9Km0vwxFo+oXktnqN99jvJZJn05zG0CSSHLsp2eYMnJxv25Y4FeSzeO/GZt4ribVZLRxChMH2OIB/3Jk3kMpIL7QSM8Bmxjgj1bxzcG18EapOLl7XZFkzxymJoxuGSHBBXjPIIxTel/mSnfT0LHhvw+nhnSU023v7y7tYQFt0uvLJgQDARSiKSB6tk+9Vr/whb6jrU19PqN+sFx5X2iwRoxDOY+V3HZ5mM9QHAOMEEZB4i98R3Wn2VwvhnXE/sKS+jih1i+1MtHF+6ZnVbqWOYFd6qMsGGWZAQcAWpPFepDVrSCXxNZi6NnYzQWNiYpl1J5JHWQoxTeybVBygXb944HFPVv7h7L+u9jotR8HXD6JrFjpus3giv4J0hsrgxGCB5cksGEfmY3EnBZgM4xgAC1/wiEL6Rc2tzqmoT3VzNFO+oO0XnLJGVMZUBBGAuwcbMHnIJJzxE/jfWV1jxF9k1JWhtrHUZIraSaGWS0lgICFo0gUxg8kB5JCy88VseLtM1O28Lpc6j4svBBHqFpcPOLe2j8hPOj3EkxkbEPzAkZHO4sKS2T72/P8Apjd7/eb154Ns9RtyuoXt7cTloHNyTGshaInB+VAo3BmVsDBBOMVVb4e6e80zSahqDxSGcxwbowkHnSCSTbhATlgDlixHauV13xLrVtcTSaL4pa6sbe2R4pVht5Bc/unkLl1TByUA+UAYLY5IKuPi/wAQGXxJL/bOlxy2ltdtHp32tHuLZo2Ijf7P5CuAQASWkcHcCMAin1+8ndfcdY3gSzSY3FlqWo2V3vV0uYXjLRkGXIAZGUgiZwQwPYjBGauPo2sTeIdGkj1KVrLT4pDcu0wEl67LtAeNUVMD724YwRgKM5rkPEcepDRbyPUvFF4sOm6tZSPeeVbIUjZoWJbMW0KhJYHHH8RYCvRvD8sU2m28lvqP9qRNECl7ujbzx/ezGAhz/sgCktvn+n9fcAmp6NHq+l3On38Re3uYzHIofacH0I5B96x28GXctrCs/iLV5bu2lMlvfMLYSw5XaygCEIwIJzuVj3yCBXX0UDOJk+HNoZYDBe6jbRRxwxywwzIFufKkMiM5Kls7mYnaQGzyDWnZeFYLGSB4zM3kPcsodlIPnvvfPHY9PbrmujooeqsBxq+C7m08Mf2VZapdTNbtHJYPeCMi3MRBjT92qlk+UA7iWIJ5p2o+CF1fUFvru7vbZpBA1zaWs6+TK8Tb0JJXccHjggEAZHFdhRQBxGo+Br19E1ix03V7wRX8E6Q2Vw0RggeXJLBhH5mNxJwWYDOMYAAs/wDCEB9IubW51LUJ7q5minfUHaLzlkjKmMqAgjAXYONmDzkEk566igDl/wDhEFkMz3d3d3M08VvHLNIYwz+S7OrYVQoJLHOABjoBWe3w2tHmmaS+1B4pDOY4N8QSDzpBJJtwgJywByxYjtXcUUdbh0scW3w9t0mNxZX+o2V3vV0uYXiLRkGXIAZGUgiZwQwPYjBGa0JdCv57vS1nuTPbWJ82SSXb5txKFKruCqqgDcWOAOQOAK6SigDD13w+viDQ7vSrxpo7e7j8uUwOFYoeoB5xkcH2J6VhwfDpLBr46NretaeL90ef/SI7osVTZ965SRuRjv8AwjGBxXcUUrDuYeh+H4PD2hWekabGy2tnEsUYZgTgdyfU9axYPhzapDLDeX+o30DRzRQRTSxqtqspJfy/LRTnnhmLEY4Iyc9tRTeruxLTY4e/8F6zcjTFTxLqLvaXjTteSraiZFMLptQCDYeWH3lJwTz0q8fBiRtpbafe31g+mxNCjwvG5mjYqWWTzFbOSgORhuuCM11VFAHF3fw5029XErXQ3WtxavtkX94kxJOeOSpZtvpuOc0wfDm2fzHvNQ1G7nmdnknleIM5MYj6KgUYVRwAK7eigNzj7XwN/Z94lxperalZZYmeONoWS4HmvJhg8bY5kYZTacEZJwCBPAkaQ3lmNR1A6XdiTOm74vKiZzuLI2zzAdxLAbyATwMYA7CigDjH8A+ZGskmsao2orci4/tLdAJsiMxhcCPy9uxmGNnfOc81LaeBLOztDbxSXbIYLaDMkqs22By6HJHJJY5J6+1ddRQBz1r4bks9eu9St767WO8YPNZfujCZAipvB2bwdqLwGx7V0CAiNQeoApaKACiiigAooooAKKKKACiiigAooooAKKKKAOSj1a20ZNSubxLt4zdxri1s5blgfssJyViVmA464x+ddHp1zDe2kd1ayLLBMiyRyL0ZSMgj8K5K+s77ULDVLXT7WO5aS7i3q+qTWBCi2hORLCjP1xxwCM5PY9H4csZdM0GzsbmVJpbaBImkSMIrFRjhQAAPYAULqD6GNdeMtBstGtdVub4pZXYZoZfJkO4KpY8BcjhT1FJqPjLQ9Lnkgu7mYzRzx27RQWk0zmR0MiqFRCWyqk8ZxjmvPrv4Ua/cWMlv9tsiJYZ423XEuEOGSHbhP7jtu9D0zWhqnw01EXk0ulSieE6nb3qJdazdRzMsdu8bA3ADyKdzgjBPHHHSlrp8vz1Dq16/lp+J1s3jrQLbUIbK5ubmCeVIXxLYTosQlYrH5jFNsZZgQA5U5q1pvifTNX1K5sdPa7lktpJIpZDYzpCHRtrKJWQISDxgMa5C9+H+q3OuLrMUkCTQxaesdpNqE88UhhkdpVlZ1/ecOCkjKWDLn5e+n4S8LanoXiHVLi8jia3u7u5uI5otXuHGJJd6qbVkESnB5YEn8zVK1/v/AEt+v3A9tPL/AIJ1Oo6pYaPZtd6tfW1jbKQDNczLGgJ6DcxArJ03XfDtzLY6ol5b2t3rtvH9mjuLhVluEXJUKm7BxvP3c9fpUniLTtTurnTL3RRaSXFjM7GK8kZEYNGybgVVjuG7I45GRkZzXLW3gDUbW40w3CQahHFa20FwF1e6slRoWY7hHGCsoO7IV8YIxk54S3B7HYS+KdAhN2JNa04PZRmS5T7XHuhUHGWGflGeMnHPFUtM8eeG9Xs9OuLHVIJRqMiwxJG4kZJSm/y32EhGwOhI547isjwpoeqG7M1/Z2thaW91qBiKsxnuPOnY7mUooQYAIwX3fKcjHMlp4V1e50HSdM1YWNv/AGWnlRz207SltsW1JQrRrtYNhtuSBjqaFtd+X/B/QHvb+v6/4Y6AeKNCNxaW7avZRXF7/wAe0E06xyTclflRiGPII4FPg8R6JdXhtLbWNPmuV3ZhjukZxtALfKDngEE+gIriZvA/iS5TTIrm7t2jt0t2kWPUbiKKKVJzJIRCqhZgw2gGQ/Lt4FMl+GV/LbtEs9lCXjlVpELg/MlwB0AP3pgTyD97nPU6feHW3oegabqun6zZi70i/tr+2LFRNazLKhI6jcpIzVW98Wabo2uWml3ZuxeXvECx2E8qv6/OiFRjGTk8Dk4HNVPCWjT6RaXP22zW2uJ5Q7ldXuNQ8zCgAmSdVYdMYHHFQa7peuXfjLQtR062097LTTIZTPePHI3mLsO1REw4HIywyeOOtN7i1sbGm+L9P1fUJ7PTmmne3Z0klFnMINyNtZRMV8tiDxgMTwfQ1JqfinT9GutPttTuY7eXUp/s9qGRiJJMZ25HA6d8elcroXhTU9N8cT6pDFbaRpkwmaeys9RmuEu5XZcSmJ41SJgFJJTJJPPqbnjTwlJ4rOnokyQpamZzJuIdHMZEbpgdVfa3PpU/ZT+/+vyH1aLh+JPh0Swp/aGfOCHettKUiDuUQyOF2xbmBA3lc44qxp/jjTdT1yfSLQXhvLc/vlk0y5jWPgkZdkCjODjnntmuA074b+IrXQp9JurnTZI9Wht01G4SWQPA0bksYl2fOGUjGSm05PPSu50zRriy8Wa5qkrxmDUFtxEqkll8tGDbuMd+ME0/UVzQ1PxTp+jXWn22p3MdvLqU/wBntQyMRJJjO3I4HTvj0qknxA0KSyu7tL9TBZxpJO/kSfIrsVU4xk5KkcelZ3jTwlJ4rOnokyQpamZzJuIdHMZEbpgdVfa3PpXJ2Pw48SW+jvptxPpkiala2sGoXCzSBoWild3MSeXh9yvgZKYPrQv6/r+ugO/9f1/Vj0dPF2mvpWo6ktyptNNeaO7k8p/3bRZ8wYxk4wegOe2a0bTUVvIIJ4Crwzqro2CMqRkHn2NefQeFfEUeg+KtDeLTPs2sSX8tvdC8k3qZ92xXj8rAAzyQx9ga6nwrFq1rpVtaa3a2dvLbJHEhtLt51cKoG4lo02njpg/WharXsv8AglS0end/8A6aiiigQUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFAHnmt+LLXwta6gZLywtby7ulS1a/mEcQItYSWbJGQB2BySQOM5HW+GNWi1zw9Z6nbzwTrcwI5e3cMm7HzAEE9Dkde1VNKjWWTVo5BlHnRWHqDbQ1r6fbxWlqlvbrsihRY0XJOFAwBk+1C638gfSx5NdfEvU4tDv9XE1hDutLy507Tn06eRnWBmXL3IcRk5XJQAEAgZ7m1pXjfxDq81tp1q2mi4ur6aCLUJbGaNAkUIdw1q0gkVw524ZxwN2MYz0Vx8O/DF1PcSz2ErC5WZHiF5OIgJf9btjD7ELdSVAJPPWrF34K0G8uJ55bSVJ5p1uGlgu5oXWQR+XuRkcFCU+U7cbh1zSW3y/UH5ef8AX9ficfZfE3VbzwzrOo/Y7OObTrW2dU2uVaR5XjkzyCVymV6HnkmrPhDx/qeveKzps8mmXUbTXscsFmjLNYLBLsjaUmRshx0+VOemRnHSP4E8OPPbSjTvL+yxxRJFFPIkTLExaMPGrBZNrEkbwcE1q6XpNlo1o1tpsPkwvNJOy72bLyMXc5JJ5ZicdKrrf1FbS3oc9488S6j4e/sePSzEr6hdtA7vp816VAheT5YomVmJKAcdASe1Ylp488R3MeiRLY2Mk/iC0hksZYVd4oZBzciQhuQq/MACD1XkjNdrrXh3TvEC2w1NJy1pKZYJLe6lt3jcqVJDxsrfdYjr3pLXw3pFkulra2axLpKMlkFdsRBl2t3+bI7nPr1pLzG/ITxNqNzpPhm9vbHyvtMKAx+chZAxIGSAQSOemR9a5u98a6noTXGnahZxapqkc8aRPZW1wkUqvGXyUjWeRSAjDgOD8pO0Hjr9S0621fTZ7C/RpLeddsirIyEj2ZSCD7gg1l/8IXof9ni0+z3A/f8A2j7QL6cXJk27d/n7/NztO3733fl6cUtQMw+N71riPytBdLeO2tri8a5nMMsCzOyYERTLMpUkhtvHvxVQeI/FkUHimaay0tU0+ZktnN28mxvKjZVKCJNyndkneCCSOQAa2P8AhCNOfXxqN1JdXKRwQQxW8t1My5iZ2DyZciY5YEFwSCuc5qy3h/RL7UtQuR5kk0/7m9ijvZRGW2L9+IPsD7QnON2Mc4p6Xfz/AEt/X5h/wDDuPHtxb2MsyWdvLcLLFAloWm3mUoxlQeTFKzFSjcBMYUkniqU3xSuRbw3Nr4fElu1pHcyPJeeWybozIV27CThVbrjJ2jAySvU3Xg/RLyaeaS1ljluLgXUklvdSwsZAmzcGRgRlSQQMA5Oc5pn/AAhPh4Wv2cacFh8oQhFlcAIEKAfe/usRQvMT8ipofjKXW/EVxYLpF1FaIZFivGhnCsY22ncWiWMZOduyR8gc46V3Ef8Aqk/3RXOWPh3TtN1Ka+sVuYpJizPELyYwbmO5mEJby1JPJIUHJPqa3UuUVFBDcDFHRD6ssUVD9qT0b8qQ3cagk5AHJJ7UAT0VVh1G3ubeOe3cSwyKHSSMhldTyCCDyKk+1J6N+VAE1FQ/ak9G/Kj7Uno35UATUVD9qT0b8qPtSejflQBNRUP2pPRvyo+1J6N+VAE1FVY9StpnlSGRZGhfZIFYEo2AcHng4IOPQipPtSejflQBNRUP2pPRvyo+1J6N+VAE1FQfa4/Rvyo+1x+jflQBPRUH2uP0b8qPtcfo35UAT0VB9rj9G/Kj7XH6N+VAE9FQfa4/Rvyo+1x+jflQBPRUH2uP0b8qPtcfo35UAT0VB9rj9G/Kj7XH6N+VAE9FQfa4/Rvyo+1x+jflQBPRUH2uP0b8qPtcfo35UAT0VB9rj9G/Kj7XH6N+VAE9FQfa4/Rvyo+1x+jflQBPRUH2uP0b8qPtcfo35UAeceLdLt9TsJDdLHIlrq0Uwhm0SXVI5T9iVMPDEQ2Pnzu6AgV2/hdZk8N2C3NhFp0y20YezhUKkBC/cUAkADsATjpWOurJpLX7fZri8nnvI4oLW2CmSZvssTYG4qowFJJZgOOvSul0+V57VJZYJLZ3RWaGUqWjJH3TtJXI6cEj3NC2YPVo8B1Xw5qU3h+7isdEvk1tbLU01m4NnJm+3k+UokxifJ2lQpbaBjjobK+HIdN1C3tfEHhmS6sbbV5pbi3sdFllsmRrPEbwwKr7cnAblsOCSRkV7hb3unXWp3mnwSb7qyEZuI9rDZvBK8ng5APTNW/s8X939TS6W8rfjcN/xPBtG0DUrXxRoD+I9NEkkWl28aS32hzamYmFzKyoJkO2GRUKZdiQOD2rT+H/AIfvdI8bC9v9La2W8OpeXPb2TxMx+1kgXTc78ptaNjtGNwweDXs32eL+7+po+zxf3f1NUnb8fxE9V934HmPxW019RXw9/oS3dvFqDtP5mky6lHGpt5QGeCP5mG4gA54JB7ViaX4NvJYfCEU1pd2ltf2UcOuW0iGTeLdd8IkbjaSflII+6dvavafs8X939TR9ni/u/qaS0G9fyOT8cW5uvA+pwLbPdB4cGCOIys43DICAEtxngA1w97Z3sVlcHwza32ieHbi+jxFBpd0joBE251t4HinRGkCD5duSCxBViT7J9ni/u/qaPs8X939TSA8hafUH163tP7R129v4rGwktfIgubeFnMsnmPOh+VMovKynJAOAWp1z4dtoZvF+nm21ye4vSzQrJLeT280TQxA8kmItuDDB+YAYHAFesLYWq3DzrboJpFVXkA+ZgM4BPUgZOPqak+zxf3f1NP8A4P4/8MHp5fgeQalDrUFveWbW+oRBb6C2a+iiu5GaJIW2ygWrxu+75FbDBVZjnpWfNaeLrjTobiabxAl3Fp8Q8uKSZAZBAzHKqeW8xUzyTxjJDNu9v+zxf3f1NH2eL+7+poWgmr6Hj4g8Tz3HiEfb9RN/JDcotkLG7iRl34jMdw0ptw2zG3y1Qkn5uQavyR6JDpVmvh/RdV0nRftJ/tGPTdLurK4Y+WdhIjRZXG7ALJntk4zXqP2eL+7+po+zxf3f1NLpYfW55RDe+IrGOK1vINannurWxEDxxSOE2zv5hkcfKjiMpvyQW7bquabomoXN2W1C51oi+OoR3CveTxoiCf8Ac7QGAj+UcMuCQTyRXpf2eL+7+po+zxf3f1NElzJ3BaHDfDi2gs/CNraxxarDcQxRx3UepfafklCAME87jbkf8s/k9K5Hxno015401hrPRbuXWJ47AaTqMdk+23ZXYyN9o27YwB94bgWHGDnFez/Z4v7v6mj7PF/d/U1TbcuZitpY8T0bQozc+L4dStZbCW8m1AG7tfDdyLzynlOGS7AKyAgghFUkjHpVax026XSLG21Dw0snhuy1cfa0sNDltTqMf2fCzS2RUu22Xbngg7QcYWvdfs8X939TR9ni/u/qaS0SXkl939f1oU9W36/icrBrOl6a+haXY2E9tBqSulpHHZmFIAib9rIwVo+AcDb+VN8c25uvBGqQC2e63xYMEcRlaQbhkBACW4zwAc10h0nTzqIvzZwG8WIwi52DzBGTnZu67c846Zqx9ni/u/qaHqJaHjd7Z3sVlcHwza32ieHbi+jxFBpd0joBE251t4HinRGkCD5duSCxBViTM0+oPr1vaf2jrt7fxWNhJa+RBc28LOZZPMedD8qZReVlOSAcAtXr32eL+7+pqNbC1W4edbdBNIqq8gHzMBnAJ6kDJx9TT6h0/rueT3Ph22hm8X6ebbXJ7i9LNCskt5PbzRNDEDySYi24MMH5gBgcAUzUodagt7yza31CILfQWzX0UV3IzRJC22UC1eN33fIrYYKrMc9K9f8As8X939TR9ni/u/qam2iXp+A+t/61PEJrTxdcadDcTTeIEu4tPiHlxSTIDIIGY5VTy3mKmeSeMZIZt3SeFV1k+NL+TVtQvt5acPZyaddrCVEn7srM0jW/C4/1aqTk7uQa9L+zxf3f1NH2eL+7+pqr639fxJtpYoUVe+zRf3f1NH2aL+7+ppDKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAKNFXvs0X939TR9mi/u/qaAOF1TwtH4oW5R/sbSWl/HKiX9obm3fNpEpDxb03DDZHPBAPOK6vw7pg0bQ7XTllMwtolj3lduceg/hHoOwwO1czqTSQaVrN3Hqt9pv2e4jfNikLSTH7NCFjAljcZZiAMAHOOa6fw9Df2+h2kWsXP2q/WFBcTbVG+THzHCgDr6AfShdQe6IdM/tqTxJq8t/uj0r91HYwyCPduUN5kgKEnY2UwGO7KtwBjOzRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQByH23R9Pj1G68Q3Nja2sV9CyzX0iIiSC3hKkF+A2eneumsZ4rq3We2lSaGVVeOSNgyupGQQRwQR3rgtestSuw8mk291LLb6mkjSWDxLcwg2SLuj85ljPLYIfPyk4GcEdZ4Rtbix8Lafa3sCW1xDbRpJDGxYIQOmSzE/8AfTc9z1oWzB7o2qKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKAMDRv8Aj51P/r5j/wDSaGtmD+L8KxtG/wCPnU/+vmP/ANJoa2YP4vwoAmooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAwNG/4+dT/AOvmP/0mhrZg/i/CsbRv+PnU/wDr5j/9Joa2YP4vwoAmooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAwNG/wCPnU/+vmP/ANJoa2YP4vwrG0b/AI+dT/6+Y/8A0mhrZg/i/CgCaiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigDA0b/j51P8A6+Y//SaGtmD+L8KxtG/4+dT/AOvmP/0mhrZg/i/CgCaiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigDA0b/AI+dT/6+Y/8A0mhrZg/i/CsbRv8Aj51P/r5j/wDSaGtmD+L8KAJqKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKAMDRv+PnU/wDr5j/9Joa2YP4vwrG0b/j51P8A6+Y//SaGtmD+L8KAJqKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKAMDRv8Aj51P/r5j/wDSaGtmD+L8KxtG/wCPnU/+vmP/ANJoa2YP4vwoAmooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAwNG/4+dT/AOvmP/0mhrZg/i/CsbRv+PnU/wDr5j/9Joa2YP4vwoAmooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAwNG/wCPnU/+vmP/ANJoa2YP4vwrG0b/AI+dT/6+Y/8A0mhrZg/i/CgCaiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigDA0b/j51P8A6+Y//SaGtmD+L8KxtG/4+dT/AOvmP/0mhrZg/i/CgCaiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigDA0b/AI+dT/6+Y/8A0mhrZg/i/Cucs7+PT7y/W5hu/wB7LHIjR2csisv2eIZBVSOqkfhWhF4hsVzujvx/3Drj/wCIoA2aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKANWisr/hI7D+5f/wDguuP/AIij/hI7D+5f/wDguuP/AIigDVorK/4SOw/uX/8A4Lrj/wCIo/4SOw/uX/8A4Lrj/wCIoA1aKyv+EjsP7l//AOC64/8AiKP+EjsP7l//AOC64/8AiKAHwJLLEvlqmFVR8zEfwg+nvUn2a4/uxf8AfZ/wp+nf6g/8B/8AQFqt4j1aXRtFe5tYFuLl5YreCN22q0kkixruPZQWBPfAOKAJvs1x/di/77P+FH2a4/uxf99n/CuZg8YT6ddvY6hfWHiS+a5FqlvoEIjlhl2O5SVJJ2CcRnDFl7ggYzVPW/iDPH4c1T+x7K+u9QtoLiR57eCJI7MLLJGjuJJcNzG3C7iQpO0ZAoA7L7Ncf3Yv++z/AIUfZrj+7F/32f8ACo73XLXTb21t70PGLiGWRZyB5Y8tQzKTnOdu5hxjCNzxzyd58WdI0qHzNTjmjlllxDaTNb2siKIYpG3NNOqEjzlGAwbJwFIUtQC1Ow+zXH92L/vs/wCFH2a4/uxf99n/AArGtfH+jXr2v2cXDR3UqRxymMBNrxJKshOfuHzETPXc2MdTW9pt/HqmlWt/AjpFdQpMiyABgrAEZAzzg07MCCSGeOJnZY8KCThz/hRug/56P/36ard3/wAec3/XNv5VTpALug/56P8A9+mo3Qf89H/79NXFS+PtnjK40Pd4fg8i7jttt7rfk3Uu5UbKQeUd338AbuSO1aC+P/DTRSyi/cRxFMO1rMqyhn8tWiJTEqliBuTcORzyKN0mGx0u6D/no/8A36ajdB/z0f8A79NXMy/EHw5BO0EtzdrMuMx/2dcbt2wSbMeXnfsYNs+9jJxwca/9s2Hk2EwuA0Wosq2siqSshZC45AwMqDgnGenUgUAX90H/AD0f/v01G6D/AJ6P/wB+mrnT400hZrgGcyRwlUVYIJpZpHLyoVWJYyWwYXOV3cKxwAMmZPGOgvCJBfbQfKyHhkVl8x2jUFSuQdyOCDyu07sYoDY3N0H/AD0f/v01OjWKV9iSNuxnBjI4/Gq1reQXsLS2r70WR4icEfMjFWHPowI/CrNt/wAfi/8AXNv5rQBN9k/2/wBKPsn+3+lWKKAK/wBk/wBv9KPsn+3+lWKKAK/2T/b/AEo+yf7f6VYooAr/AGT/AG/0o+yf7f6VYooAr/ZP9v8ASj7J/t/pViigCv8AZP8Ab/Sj7J/t/pViigCv9k/2/wBKPsn+3+lWKKAK/wBk/wBv9KPsn+3+lWKKAK/2T/b/AEo+yf7f6VYooAr/AGT/AG/0o+yf7f6VYooAr/ZP9v8ASj7J/t/pViigCv8AZP8Ab/Sj7J/t/pViigCv9k/2/wBKPsn+3+lWKKAK/wBk/wBv9KPsn+3+lWKKAK/2T/b/AEo+yf7f6VYooAr/AGT/AG/0o+yf7f6VYooAr/ZP9v8ASj7J/t/pViigCpp3+oP/AAH/ANAWk1bSrXWtLmsL9WaGXGSjFWVgQyspHIYMAQexApdO/wBQf+A/+gLVugDmrHwXFbazFqt9rGpanfRSKyzXXkLwqSIFxFGgxiZz0znHOBiqt38ObC5iuYoNV1SzivI5Y7xLd4sXKPJJJht0ZI2tK+Cu04OCWrr6KYGZrmgWniDT0s74yiNJFkzE21jjgrnHRlLKfZj061nXfgq3m1SXU7DVdR0y/kmeQ3FqYiQGSNGj2yRupU+Sh5UkEcEZIrohIDM0fOVUMfxz/hTqQHOX3gmw1Ka5nvLq7kubiyS0efKBhtYN5oATAkJVCTjHyLgDFdBFEkEKRRDakahVHoBwKfRQBFd/8ec3/XNv5VTrQIDKQwBBGCD3qP7Jb/8APCL/AL4FAGFYaSLK41SRpfNGoXPnlduNn7pI9uc8/cznjrXM2/w+uRJYfbtZS4j0pYobAJZ+WyQpNHIRId5DsRCi7gFAwTtOa9D+yW//ADwi/wC+BR9kt/8AnhF/3wKFo010t+GwbqxyLeFN2rtffbMbtQa92eV/etfI25z/AMCz+GO9St4aP/CF2uhx3YSezghSC88rOyWLaUk2Z/vKDjPtmumEFsZmj+zx5VQx+Qd8/wCFP+yW/wDzwi/74FHS3p+GwdbnnerfDS11EQ7JrVxbR2yQQ6hYrdQkxCVSZELDfuEx6FSGAOe1WB4AgeGyileyt4re2nglt9Nsvs0EhfcFZU3tt2iSQ4ycls5GK7z7Jb/88Iv++BR9kt/+eEX/AHwKP6/QDG0fTzpWkW9m8vnyRrmSbZt8xycs2MnGWJOMnrWhbf8AH4v/AFzb+a1Z+yW//PCL/vgUfZLf/nhF/wB8CjcSVlYloqL7Jb/88Iv++BR9kt/+eEX/AHwKBktFRfZLf/nhF/3wKPslv/zwi/74FAEtFRfZLf8A54Rf98Cj7Jb/APPCL/vgUAS0VF9kt/8AnhF/3wKPslv/AM8Iv++BQBLRUX2S3/54Rf8AfAo+yW//ADwi/wC+BQBLRUX2S3/54Rf98Cj7Jb/88Iv++BQBLRVeOC2kUstvHgMV5Qdjj+lP+yW//PCL/vgUAS0VF9kt/wDnhF/3wKPslv8A88Iv++BQBLRVcwWwmWP7PHllLD5B2x/jT/slv/zwi/74FAEtFRfZLf8A54Rf98Cj7Jb/APPCL/vgUAS0VF9kt/8AnhF/3wKPslv/AM8Iv++BQBLRUX2S3/54Rf8AfAo+yW//ADwi/wC+BQBLRUX2S3/54Rf98Cj7Jb/88Iv++BQBLRUX2S3/AOeEX/fAo+yW/wDzwi/74FAEtFRfZLf/AJ4Rf98Cj7Jb/wDPCL/vgUAS0VF9kt/+eEX/AHwKPslv/wA8Iv8AvgUAS0VF9kt/+eEX/fAo+yW//PCL/vgUAQ6d/qD/AMB/9AWuW8ZeM73QtYttM0u3iknljV8yRtIWLMyqqqrA5yp7+ldTp3+oP/Af/QFrzTx/eQ6f8UNPur0TfZl07LeTK8TOR54wrIQQcsvcdecAmu7A041K1mr6PTuY1pOMLp2NC98YeLtMjaa+s9MESffKrnHzAYJWY4OT0xnqccHHeaZerqek2d8ilFuoEmCnsGUHH618+agmm6d4f1C00zVGuTqM6yNFDaiFIUVg2HeQNI3IACh8DBJJzz7v4UVk8GaKrqVZdPgDAjkHy1rqx+HVKnGXLZtvo1pp0ZlQqOUmr3/E0F/4/pf+uafzaotUvf7O02W6ChymAATxkkAfzqVf+P6X/rmn82rM8WZHhe7KjJGw/k61451mIvi+/dwka2zMxwqiFiSfT79bmgazLqqzpcRqskJXJQEA5z2OcHg1wy6na21utzZ2oj1IoIsnlIsDG9Qe5H8jnvu3fh4JD/aTyszlmjJdjkk/MTz68/rQB2lYGta3eWmqwafpsMck8qB/nUtnJIAABH90knNb9ed+PGVPFdiZppbeEwoWmiHzJh35HuMjnt6HpQBojxTrQglna2g8qGQRyEwOu1vQnfx+XGR6iutsrkXlhb3KjaJolkAPbIz/AFryjxBrtrrumjm5guIJ8xRk7llU/wATehGPfr3ySPT9DUr4f05WGGFrECD2+QUAWF/4/pf+uafzaoNY1D+y9JnvNoYxgYB6ZJAH86nX/j+l/wCuafzasnxmC3hG9CjJ+T/0NaAMx/EOvRy3Mb2tsrWqb5/3Zwgxkc+Zjp2HNanhvXZNZjnE6IHh2ndGCAQ2exJ/unvXM3fiC1mF9CqQyRHEkJmgZkmYKMhl4OcjAY8YA9Ob3gGQzXOqzeRDAHMPyQJtRSA3QdvX8aAOzrnPEfiSbSLyO3t0iyYw7NIpbqSAAAR/dNdHXB+MbqSx8W2dzHGsnlwIwVxwcM/T3GQc9jg0AWbnxXq9jMkd5BbRuyhwhjYHB6Z+c4+h59q62zuBeWMFyo2iaNZAD2yM/wBa8v17UIb55Ps9vaOsyq7TtblZkYdQWJ5PHUcYOK9I0QFfD+nhhgi1iBB7fIKAIBDEdzNDEzGSTJaMEn529aRUtnZgsVuxQ4YCNflOM4PHoR+dSL90/wDXST/0Y1ZGh+Ul1qUcNtLAjXPmKGtniVgVUEjIAPIPT696OoGzbRxpexmONEJjfOxQM8p6VU8Sa7Jo0cAgRC8247pASAFx2BH94d6uwf8AH5F/1zk/mlc18QHeKbS5ERX2mQ4dcqTlDgjvnHSgBH8V6vHZR3bw2ot5WKpJ5TEEjqPv8fjXT6Rf/wBp6VDdlQhkyCAeMhiD/KvPZdYibw7La/ZbU3F0SHjjgKJEP7xyfmboRjp+GD2fgxSvhGyDf7f4je1AG5XJ3HijUJNaksNOhtyyyNGiyKSWKkg87gB0NdZXmJu47XxRepc21n5f26V2uJrcySIN3G3ByOgx9c0AdHY+JtSe4hN5bQi3e6FoxVCjLIe2CxPH0rq688GsJql9YqF2Tf2rE4TadzRgAbmPQn+QHtmvQ6AIbX/Ut/10k/8AQzVfVr+HT7LzJ7qK1BdV3yOq4BYAnnjoasWv+pb/AK6Sf+hmvPPixc3D2bafZEfaJEgMacktmcZAUAkn5B0oA25vGFpaXCMuqW13Fg71W5hz29x2z69MV1kciSxh4nV0PRlOQfxr5Km03VzJgX8jTNG0iRbZRuUAnONvTAPPtX0x4Nu/teiyHzBLsnZdwbcDwG69+WqpJrcmPkbLf8f0X/XN/wCa1maZ4x8M61eCz0bxFpOoXJUsILW+ilcgdTtVicVpt/x/Rf8AXN/5rXF6lb6pBpfip7OG/j87VoXZrRSJntvLtxMYsck7BIAV+bIO35sVK3t/W6X6lHbSXEMMkUc00cbzMUiVmAMjAE4A7nAJ47A1He39tp0KS3knlo8scKnaTl3YKo49WIFeZGwuLhNLvLmDxFNpNnrsjWW+S9F2kDW5UGQZ84r5+4AuCQh5+QmsywTxFe63E8kOrNbXM9vcXNpNa3+yzlW8hbaJLmRg+1S/zRKiEKTjAGGleSXe39f1s7dweib/AK3aPaKK4vXbHWrjXdeutMm1ETW2kRnTI0nZIGuSJwTtJCO33OGyB8pI6GuegOtw213d+Gh4iksbeS38iDVDc+fLO8ckUuRP85jUyQOf4AUYjoaW47f1/X9bnqtV7i/trS5tYLiTZLeSGKBdpO9gjORx0+VWPPpXmeq2+vQaa8V3e635NjdR2gEEV5Ib2OMSuCz2585N4eIGZQ3zJhgwyK1Ndg16fwl4bk0uzvE1aGKRgsj+dJDL9imVd8jAAtvKjcwGSRkDOKHs2Jaux6BVe/vrfTNPuL6+k8q2t4zJK+0naoGScDk/hXlc0mpLpt5DpSeJBos8tsgudRTU5Lq2lCyNK4jRluHQ4hXCsEDMxHAIOfeQa5feE5rTxFF4mupf7Nli02O1iu0WWUTTAmcIxOTGIcCdmBBOCxLZdtbB/X9fr2PbAcjIqvHf20uoz2CSZuYI0lkTaflVywU56HOxvyryoReLxrmryx6rqcWqD7YLezGl3jQyptfyAszSm0XjyyCEVsja3JbNzSbWGO81O5sYfGAtJRpirNKLr7VJIs77x/pHzCMZG8DA2liBzQtbfL8Qeh6JqutaXoVqt1repWenW7OEWa8nWJCxBIXLEDOAePap1vbV47eRLmFkuseQwkBE2VLDaf4vlBPHYE1k+KL2Cyso/O/tSF5CVivNL05ryW3OOu0RyYyMjJUj6cVyawx6c3gGS+0K4hv7UFJGtdNmuPssbQOm1pFD7AXZMhnPqScE0lqD2uekUUUUAFFFFAFTTv8AUH/gP/oC1FqWg6TrG3+1tOtb3b937REHx+dU1uL37Zb2djLbxebC8rvNC0n3VhAAAZf75/Krfka1/wBBCw/8AX/+PU02tUBTTwP4WjcPH4d0xWU5DLaICP0rbRFjjCRgKqjAA7VQ8jWv+ghYf+AL/wDx6mrHrTM4+32HynH/AB4vzwD/AM9fem5OW7EXV/4/pf8Armn82p8sSTRmOVA6N1Ujg1R8jWv+ghYf+AL/APx6jyNa/wCghYf+AL//AB6pGH/CPaN/0C7T/vyv+FWrWytrJClpBHAp/hjXAqr5Gtf9BCw/8AX/APj1Hka1/wBBCw/8AX/+PUAaNVrvTbK/x9ttYbjHTzUDY/Oq/ka1/wBBCw/8AX/+PUeRrX/QQsP/AABf/wCPUAIvh3RlYFdLtAR0IhXj9K0VUIoVRgDoKz/I1r/oIWH/AIAv/wDHqPI1r/oIWH/gC/8A8eoAtr/x/S/9c0/m1PlijnjMcyB0bgqw4NUfI1r/AKCFh/4Av/8AHqPI1r/oIWH/AIAv/wDHqAG/8I1on/QJsv8Avwv+FXLWxtbGMpZW8cCH+GNQo/IVV8jWv+ghYf8AgC//AMeo8jWv+ghYf+AL/wDx6gDRqrd6ZY3+Pt1pDcbenmoGx+dQeRrX/QQsP/AF/wD49R5Gtf8AQQsP/AF//j1ACL4c0VWDLpVmCOQRAvH6VoqoRQqjAHQVn+RrX/QQsP8AwBf/AOPUeRrX/QQsP/AF/wD49QBL9jlBbbLFtLMw3REkZJPZh60v2Sb/AJ6Q/wDfpv8A4uofI1r/AKCFh/4Av/8AHqPI1r/oIWH/AIAv/wDHqALENtIk4kkkQhVZQEQjqR6k+lOurG1vowl7bxzoP4ZFDD8jVXyNa/6CFh/4Av8A/HqPI1r/AKCFh/4Av/8AHqAG/wDCNaJ/0CbL/vwv+FaEUUcEYjhQIi8BVHAqj5Gtf9BCw/8AAF//AI9R5Gtf9BCw/wDAF/8A49QBo1QuND0u7lMt1p9tNIerSRBj+Zpvka1/0ELD/wAAX/8Aj1Hka1/0ELD/AMAX/wDj1ADrfQ9LtJRLa6fbQyDo0cQU/mKv1neRrX/QQsP/AABf/wCPUeRrX/QQsP8AwBf/AOPUAW7X/Ut/10k/9DNJdWcF7CYrhNy5BBVirAg5BDDBByAeKq+RrX/QQsP/AABf/wCPUeRrX/QQsP8AwBf/AOPUAI+gWUiMkjXjowwyvfzkMPQgvyK0VVUGEUKPQDFZ/ka1/wBBCw/8AX/+PUeRrX/QQsP/AABf/wCPUCLbf8f0X/XN/wCa1NWd5Gtf9BCw/wDAF/8A49R5Gtf9BCw/8AX/APj1AzRorO8jWv8AoIWH/gC//wAeppj1oSBft9hyCc/YX7Y/6a+9AGnRWd5Gtf8AQQsP/AF//j1Hka1/0ELD/wAAX/8Aj1AGjRWd5Gtf9BCw/wDAF/8A49R5Gtf9BCw/8AX/APj1AGjRWd5Gtf8AQQsP/AF//j1Hka1/0ELD/wAAX/8Aj1AGjRWd5Gtf9BCw/wDAF/8A49R5Gtf9BCw/8AX/APj1AGjRWd5Gtf8AQQsP/AF//j1Hka1/0ELD/wAAX/8Aj1AGjRWd5Gtf9BCw/wDAF/8A49R5Gtf9BCw/8AX/APj1AGjRWZHHrTxq32+wG4A4+wv/APHad5Gtf9BCw/8AAF//AI9QBUtf+Rgs/wDrzm/9tq3Kw7X/AJGCz/685v8A22rcoAKjQ4aY/wC1/wCyipKjQZaYf7X/ALKKUr2dgOG8OeK/EU1n4b1HXjpc9j4gAQCztpIHtJGjaRAd0jiRTtKkjZg4PIJxs/8ACwPDQs7i7k1B4rW32Fria1mjjdXcRq8bsgEibiBvQsoyCTgg1S8PeCL7TbPSbPWtZh1C00aPbZQ21m1tlthTfKTI+8hWIGNoyxJBO3bhwfCibSvD02m6NLoUT77byLtNIEF0UiuI5f30yuRKdqf3F3NgnFVpzeX6Ddr6f1/SN29+JWkW8umraw3119s1A2MqjT7lZLZhEZMtH5W4EjbhSBkMWGQprNi+IOoLpHimS8t7WK701b+bTMK2y5jt3dMMM5LKyruwRw64xWg/grUpZI9Qm1q2bWF1NL9pxYMLfCwmERiLzdwGxic7ydxz04purfDpNU8Hahoo1R7e4ubu6uob2OEZgM7uWXaT8w2yMh5GQc8HGF0/ry/4P9ajVrr5fr/wDbXxPp6alZ6bdtcQ3l2gMZazmELsUL7VmK+WWwrHbuzweKzYfib4VuYlktr65nWSLzohDp1y5nT+JowIyZAvRtudn8WKp/8ACui3jW316W/tZfs86zRmSwDXKgQeV5Szl/liyS+wKPmJ5Oav6N4M/sj/AIR3/T/O/sTTpbH/AFO3zt/lfP8AeO3HldOevXjkfVr+t/8AgIiO1n5f8EtzeNNBh+xH7a8q3sKXET29tLMixOcJJIyKREh7M5UcHng43a86X4TQwyaTMkuj3s1jp8NjIdX0YXasImJV4x5imJvmbPLA/Lxxz6LTdunn/wAAfUKKKKQBRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFRn/j4T/cb+YqSoz/x8J/uN/MUAcTqfiXxNb33ia7sP7Ll07w/Im6ykt5FmuE8iOV8T+ZtVsO2B5ZHABIzkdAPF2jNqkWnrcStPKE+ZbWVokLruVXlC7EYgghWYE5XjkZyrzwZqN3qut41qGHSdbkR7u2SyP2jaIUiZFm8zaoYJyfLJAY4IOCIm+HkEXjiXxBapo7+fLFM4vtJE9xCyIE/czh1MYwq8FWwckdcUun9b9Ryt0/r+tRbz4peHU8PX2p6ZNPfm3sXvYY1tJ0Fyq4zsYx4YAlQxXOzPzYwaiTx9K3jC0tntRFolxY28rTTwSQzQTTSSIm9XAwhMYXlQdzqehqppPw41M+F7fSvEOs28q2+jy6bAlnbFfKMqBXdnZv3hAXC/KnBOQTyN228INJcXU2u3cN99s0uLTZ44LdoUYI8p3DLsRkSYxngrnPOBWif9ef/AAAdrWX9ar/gkNp44t7fRbrUNfWWKKHULy28y0sp5kSOGZ0DyFFbYNq5LNgdelWb3x94a0/UprG71EpNBIkcxFvK0cTOoZA0gUqu4MNuSNx4GSCK5e7+Ec154fh0u712C/2teNJJqOmrOGa4k3+aqbwqzJyA+D95sKM1vz+B/OttUi/tDb/aF/Z3mfI/1f2cQjb97nd5HXjG7occit18v0/4LB2u/n+ehdTxvoMmmPfLcXOyO5+yNAbGcXHnbd3l+Rs80ttO7AX7vPTmqr+Ir7XdQSx8Iy2sIW1S7mvb+2kdUV2ZUjEIaNt+Y33ZZSm3BBJ4o+IPhvDrs97PLc2skk+pRahFFe2AubdSlusBSSMsPMBUE8FSCR6c2YfB1/pn2S58Pahpel30Vv8AZbiOHSSLKaMMzLiAShkKl2wRJj5myDkYWnX+tP8AMH5f1r/kXr7xbp3h8Q2viK7AvfJEs5tLSaSONM4819qt5KEg8uQBg/MdpNW5fE2kQrdtJeALZ3ENtORGxCyS7PLHA5z5qcjIGeSMGsbUvB+qXt3Nc2+uwwS6hYJY6mzWG/zUUuQ0P7weU371x83mD7uQcHMGo+Abq4vLldP1eG0027ubS6nt3szLKXtzHgLJ5gAUrCgIKk5yc9qa31/rX/L+kLTp/W3/AATSXx94ek1CSyiu55J45JocJYzsrSw7jJErBNrSAIx2AliBkAgirHhDxLF4u8LWWsw2s1qLmMM0M0brsJAJALqu8c8MBg9qpQ+DPJFiPt+77JrVxqv+pxv83zv3f3uMed97vt6DPF/wpolx4c8N2ukXN5FeLZoIoZY4DEfLAwoYF2y3qRgH0FC218v+D/XkOVr6f1v/AMD7zVg/494/9wfyqSo4P+PeP/cH8qkpCMO1/wCRgs/+vOb/ANtq1mu7Zb1LNriIXUkbSJAXG9kUgFgvUgFlBPbI9aybX/kYLP8A685v/baqV1Z2sHxV0u5htoY7i40u986VIwGl2yWoXcepwOBnpTWrS9fybA6mqd5f22lWF9f30gitrVWmlcj7qqgJP5CrlZ+q6ZFrWj6lplwzJFeRPA7IcMoZAMj35qXe2g42vqVdJ1PW72YTalokGn2Eib4nN9vuE7gSx7AqHHXbI+D+Yms/FGgahZSXlhrmm3VrFIsUk8F3G6I7EBVLA4BJIAHU5FYtxpXinXPDeo6Brv8AZUEVzYy2v9o2k0jvKzKVDmBkUR9ckeY/pnuMy+8F6xr9rcvrFto9rNKljb/ZreV5opIoLgSsXZo1PI3KqbSB/eO7iutugltrv/w3/B+7zOqt/F3hu7ktI7XxBpUz3rMtqsd7GxnKnBCAH5iDwcZxU0PiHRbjVP7Ng1ewlv8ADH7KlyhlwrFWOwHPBBB44IIrmr/wTc3EmvSW/wBjR9S1exv4WOQVWDyN24heG/dPjGeo5GTjI8KaJqGpXzyC30+DTrTxLqF61yjt9plkEs0ewpswPvDL7ydo27e9Lp/Xl/m/u8xtWV/66/5HZaz4v0PQ/D8usXmpWzWq2r3UZjnQm4Rcf6vLANksoHOMso7inp4t8PPBp039uaci6nxZbruMfaTkDEfPznJAwM88VxMfgDxFPpUGk3b6ZDa2Oh3uk288VxJI83nLGqSOpjUJxHyoLdeCasal4I1jUtattUu7O0uDLp8Vnd2Sa9d2scZjd2DK0UY85SHOVdBgjg8mmrX/AK8/+B94Sslp5/p/wTubfWdNvJbqGxv7a7ms8/aIbeZZHiOWGGUHIOVYYPdSO1ZPhrxNda3o/wDbN/Z2djpU0Auba4S/80+XyT5oKKI2AxkBnAO4Z45seGdEn0PTr6GVoPNudRu7tWjyRiWZnXdwOQCAfp1rlbjwPrWpSapdy2+kaRLdCCX7HZ3Ek0F7cRTCXzJ8xpjdtCEhWOCclsAUuv8AWn+f9fIfW3f+v6/p9fZ+ItP1Oe1bSdR0y9s7iOVxNBfK7MUKg7FUEMBu+Y7htO3g54bH4v8ADU2mtqEXiHSnslkMTXK3sZjDhd5UtuxkKC2PQZrB17wrrPixY21P7Fpjtpd/YSi2uXuAhn8sIykxx7gAhyMDsBnrVLS/AmoJNpUt/ZWcEllqMN1Mx1m61HzljglQbfPTKENICFBI685Ay1/X3/5B0v6/lp952E/iXQrXR4tWuda06HTZiBFeyXaLDJnphydp6Hoe1PbX9HXVYNMbVbEahcx+ZBaG5TzZUwTuVM5YYBOQOxrk7bwhrejXlrqOlppt5cW13qLLaXFw8MQiuZvMDK6xuVdcAEbSCGbn1P8AhCr9fH1xrMkEN3a3l1BdtnWrqA2zpGqECBFMU2NgILbTzg9BSWr/AK/r+rCelzvKKKKACiiigAooooAKKKKACiiigAooooAKKKKACiiigAooooAKKKKACom/4/I/+ub/AM1qWom/4/Y/+ub/AM1oAlooooAKKKKACiiigAooooAKKKKAMZ9emTxnDob6bIkM1pLcJevKm1zG0QKqgJP/AC15LbeRwDnIPD+vTa1PqsVzpsmnPp92Lfy5ZVdmBijkDHYSo/1nQFunXsH3OlzzeL9O1VWjEFrZ3Nu6kncWkeFlIGMYxE2ee4/A0jS57DVtcupmjZNQvEuIghOVUW8UeG465jPTPGKa217P8/8AIeho2vNnDn/nmv8AKpaitP8Ajyg/65r/ACqWkIw7X/kYLP8A685v/batysO1/wCRgs/+vOb/ANtqS91zULDxHZWdxpkP9nX0/wBmhulu8zeZ5bSZMWzGzCMM78/7OKPIDdqASMksoWF3+YcqV9B6mp65/wAZ3E1p4D8S3FrLJBPFp9w8csbFWRhCSCCOQQe4pN2VyormkkbfnP8A8+0v5r/8VR5z/wDPtL+a/wDxVcDLer4E1CC6W91K702XRrm9u7S5vJLp1aERsJEaVmYZ3lSu4L904BzmS1+Iuq3Frag+FpY7y7v0s4Y5ZJ7eM7oZJA++e3jY4MZDBUOAQQWPy1Vtbf1vYhaq/wDW1zuvOf8A59pfzX/4qjzn/wCfaX81/wDiq4XVviXPpfh0Xx0eKW+hluY7qwjuZZHXyDh2jMUD7l6fM4jUblDFScVD4m8b+IBDqS+HNNtI00+/sbZrq5vSrSec0DbRH5LjBEu0knjqMngJa7f1/Vyra2PQPOf/AJ9pfzX/AOKo85/+faX81/8Aiq4vUPHuqWF5fxnw7HNb6bd21ncypqABMk6RFfLUxjcA8oBLFeMEZOVDL74j3emWc8N7oQOsRakuni0tZpbiJmMAnDh44DIV2Z6REgjpj5gf1+X+aCzO385/+faX81/+Ko85/wDn2l/Nf/iq4S6+I+qRWs00HhgkWWlLql6l1dPbvGm+VWREeLczfuiV3BNwPO04B1PC2ta1qninxLb6hFajTrO6jS0aOcs6q0EbgFfLXqG3EliQSVGQAadnf+vQX9f1950/nP8A8+0v5r/8VR5z/wDPtL+a/wDxVcknjXUp7nfa6JA2nT3s+nWly98VkeePeuXj8s7Iy8bDcGZsYO3k4z/C2ratp/wSk8Q3e651N7CTUMy3ktyJHKbgfmA2Dj/VoNq9BU30b7Fcrvy9TvfOf/n2l/Nf/iqPOf8A59pfzX/4quaFraeE9DuvEt1qWrai9vZvcXLyXryJcALuJWEt5SE442KoHTpmqV5471TSbS5/tjw9Et9GtrJDb2moeasyTziHG9o02upPII2nj5uuK68vUlaq/T+v8zsvOf8A59pfzX/4qjzn/wCfaX81/wDiq4s+PNXt7idNQ8O28MdhqEFhfyRakZNjTGPy3iBiHmDEqFt2wjnG6p7Lxxe3OpxrPoiQabLqlxpaXX20NIZY2kAbytn3D5Z53bgT90gbiul/66f5oNlf+uv+R1vnP/z7S/mv/wAVR5z/APPtL+a//FVwGufELUG8C29/o1hHBe6joN1qcTSXHFsYljOP9WQ5xJkZABKgHAORPefELUtNv7DTJfD8l7fG1iub77F9onWJZHZV2GO3IZsIxxJ5S9AGPJDs72/rr/kNqyu/6tb/ADO485/+faX81/8AiqPOf/n2l/Nf/iqxvD2uXviBNTdrGKygtruezt5ftBlaVopHjZim0BR8oI+YnkjjAJ5bSNZbwnaXMOuR6rL4i8uFZIbi/ee3v5JJREssBZisSGRwCoVNoIymAtJb2/r+v672GrfI9C85/wDn2l/Nf/iqPOf/AJ9pfzX/AOKrktV8VTaBcW9z4k00Qzx6bfXkiWGoSTRqkPlHAVkjDswYYLKNuCAeTVK1+ImrXNraj/hF3jvbu/SzhjnkuLeI7oZJA++a3RjjyyGCocAggsflo3/rzsHS/r+G53XnP/z7S/mv/wAVR5z/APPtL+a//FVyVp44v9Sis7TTtGgbWZ3ulltp74pBCLaURSHzhGxbLFduE5B524pD49uG8btoMGh3E8ME0dtdXcUdw4jkeNX4KwmPYA65LyIep29Mi1dhPS9+h13nP/z7S/mv/wAVR5z/APPtL+a//FVLRQBF5z/8+0v5r/8AFUec/wDz7S/mv/xVS0UARec//PtL+a//ABVHnP8A8+0v5r/8VUtFAEXnP/z7S/mv/wAVR5z/APPtL+a//FVLRQBF5z/8+0v5r/8AFUec/wDz7S/mv/xVS0UARec//PtL+a//ABVRNK/2uM/Z5PuNxlfVferVRN/x+x/9c3/mtAB5z/8APtL+a/8AxVHnP/z7S/mv/wAVUtFAEXnP/wA+0v5r/wDFUec//PtL+a//ABVS0UARec//AD7S/mv/AMVR5z/8+0v5r/8AFVLRQBF5z/8APtL+a/8AxVHnP/z7S/mv/wAVUtFAEXnP/wA+0v5r/wDFUec//PtL+a//ABVS0UARec//AD7S/mv/AMVR5z/8+0v5r/8AFVLXH+EhJaeKNXsHfVIIxBDJHZ6pdPcyE7pFaZZC7qEbCgIG425Krnk62Dpc6u0/48oP+ua/yqWorT/jyg/65r/KpaAMO1/5GCz/AOvOb/22qlFp/iD/AITWW/vLDTLqzD7LW4bUZVktYSoDBYPJK7ywJLb8kEDOBirtr/yMFn/15zf+21blHW4dLBVO8sLbVLC+0+/j821ukaGaPcV3IyAMMjBHBPIq5VK6nis4Lu8u7z7LbQAvLIxUKihQSxJHHFJ2tqNXvoUrDwjounW9zDHayXC3UXkTtfXMt27xYI8svKzNs5Py528njk1jaj8O7OWHSbXT5bxbO0v1uZluNVundUWGWMCJ2ctGQXU/KV6deBW7pGq22uQSS2NxfoI22sl3ZPbOOMg7JY1Yg+uMHnng1Ol5A+rS6Yt9KbyGBLh49g4jdmVTnbjko3Gc8VWt/wCvUS20/q+hlXPgDw3d2FvZz2U3kwRyxAJeTI0iSndIsjK4aUMeTvLZPJ5q5ceFNGurO/tprRvK1CSOW42TyKzPGqKjBgwKkCNMFSOVz1rT8l/+fmX8l/8AiaQwuBzcy/kv/wATSvoBnHwtpDQXET2zut1NDcTl55GaSSEII2LFs5HlJ35xznJyy/8ACOi6l9pN3aOXurlLuSWK4kjkWZECK6OrBkIVQMqRxn1Obem3cGr6Xbajp19LNa3UYlhk2BdykZBwVBH41Fq+qWmh20U+pX1wizSrDEkUBlkkc5wqoiFmOATwOACegNN3vZ/1/WgbEI8JaP8AZrqCSCedbuy+wTvcXc0ryQZc7S7MWP8ArH5znnrwMWbPQdPsNVudRs4pIri6RUmxcSGN9qhVPlltm7aoG7GcDGae91DHqUGnveyi6uIpJoo9g+ZEKhjnbgYMi8H19jTNUvrbRdMm1DU7+WG2hA3NsDHJIAAVVJYkkAAAkkgAZpX6hv8A1/XZFaDwjottrTarDayLctI8wU3MphSRxhpFhLeWrkE5ZVDHc3PJzf0/TLPStJg0yxgEdnbxCGOIksAgGAMtknj1p0Gbm3jnjuLgJIodRJEEYAjPKsoKn2IBFSeS/wDz8y/kv/xNHSwX6mLY+CdB05ZY7a0lNtLE8Js5ruaW2RG+8qQO5jQYJGFUcHHTii28E6Da2ctslrPKkrwu7XN5NPIfJcPEu93LBVYZCg7eTxyc7Xkv/wA/Mv5L/wDE1FcSR2cPm3eoeRHuVN8rIo3MQqjJHUkgAdyQKAKs/hvSrn7Z59ru+3XMV1cfvHG+WLZ5bcHjHlpwMA45zk1j+HPA1rpV9PqN+pmvm1C7uoSt1K0UYlkchhETsEmx9pYLnqMkV0ML+fNPGk90GgcI5eDYCcA/KSgDDB6rkZyOoIqbyX/5+ZfyX/4mjb+v67DeqsYEHw/8N28srpYyv5kE1tslvJpESKXHmRojOVRTgcKABjjFSP4I0R3tJNt+k1pF5EdxFqlykrR7twR5FkDSKDkgOWAycdav6nex6RZG6u5b+SMMFxa2b3L8/wCxFGzY98YqtoGvWPiew+26PdX72xAKyT2MluJARkFfMjXcPcZFC8un9fqJ+f8AX9WL9lpdnp1tNb2cASKeaWeRSxbc8jFnPJPUsTjpzWVD4G0CG2u4GtZ7lbyIQyveXs9w4QHIVXkdmQA8jaRg4I5ANaeoXEWl6bc399eyxWtrE000mwNtRRljgKSeB2qaNDLGsiXUpVgGU7V5B/4DQGpmx+EtHWOJJoJrwRQzW6m+u5bkmObb5iMZWYsDsXg5xjAxUdh4O0bTlthAl5ILSZZ7cXWo3FwIXCMg2+Y7YG12GBxz04GNjyX/AOfmX8l/+JqrLeQQ6pbadLfSrd3UcksMewHcqFQxztwMb16nv9aP6/UCjc+DNDuoEia3nhKXMt0ktteTQSrJKxaQiSNw4DFiSoOOnHAxIfCmk/22NXjS7hvPk8xoL+eNZigwplRXCykDjLgnAA6CtTyX/wCfmX8l/wDiaPJf/n5l/Jf/AImjYN9yWiovJf8A5+ZfyX/4mjyX/wCfmX8l/wDiaAJaKi8l/wDn5l/Jf/iaPJf/AJ+ZfyX/AOJoAloqLyX/AOfmX8l/+Jo8l/8An5l/Jf8A4mgCWiovJf8A5+ZfyX/4mjyX/wCfmX8l/wDiaAJaKi8l/wDn5l/Jf/iaPJf/AJ+ZfyX/AOJoAlqJv+P2P/rm/wDNaPJf/n5l/Jf/AImomif7XGPtEn3G5wvqvtQBaoqLyX/5+ZfyX/4mjyX/AOfmX8l/+JoAloqLyX/5+ZfyX/4mjyX/AOfmX8l/+JoAloqLyX/5+ZfyX/4mjyX/AOfmX8l/+JoAloqLyX/5+ZfyX/4mjyX/AOfmX8l/+JoAloqLyX/5+ZfyX/4mjyX/AOfmX8l/+JoAkdFkjZHGVYYI9RWZpHhzTdDkmlsUuHmmCq813eTXMhVc4UPKzMFBJIUHGSTjmr3kuP8Al5l/Jf8A4mszR9dsNdkni0+9vPNt9pkiuLR7dwrZ2sFkjUlTtOGGQcHB4o9A6Gpaf8eUH/XNf5VLUVp/x5Qf9c1/lUtAGHa/8jBZ/wDXnN/7bVlaoJLL4haVOr6rax3M/lyzSXTyWdwDC+IVhDkI+5VbeyJ0IDEnadW1/wCRgs/+vOb/ANtqm/4RnTDrg1d47iS6Vt6LJeTPDG+3bvSEsY1bBI3BQeTzycnVMOjNaszWYLS60PU4NStpbuzkiZZ4IVZndCg3BQvzE46befTnFadQCeKKWUSSoh3A4ZgOwpPVDWjPODe67Nphjkk1+68PQahEkl39imttRktjE25QiIspCy+WN6KrFd3XBYxa3ol1eXWr6job+IYVt/DMTacyyXMcstwj3DKrl/3kjjK5jfOd/wAynjHp32u3/wCfiL/vsUfa7f8A5+Iv++xT/r8Lf8EE7f153/4Hoec3/wDbUvie5Mn9vJqjXVqdL+zeeLEW+2PzfN2/uc58/d5nz/d2/wANP01dXbxYvnHXhqo1S4N35pn/ALPNj8/lbc/uM7fJxs/ebs7v469D+12//PxF/wB9ij7Xb/8APxF/32KHrp/XT/LXvqLpb+v6/wCAcHa22sWXwP0m2tYL63vIrW0S6igRluUhDp54QfeD+Xvxj5s/d5xWX/YU+ralo0sS+In0m314PaG8uLuOaOL7K+9n3sJQnmgAGTnkgfKwB9Q+12//AD8Rf99ij7Xb/wDPxF/32Kq/vc3nf+v67jburev4qxxvjy21N7t7jSIbszx+HtUSKW1ViyTN5BjCleQ5KnaBycHHSud8Q+GNSlju9ND6/e2ci6TdgveXLnz/ALWROVYNlcJhigwqYDALgGvVPtdv/wA/EX/fYo+12/8Az8Rf99iktLeX+bf6g3pb+un+X4s871OHVU8WXcSN4gF8l5ajSGge4ay+yhY/M80jMJOfO3eblzxt520xdH1q5+yma78QRm88TXSXRS6nXZZL9p8sAZxHGcphlweUwchMej/a7f8A5+Iv++xR9rt/+fiL/vsUlp/Xp/lr8wb0t/WzX6/gec6VpuuafdaTeefrtzLHrV3ZyxXNzM6NZKJxEXRjt/hixKRuJIyxzXMPp+uazo2rNqMPiA2pfT737IqaijW8guSZo0MkjSSlY+8YVCVVlUEA17b9rt/+fiL/AL7FH2u3/wCfiL/vsULTX+v6vqDfb+tf8tPQ841D+1vtF5v/AOEg/sH+1rfzPs/2r7T9k+xJjZt/fY8/bv2fNndn+KnWWk6vq15otpe3XiGDSWi1FgftU8Exj8yL7MJnBDh9u4jcQ+AQ2fnFei/a7f8A5+Iv++xR9rt/+fiL/vsUf1+FvvC+3l/wf8/wRk+D5NRm8DaO+tCYagbKP7T56FZPM2jO4HkNnr715fa2Xia2tfC9vPd6ro9nb6PbeUINLvbnbchj5iyJbyLtOPL4mV0IzgD5s+zfa7f/AJ+Iv++xR9rt/wDn4i/77FVf3ub+uv8AmL7LiebalDdXmj+L7bUYdem1+S0v44I1S6azeEq3kiIL+4LFCg/56bt2abqOla/pyX9hpV3rzwzwaVKJ/OlkdJTdFbjy2OQn7sAsigKB/CAa9L+12/8Az8Rf99ij7Xb/APPxF/32KlaW+X4Dbv8A16f5W9Dze9tNW01r2wZ/EMugQa3H5jwzXM10bVrQMRHIpMzoLgjOwlgNw6AioHs/ExjtLnSotRe5i0zV102W9UmaMM8P2ZZWk6OQvAk+bA+bkNXp/wBrt/8An4i/77FH2u3/AOfiL/vsUf1+Fv6+Y1KzTtt/wf8AP8jzJRqK6Pqb+Hz4q/szybQTi9+0m73eb/pHkCf97nyf7nGf9X82ag0/V7zTBrWtafNrd3YaRqscaWN/NMZJIJLWIbNsp3AiR1cbxu692NemXy2Wo2UlrcXTJHIMM1vdtA45zw6MGX8CKyrXwx4bsoreOANtt7hroeZfyyebMSD5kpZz5rAgEGTdtwMYwKO/9dV/SJ2X9dv6v95p6HZ3NhodrBf3ElxdBN08sjly0jfM2Ce2SQB0AwB0q/UX2u3/AOfiL/vsUfa7f/n4i/77FN6sCWiovtdv/wA/EX/fYo+12/8Az8Rf99ikBLRUX2u3/wCfiL/vsUfa7f8A5+Iv++xQBLRUX2u3/wCfiL/vsUfa7f8A5+Iv++xQBLRUX2u3/wCfiL/vsUfa7f8A5+Iv++xQBLUTf8fsf/XN/wCa0fa7f/n4i/77FRNdQfa4z58eAjAnePVaALVFRfa7f/n4i/77FH2u3/5+Iv8AvsUAS0VF9rt/+fiL/vsUfa7f/n4i/wC+xQBLRUX2u3/5+Iv++xR9rt/+fiL/AL7FAEtFRfa7f/n4i/77FH2u3/5+Iv8AvsUAS0VF9rt/+fiL/vsUfa7f/n4i/wC+xQBI7bI2baW2jOF6muP8JyT3XijVb1RqNxaTQRKLzVNPe0mDB5D5KqyJujUNkEJ1Y5Zz93rPtdv/AM/EX/fYo+12/wDz8Rf99ihbh0sFp/x5Qf8AXNf5VLUVp/x5Qf8AXNf5VLQBh2v/ACMFn/15zf8AttV+71nT7HVLDTrq5WO81EuLWHBJl2Lubp0AHc+3rVC1/wCRgs/+vOb/ANtq5m+03xT/AMLE0zULjTNPuLX+0mEdxFeyloLYQSqAyeRhSdxYnecsVXOMENauwdGz0Ks/VNTh0XSNS1O6V2hs42ndYxlmCoDgD14rQqle6fb6rp9/p99H5ltdI0Mqf3lZACPyNS720HG19TntQ1PxXpHhjVdd1B9Ixb6fNdR2MdvLugdULKrSmTEo4wcJHnqMdKzNK8eag+n31xJLpniCJBarZ3mko0MEtxM5j8hiXlAKtsLMCcB+VyOdWTwvr954f1DRNU8R291Z3NlLaRSjTtk43qVDyv5m1yAedqJk+nSpbzwVFdteIt69vb3kMJkSGIB0uoipjuUY5AYBVBBBB2J6HNaXf9f1/wAN0uLou/X8P+D+PWxp6RFr0TSf29d6ddKwBj+xWkkBjPcHdI+/6/L06c8c3oPxChvbPU9T1dnt7OPUnsbK2TS7kXDlWZcYILSs20ttRAUAIboSOj0a01y33/29qtnf/KFj+yWDW31LbpZMn6bR149Md/BU8djD/Z+qJDf2ur3GqW08tr5katM0m5HjDgsNszDIZTkA+1Lr/XdfoGlv67P9bF+PxroMzackN3LJJqTOttGlpMzkoyrIGULmMqWAYOBt5zjBxQ1XVPEs3jC60nw9NpUUdppsV5svbWSRp3eSVdm9ZFEY/djna2M5welT6X4Paw1ew1KfUPtFzbpdm4Ig2LNJcPG7Mo3HYq+XgL8xwRkkgkmqeG9XuPFE2raPrdvp63VlHZTpJYGaRVR5G3xv5iqrfvDjcjjIBwelD2Xf/h/6/Qeln/XX/Ig0/wAeafcWEWo3lyII5bC2uTYx2kss8bSuyABkz5mWUqFVc/KTyCMIPiLpa6/e2FzbX9tb2emLqMl3Np9ygVDvLBlaIbcKmeTySVAypFMufAEarMmmzWYiOnWthFDqNm10iCCR3DnEiFm+fg5BBUNk1BJ8P757O4t21/zftuhnSbuW4t3lkc/vCsisZcjBlOQ28kADdnJLf+f62/QFa/3fpf8AUdrfj+Cy06fUNPvIGijWzk8q7spoWSKW68lpSzFcqQG28D7u7LKwrbsvGGiX/kiC6kV5rv7EsU9rLDIJvLMmxkdQy/ICwLAAjGDyKy9b8CyatNcyw6p9lkmtrGBG+z79htrgzBsbhndnGO2M89KZJ4K1KZTfS61bNrn9opfrc/YG+zqViMITyfN3bdjN/wAtM7jnOOKNPx/C6/S/9aC6f12/z/rqWW8faafFun6Jaw3Vz9sFyrXEdrMUikhkWNlJEeMbi2WyAuATwymrEfjrw9La3VyL2RYLZA5lktJkWZS20GElAJgWwAY92SygfeGc3TfAt5p15p93/bEM09vPevcl7IhZkupRI6qBJ8hBUAMS3Gcis7SfhUNG0mWxsLjR7ZkERtL630RY7oNFKskZnkEmJhlAGG1C3XINJdLjdun9f1/VzoPDXik+IbvXvIjzBp9ykMCtC8MrZgjkIdZMFW3ORggYGOO9UfCvi6fUbNLzW9R07FxLHb/Yra1ljm0+4b/l3ny7fN0G4rHyBx8wxqeHvD97pM+r3Wo6ml7d6pcLO7w23krGREkeFUs3HyZ5J68561zut+HL6G21HVNbu/7U1S6tEsrMaTpbxbZFcyRO/wA8nIkCkOxVE56ZJovZr0X/AAbebf8AW6Zuv6/r+vu6Wbxfo0N+LIS3M1wZmh8u2sZ5yGXaGJ2IcKC6gsflByM5Bxm6T8RdK1HSbq/uYL60WC/lskiaxuGknZXZR5aeWGdiELFVBKYO7GDUVx4Iu59P0aGLUbe2uLI77m9+zObp3Zw8pilWVNgdt2QVdTkZBAwaupfDVtS06WzuL6wuIo9Wk1SzjvNM8+NWkMheOZDJiVf3rYI2EYU84o23/rVf8EWjX9dn+tjWuviH4YsvL+06i6F7dboj7JMTFCzMvmSAJ+7UMrBi+Nh+9jIqVPHXh+S3u5Uurj/QzGJIzYziRvMJWMxxlN0gYghSgYHBwTWavw//AOJbqdt9qsrX+0NF/sry9P0/yIIfmmO9I95wP333c9VJzzxY1TwY99dXdxFc2LvcWFtZiO/sTcRL5Mjvv2iRDn5+MEFSoOTQ/L+v6/Uf9fl/wfu8zZuZr7UtFjuNAuIrKaUB1fUdPlbC9w0ReJ1P1Ix6Vy/hfx076Fpt14rvrZ7vU7eK6SLTdMuAlrG/AMrBpAq5yA7lB8rehx1eiadNpWg2lhdXst9NBEEe5lLFpD3PzMzfmzHHUk81xK/CaGGTSZkl0e9msdPhsZDq+jC7VhExKvGPMUxN8zZ5YH5eOOWrcz7f8P8A8AX2fM3dd8a2llpWunSjJc32lWc8+42kzWwkjQtsaYKEyDgFQ+7r0p1v8QfDsml3F7NqBijtBAbhntpUA81tsbrlfnRm4DrlTg88VXk8G3/9la3osGr26aPqkd1siexZp7eS43Fj5nmgMod2IXYDggbuM07VfA/9p3stx/aHleZBYQ7fIzj7NcGbP3v4s7fbrz0pR8/L/gjdunn+n/BLi+OdAbS3vhc3ARLn7IYGsZxcedgN5YgKeaW2ndgL93npzVY+NrOXWNM+y3EH9k3Nle3NxcTq0bQmBogQwbBTG99wYZBHbBqO/wDBU82rXWq6fqiW9+2pR6hbNLa+bHGy2wt2R1DqXBXceGUgkenNef4dR31uE1HU3laa0v4Lt4oQnmvdlCzoMnYF2YCndxjJJBJPP+r2/wA/66jVrr+u/wDwDUg8deH57C7vPtc0MdoiPKlzZzQSbXOEKxugdwx4XaDuPAyeKl0zxjoer3gtLG6lNx5rQmKa1lhZZBGJCjB1G1tjA4OD19DjC1PwxfLpN5qGu635+oRx2628+n6RIwh8mUSIfs6vI8hL/ewR8o4C8muegsdY1LTdTnkF+mratrMc2m3i6XLbeUI4Y4XlZGyYE2iUASEMw6ZLCjq/66onpr/Wh6jp+oW2qWS3djIZYHLBX2Fd21ipIyBkZBwehHIyDVmobK0h0+wgs7VdkNvGsUa+iqMD9BU1N76AFFFFIAooooAKib/j9j/65v8AzWpaib/j9j/65v8AzWgCWiiigAooooAKKKKACiiigAooooADnadvJ7ZNc9oepavJ4i1HStYlsbr7NBDOJrKB4hGZC/7pgzvuYBA27K5DD5RxnemV3hdYn8uRlIVyudpxwcd6wfCehatoFobXUtR0+9i25322nPbyySfxSSM00m9m6k4HP5ULf+v6/r1B7f1/X9ehuWn/AB5Qf9c1/lUtRWn/AB5Qf9c1/lUtAGHa/wDIwWf/AF5zf+21blYdr/yMFn/15zf+21UG8Q36fEI6Tczw2dgSqQJNpdwTdsYy5CXW4RAjB+TDMQrfgdbB5nV1ADKJZfLRGG4cs5HYexqeqGpalb6NpWo6leNtt7SNppCBk7VQE4Hc8Um7K40ruxa3XH/PKL/v6f8A4mjdcf8APKL/AL+n/wCJryfQ/FMnh3TtbeOG+F7PpEuskalp9zbxm8RSZlHmqm5eY+FPRT0rXv8Axv4h0qyvDcf2Nc3AhsLmBolkSKJbi48opIxY5wMkSDGcE7BjBqzvb+uv+TF5/wBdP80eg7rj/nlF/wB/T/8AE0brj/nlF/39P/xNeeXmqaje+INJ0/WWs7i403xGsJns4WijkDWEsmCjMxVhvwRuPY8ZwKWleN/EdzFoWn+GfD9oy/2RbX9xBbQxrGEkZl2Rh7iPylAQ/MFl6j5Rj5hK/wDXlcbVlfyv+Nj1Ddcf88ov+/p/+Jo3XH/PKL/v6f8A4mvOLzWdS1jxN4cnuZtOWxHiO4toLWNW+0IYYbiMs7lsNnBO0Ku3IGW61tanZadrvxEfSfE0MF5Zpp0c9hYXah4Zn3uJn8s8OygRDkHaG4xuNLdLz/yuD0/rzsdbuuP+eUX/AH9P/wATRuuP+eUX/f0//E1xOseIL7SLq90/wy2k2lhoelLfut3G7iZC0g8qMq6iIL5JG7DgbgNvHNbUPGniWO51S4soNMSx0++s7TyLiOTzpPtCQ9WDAJsabP3TuAx8uNxFq9P61t+YWa3/AK2/zR3+64/55Rf9/T/8TRuuP+eUX/f0/wDxNcFN4v8AEltdDSJH0h9RGuJpjXZt5I4Sj2hnVxH5hbcDgbd+GxjK5yLuieL9Su9W0+x1BbIhxqMdxcwIypI9tKiBk3MdoIZsglsFevGSdL/1tf8AVBZ/18/8mdhuuP8AnlF/39P/AMTRuuP+eUX/AH9P/wATXklv4n17VLXVdavptNubBvCEWoNpclpI8LsyznHMpGCy/MdvzLtXjG471x4w1+3vr6WFNLXStN1Cxs3gMEnnSrcLBkq28KhUzZHytkcfLjJrld7f1vb8wat/Xkn+p3u64/55Rf8Af0//ABNG64/55Rf9/T/8TXDw+MdZk13TcvpX9nahrNxpi2oR/tEQhWXLF9+CS0QONg2hgMt1qbxf4x1LRPEFpa6TFFcwRyWw1BHtx+6Weby0PmmZME/NgLHIcrztBBqVrbzE9L+X+djst1x/zyi/7+n/AOJo3XH/ADyi/wC/p/8Aia4ay8X6++rWst4mnNpl1rV3pSwQwyCceV5xSTeX2nPk4K7e+Qf4RT0LV9S1vx14X1HUp9NdL7R7y6t4bNWDQI7W+EcljvI6bwFBIPyjFNatf10uNqzs/wCtbfmei7rj/nlF/wB/T/8AE0brj/nlF/39P/xNeZf2qvhX4ieKteumc6fNdRWlyijOJBZwvCR7k7092kQVU0W81bwwPEcFu4m1/UNZjbymgFwJJXs45pVUNNCoVRuwTIAAoHJwKXS/lf8AL/O//DhbWx6xuuP+eUX/AH9P/wATRuuP+eUX/f0//E14/d67r3iHR/EF/dXltHY3PgpLtrBInIR3S4BKt5hUHcpJbacrtX+Hcdu88ba/4c07UIL+3sLu6gtLGaz+zIUVPtEzQ7X8yQB9hUHdujDd9nUOzWn9btfoFv6+7/M9F3XH/PKL/v6f/iaN1x/zyi/7+n/4muEi8Q+N5rvS9Kms9P03ULyK8lklvbfcAsRi2MIorhwM+YVK+aem7P8ACYdN8faqLOx1LXm0630/U9Fn1OIQW8jPZmIR5DHf+9BEmeAh4xz1pf1+f+TBJs9B3XH/ADyi/wC/p/8AiaN1x/zyi/7+n/4mvLF8S+MNX1DSrWee20m6tvEAtJ0a0P75Gs2lUOkd04AGT8vmNk7G+XaVOxp3iLUrm6i0fQ4dK0u4ub/Uz9oktGeLbBcbCPLV0LSvu3E7h0Y4NO39fc/1F0v/AF1/yO73XH/PKL/v6f8A4mjdcf8APKL/AL+n/wCJrnbTWNXTxtJpmrNb21pIp+xItk5N3tRSzicSFUwSw8tkDYGQSMmunpARbrj/AJ5Rf9/T/wDE0brj/nlF/wB/T/8AE1LRQBFuuP8AnlF/39P/AMTRuuP+eUX/AH9P/wATUtFAEW64/wCeUX/f0/8AxNG64/55Rf8Af0//ABNS0UARbrj/AJ5Rf9/T/wDE1EzT/a4/3cedjYHmH1X/AGatVE3/AB+x/wDXN/5rQAbrj/nlF/39P/xNG64/55Rf9/T/APE1LRQBFuuP+eUX/f0//E0brj/nlF/39P8A8TUtFAEW64/55Rf9/T/8TRuuP+eUX/f0/wDxNS0UARbrj/nlF/39P/xNG64/55Rf9/T/APE1LRQBFuuP+eUX/f0//E0brj/nlF/39P8A8TUtFAEW64/55Rf9/T/8TRuuP+eUX/f0/wDxNS1yvg2yh0/WPFdvbeZsXVUOZZWlYk2luSSzksevc0LV/L/L/MDpbT/jyg/65r/KpaitP+PKD/rmv8qloAw7X/kYLP8A685v/bakv9D1DVPEFpcXmo239l2U63MNnFZkStIEKjfKZCCoLE4CKenPBytr/wAjBZ/9ec3/ALbVuUeYd0FV5LaC8jngu4I54Wcbo5UDKcBSMg8dRmrFZmr3tvpOk6nqt4J2hsYXuJFhchmVE3EAZAzgd8UPRDSbdkN8R6DB4i0K8sJRHHLcWs0EVy0QdoDJGULL07N2IyOKzr3wLpM3hqTR9OtLLTo57m3uLhoLNFE7Ryo5LqMbi2zGTnr36VLoWuwa1dz2k2nalpd3BFHObe9mQs0Um4K4MUjrglGGM5GORyM7n2ZP70v/AH9b/GnazFfby/UqWegaPp9rb2un6TY2tvbSGWCKC2REicggsoAwpIZhkc8n1qG78KeHr+G0ivtB0y5jsRttUms43FuOOEBHy9B0x0FaP2ZP70v/AH9b/Gj7Mn96X/v63+NICmvh3RF1Z9UXR7Aag7B2vBap5zMFKgl8ZJAJGc9Din6romla7bLba5plnqUCPvWK8t0mVWxjIDAjOCefesXWPE8Wla1LpsOi61qT29ol5cSWUiMsUbM6g7WlV2P7tvlRWPoCTituwls9T063vrGeSa2uYlmhkErgOjDIPJ9DRugejIbjw3od39h+16Lp8/8AZ+Psfm2qN9mxjHl5HyY2jpjoPSrMmmWEvnebY2z+fIks26FT5jpt2s3HJG1cE8jaPQVL9mT+9L/39b/Gj7Mn96X/AL+t/jQBi6/4P07X5rM3Nva+VFfC7uopLZZFvP3Lw7Xz14ccnPCgfS5ceGdBu9OttPutE06eysyGtraS0jaOAgYBRSMLjPapLW5sb28vLW2nleaxkWK4XfINjFFcDJ4Pysp4z1q19mT+9L/39b/GjoD13KL+GtCk8nzNF05vIga2i3WiHy4WGGjXjhCCQVHBqw2lacyyq1halZpEllBhXDum3Yx45K7FwT02jHQVN9mT+9L/AN/W/wAaq6jc2Ok2f2rUJ5YofMji3b5G+Z3CKMDJ5ZgPxoAwB4H83x1H4hu5NLUQzNMi2eliG4lfYY1M85kYyBVZsAKvJB7YrevNA0fUNQhv7/SbG6vIBiK4ntkeSMZzhWIyOeeKt/Zk/vS/9/W/xrK1LVLbTtY07TBb311dagXKLBJxHGm3fI5Z1G0b14GWOeAeaF0Qb3ZoLplgnl7bG2Xy52uExCvyytndIOOGO5st1O4+tQWXh3RNNvZLzTtHsLS6lZ2kngtUR3LEFiWAySSBn1wKp6trEGm3kdja2Oo6rqEieaLSykG5Y843s0kiIozwMsCecA4ONK0Vbq0imaK6t2dctDNIweM91OGIyPYkehI5oXdA99R50+yLTMbOAtPIssp8pf3jrjazcckbVwTyNo9Kr3vh/RtTjlj1HSLG7SaVZpFntkkDyKoVXII5YAAAnkAYq39mT+9L/wB/W/xo+zJ/el/7+t/jQBSk8N6HM0Rl0bT3MMDW0Ra1Q7ImGGjHHCkEgqODmp5tK0+4EwuLC1lFxALeYPCreZEM4jbI5X5m+U8cn1qb7Mn96X/v63+NVUubF9Wl0xZ5TeQwJcPHvk4jdmVTnpyUbjOeKPIPP+v62G6d4d0XR1jXSdHsLERb/LFtapHs34342gYztXPrtHpUn9jaX5EUP9m2flQwtbxR+Qu1ImADRgY4U7RkDg4HpVj7Mn96X/v63+NYus61FpN7b2Nvp2pare3EbzLbWUqhljQqGcmWRFwC6jGcnPAODg8gXkWE8J+HI9N/s9NA0tbLzBL9mFlGI946NtxjI7Gpb3w5oepWJstR0bT7u1MxuDBPao6eaSSX2kY3EsxJ68n1q0sMbwiRfP8AmXcFMjg/TBPBplrH9otYpZYbm1d1DNDLNl4z6HaxXP0JHvR6gvIitfD+jWWqSanZ6RY29/KnlyXcVsiyuvHylwMkfKvGew9K0Ki+zJ/el/7+t/jR9mT+9L/39b/GgCWiovsyf3pf+/rf40fZk/vS/wDf1v8AGgCWiovsyf3pf+/rf40fZk/vS/8Af1v8aAJaKi+zJ/el/wC/rf40fZk/vS/9/W/xoAlqJv8Aj9j/AOub/wA1o+zJ/el/7+t/jUTW6fa4xmTlGP8ArW9V96ALVFRfZk/vS/8Af1v8aPsyf3pf+/rf40AS0VF9mT+9L/39b/Gj7Mn96X/v63+NAEtFRfZk/vS/9/W/xo+zJ/el/wC/rf40AS0VF9mT+9L/AN/W/wAaPsyf3pf+/rf40AS0VF9mT+9L/wB/W/xo+zJ/el/7+t/jQBLUcVvBDJNJDDHG87h5WRQDIwULlj3OFAyewA7Un2ZP70v/AH9b/GsrRNXstea/FpFqEP2G5+zyC6EkLM3lo+QrHcBhx94A+2MEgGraf8eUH/XNf5VLUVp/x5Qf9c1/lUtAGHa/8jBZ/wDXnN/7bVyDSXA+Il1q17b6Tdi31mHTLdJ7ZnvIFeBDuikLYjHzlioQ7huO7oB19r/yMFn/ANec3/ttWg+j6ZJrEerSadaNqUcflpeNApmROflD43AcnjPc0LSSf9f10+YnrFr+v66/IuVh+K7C51TwZ4hsLGPzbq6sp4YY9wXe7Q4UZJAGSepNblQCZY5ZQwc/MD8qM3YegpNXViovlaaPM4/DmujQ9Xjs9CvI7W7gtYHsdWuYL65lKufNdGlkkTAjPyJI+wMCdgyd1az8F6pZaToUZ8Oy3tzY3lwYIb+OymtrWGS4DhnVXTy3CjKmAELyNpGAfV/tKf3Zf+/Tf4UfaU/uy/8Afpv8Kq+tybacp5ZfeDtYmsfE9rpGivaJeSpMbm4S0S8v/wDSN8sQlVnV4ymVUTKMbgrbgTi74d8DCHVtAefRrxNP08XknlaotkDBK7QNGUjtv3YGUdhtHDAk4JBr0b7Sn92X/v03+FH2lP7sv/fpv8KUfd2G9TlNRXWtO8f3mo6boNxqUN3pcFtFNHcQxxxypLMx8ze4cLiRSSqucZwCeK5PUvh3qEOqaKtxDqOp2djp0EMUmliy3W1wkjNJIBdDKBsqQ0TBvkwei16v9pT+7L/36b/Cj7Sn92X/AL9N/hQtGn2/4P8AmNu9/P8A4H+R5V4Y0Se78RNfafoRiubbxBqMsutSSph4fNmXyBhvMwWIyu3Z1bO6qen+A9dlsdWS50R7X+0m057m3/0OGJ5Y7vzJzGsGPkCHhpCZCOCcgCvXLcWlojJa23kK7tIyx27KGdjlmOB1JJJPcmpftKf3Zf8Av03+FC0t5WCTu2/P9bnmF78PFhuPElno/heC1hv72wmt7qzEEC+Qj2/mxgqyupBjkfGAO4O44qe4+HQtrjVJ9I0O3gkg1myuNIaIov2eEGAz+Vz+7BIm3KMbueDkV6R9pT+7L/36b/Cj7Sn92X/v03+FNNq3l/wP8gvfc8jn8B6w194plmsNTuNSv4NQjt72NrAW86So3lRs5C3PAKLtYlFKjB2gYt678NgYtQh03w5bT2UkGmz/AGbER8+5iuHM5w5A8xojtLsRu3YLHmvUftKf3Zf+/Tf4UfaU/uy/9+m/wpLRJdrfgDd3f+tbf5fmct4u0aXUtE0ZIND+22FpcpLd6HmJfOhETKI9rMIm2OyNtLbfk4JwM42heBWg8T6Dql3oVtBHaRXxjRxHI9gryxtbxA5P3V8zATKplgDjBPoX2lP7sv8A36b/AAo+0p/dl/79N/hTTs7/ANf1+IuiX9f1qc5qUOqaP4ul1rTtJl1i2vrSK2ngtpYkmhaNpGVh5rIrKfMYH5gQQMA5OOf8V+HtQ1zVZLy78LnUzdaYkFgHuIc6Rc7nJkJZgUJ3RkvDvb91gZwpPof2lP7sv/fpv8KPtKf3Zf8Av03+FTYd9b/10/yPNtU+H1zfXOtXs1gLrUZNSsHtLsyhX8lEt0nZDu+TcqyhhwWAxyMVQ1/wyujXsFjFoCy6PceJ45rPS7Vo40lj/s9xIqoWVVBdXyjFVbnPDc+sfaU/uy/9+m/wqKYWlw8L3Ft5rQP5kTPbsxjfBG5cjg4YjI7E+tVf+vu/yBaK3lb8LHA6ZoWs6DJo2oW2gzSRQHUI10u2nhDWUU8iPEuWkCbVEeCEY43YUECsjSfh/qtlajy9EhtNXufC0dgmpxtDus7tVlU7nB38ho1DIG4XnAAr1r7Sn92X/v03+FH2lP7sv/fpv8KXS39df8wUmv687nlOjfD5jaaZaT+H76K0XVY7m+tNSXTxCVFtMhZUtcKwLMgO5dzcZGAcdf44sLi8toBp2h395fRpJ9jvtOuoreSykIAGWd1Ow8ZUBwdvzKeM9P8AaU/uy/8Afpv8KPtKf3Zf+/Tf4U5e9/XyEtP682/1OK0/Q72Dxk954j0Fdau5RE1trMYgZLDEIV41EjCRBvDt+7U58znoa5MeANZ/4ps6tp+p3EVjpNtAkenPYO9jcRuS7ZuM7cgp88LBvk56LXsP2lP7sv8A36b/AAo+0p/dl/79N/hQnZ3/AK6/5h0a7nnmn+Brmy1ex1aHTY4dT/4SC9nuLwOhk+xy/aNoJzyhLRnZ2JzgHJqmfCOpSeAdQ0qDw69nrrLCL7VFe1LazslDS4kLMzb1DcTIF+faRjNen/aU/uy/9+m/wo+0p/dl/wC/Tf4Uulh31v8A1u3+pz/gPRxofhv7GtnqFkgnd1t79bRWQHB+VbX90q5ycDByST1rpai+0p/dl/79N/hR9pT+7L/36b/Cm3clKxLRUX2lP7sv/fpv8KPtKf3Zf+/Tf4UhktFRfaU/uy/9+m/wo+0p/dl/79N/hQBLUTf8fsf/AFzf+a0faU/uy/8Afpv8Kia4T7XGcSfcYf6pvVfagC1RUX2lP7sv/fpv8KPtKf3Zf+/Tf4UAS0VF9pT+7L/36b/Cj7Sn92X/AL9N/hQBLRUX2lP7sv8A36b/AAo+0p/dl/79N/hQBLRUX2lP7sv/AH6b/Cj7Sn92X/v03+FAEtFRfaU/uy/9+m/wo+0p/dl/79N/hQBLWLomn3NnrXiKe4j2RXt+k0Dbgd6C2hQnjp8yMOfStX7Sn92X/v03+FH2lP7sv/fpv8KFp/X9dgC0/wCPKD/rmv8AKpaitP8Ajyg/65r/ACqWgDDtf+Rgs/8Arzm/9tqi1DxVNp2tW1hP4c1Vorq6W2hvEe1MTsQTkL53mYADE/JkBScVLa/8jBZ/9ec3/ttU0lncXPi+K5niIs7O0PkPvGGmkYh/lznKqgGT/wA9DjvR1QdGa1ZWu6sNC8Patqxi877FA8/l7tu/bHnGe3TrWrVeS3hu4bq2uY1lhmzHJGwyGUqAQfwpO9tBxtfUw4VvtAsLjXfEviSa5t4bZp7uAW0S28IA3ExBU8zAxwGdyR781lWHxY0bVLOOXT7K8u55bxbNLW1ltp3Z2jeRTujmaMAiNhywII+YAc1qW/gqGPT7jTb3WdV1HSprd7ZbC7ljKRxsMYDqglbCnALux79eafbeETH9gOoa9qmqHTrlbm2N35AKkRvHtJjiUsCJCTnJyBz1zWl/L/g6krbz1/LT8TLtvH9xqPifRbLT9EvDZ30V39paURLJbSwSrGyn97/CS27AbO5dpPOILr4u6JY6Hp2p3lleWyamrSWkVzNawNLEqqWkBkmVQMsBtLBickKRzW1D4Ks7XUbW9tL69gmtrm6n+UxkSi4kEkkbBkPy7gMYwwA+91qL/hBLWDT9Gg0zVNS06fR7c2tveW7RNK0TBQyOHjZGB2Kfu5BUYxzS6f15/wDAX3+Relyp4w8R36W3hpPDovGi1u9RGu7NYC6RGJpBtEx2gsF6lT8obo23N628bWlzqy2i6fqAtZLqSyi1Jkj+zyzpuDIMPvHKONxQKSpweRnTvNEhv20p7u4nkl0u4FxHJlQZXEbx5cBcchycADnHbis618F2dpqwukv757VLqS8h013T7PDPJu3SDCbzy7nazlQWJAGBgfW3n+n/AAfmT0Xe3+f/AAPkVLjxfJqnwu1XxJpFrd6eV06a4s3u0j3NiIsrhQzDGeMN1weMYJfcePrS01aaxl0zUpEtbqC0ur5I4/IhkmVDHklwxBMij5VOD1wME6MXhayi8D/8IqstwbH7CbHzCy+b5ZTZnOMbsH0x7VFceDtPuU1FZJrkDULy2vJdrL8rweVsC/L0PkrnOTycEcYrTm8v+D/lcbtb7/0sc54f8bagbW/vtZsdVmnutYm0/TtLRLXJ8tnG1Cr9QsbF2kfGVO3jGduDx1a3N1ptpBpepPdXzTq0GyMNamF0SXzCXA+UuDlSwIHy5yMyTeCrJ9PW3t729tJotRl1KC7hZPNgmlZy+3chUriR1wyng+uDUun+EbHTr2yu0uLqa5tI7hTLK6kztOyNI74UfMSgxtwBnAGMAT0/rt/nuDtd28/zf/A/EyLP4m22oxWj2PhzXZmv7Y3VknkwqbmNceYV3SgLt3LneV3ZG3cCKmvPiXotkmgyyJMbfXVia1l82BCPMZVAMTSCViC652I2O9aOmeELDSv7G+zzXLf2NZSWVv5jKdyPsyWwoyf3a9MDk8Vlx/DTTYI7OK31PU4YLe3tbd4keLFwtu5eLeTHu4YnO0qDnkU9L/P8Nf0t8wfWxX0Txtdaots+sWN9pLPrdxp8QQQFJgnnYV/ncgKIvmK7csBjK5q3H8R9PbT5r+bTNUt7P7DNqFpPLHHtvYYxuZowHJB2kECQISD04OLcHgmyhuklN7eyRR6nJqcVu5j2RyyLIHAwgYqTKxwSSDjBA4qrD8OtPTTZ9Pm1LUrmzNjLp9rDLJHixgkG1ljIQEnAUBpC5AXrycrp/Xb/AD/Ufu83l/wX+hpaF4ph1y+ubM6ffafcQRR3AjvURTLDIWCSLtZuCUbhsMMcgVyep6zd+FPFmpT634t1SXSNPsbe7+zvFZKJHmmljEZbyVwuVQAllxklmxyO2ttDtrTW5NUjeUzyWcVmVYjbsjZ2U4xnOZDnnHTiqWs+DtP1u6vLm6muo5rq3gg3wyBTCYZWljkTjhw7Z5yOBx1y3a6aJWzT8v0v+pnWHxI03V9PtptFsbzUru5eVVsbOW2kkUR7d7GQS+TtG9ORIfvgdcgVofHM1j4p1mz1Wzv5bKHUbW1jnjij8qy86GHartuBbMkh5XftzzgYrVn8IS3C2s0niTV/7StDIItSVbUTeW+N0RXyfLKkqp5TOVHNS3Hg6xuY9QWa4umOoXlteTNuUHzIPK24+XAB8lcj3OMcYFa+v9ar9AKtp4+srvWI7L+zdSghlvZ7BL6aOMQNPDv3IMOW5EbENt2npnOQM3U/iGtz4V1O60yy1DT5H0m5vtKvbmKMx3QjTIdAGYjqrbZFUkHocHG5H4P0+NbUCW4YW2pzamgZl+aWXzNyn5fu/vmwOvA5PehD8OtPTTZ9Pm1LUrmzNjLp9rDLJHixgkG1ljIQEnAUBpC5AXrycz0/rt/nsWuVTv0v+v8AkSN45tre6+zyWGoXENu8EF7qMUcfkW8sqqVVgXDn76ElUYDcMkYOEm8f2seoJbx6Pq00U13LZ291HFH5VxNGjs6rlwwwY2XLKAT0JHNTS+B7KTU3uFv7+O2nkimutPR4/IuZIgoR3yhcHCJkKyqdoyDk551/Dmpr42tZrKx1pNK0+/uNSMdzc2pgd2jkG23VW8zLvKW/ekKozjbnFU9X/Xl/wbELSP8AXZ/rY7LTfEVnq1xbR2CyypcWKXwmCjYkbnCBuc7mw2AAfunOOM8P4d8S6xf+NDbDWb252anfx3Vhc2UcVvFaRO6K8UvlKXZW8lTh3++cgdR1XgzQW0exvLie3e2uNQupLlrd5A5t0JOyLIJHyg5wCQCzYJHNSx+ELGGOEQz3SPDqM2oLIHXdulZmkjPy4MZ3sMYzjHOQDR1v/X9L/hg+zb+tn+f9bHP2fxj8Nahb3c1kJZxB5ZjVLi2LTh5BGpA87918zLxN5Z56dcXNa+J2jeHtRstP1mGa0vLmJJpIJri2RrZGYqCwMo3nIbiLzDx05GbVl4Lk03SZNLsPE2sQ2HliK3gZLWQWsefuIXgYsMfL85fj35plp4AtdLNk2h6vqWlSW1olm7W3kEXMaMWUOrxMowWfGwLgMQOMACtdf1/Xn+APrYju/iVo9jrer6Vcwzrc6VZzXsixzW8pkjiCs2FSUuhIYECRUz2q5F4w+0XVta2uhapNdzRrPLAvkK1rCzFUkkLShQG2sQqlnwDlQeKpt8N9Of7akmp6m9vdQ3kK25eIJbrdNulKYj3E7uQXLY+nFadz4XSTVrfUrDU77TbiOFLeY23lEXUSHKrIJI26EtgrtPzHnphLZX/rf/gfiN+Xn+n/AAfnYxPDfjeWfUG07VrW+Yz6ve2NvfmFFg3RySlIuCGJEcf3tpUkY3bsiu3rBi8IWEP2TbNcn7Lqk2qJll5ll8zcp+X7v75sDrwOT33qfRBL4nbb/gv9LBRRRSEFRN/x+x/9c3/mtS1E3/H7H/1zf+a0AS0UUUAFFFFABRRRQAUUUUAFFFFABXO+FrzVJ9Q8QW2sXsd29lqCxRNFAIVVDbwybQuSernksTz1xgDoqpWOlwWF7qN1C0jPqFwtxKHIwrCJI8Lx0xGOuec0Ld+n6oCxaf8AHlB/1zX+VS1Faf8AHlB/1zX+VS0AYdr/AMjBZ/8AXnN/7bVuVh2v/IwWf/XnN/7bVgza7qq/EgWa6hKLUXi2/wBkFuhtfJNvvLNPtyJ/MwBHvztwdhB30buwdGzuqgAlMsvluijcOGQnsPcVPWN4lhvrjwprcOkF1v5LWVbco21vMMfy4PY56Gk3ZXHFXdh9prun3+qXGmWOt6Zc39tnz7SGRXliwcHcgfK8kDkVo7bj/nrF/wB+j/8AFVxcfizQV8G3EXglrK41PTNOlktdJjTM1u6IRseEfOhz8pBAJJx1NYb+KtUGkXzeHvFy67CDp4TU3t4JBBNLcrHJF+6VUYbCDtI3rnluVxVteVCWqv8A10/zPUNtx/z1i/79H/4qjbcf89Yv+/R/+Krze41PxJplxqjv4kuLqPRtZsrMRy2tuPtUU5g3CUrGOR5xClNnQZDU3RvFmpXniuO2HiRbu6OtXlpJoqwQjyrSNpQsrYHmDG1RvztPC4LcldL/ANdP8xtNK/8AXX/I9K23H/PWL/v0f/iqNtx/z1i/79H/AOKrxzVfF174k8FJpEetiXUJPDOoSatDapE0qXMaxDY67TsJzIpUAHBOMEAi1f8AizVrXUtFs9L8WaZHppsIZ4NQ1G/ggTUXMjK6bhbusm0Ko2xmJhu6nOQ0ru39df8AIJaK/r+Fv8z1nbcf89Yv+/R/+Kqhp+t2OrXFzb6VrOm301o2y5jtpFkaFskYcK5KnIPB9DWV4Rub/UrPWLvVtRmuo/7Ru7aKARIqwxRTSIAuxQxJAAJJPQY5yTyFl4obSNDutN8Nanp+s2GlWlukOs2iLI1hbmVY3WbaSrOkYMmRtyEO5BjLLr/X9f1941a687foemtc7LyO0e9tVuZUZ44SuHdVwGIXdkgbhk9sj1qbbcf89Yv+/R/+Krz6/wDFF9ZQWx8L67/wlCNpOpXMcuIJvtM8XleWuYEUHBdhhQCc85OKydH8S+INTs9Mt4fGGn3RvtVjge60+6t72aGNraZ2RsW8SocxqVBQkHOSw+Wmlf8ArzsHS/r+Cuer7bj/AJ6xf9+j/wDFUbbj/nrF/wB+j/8AFV5qvirUEs7C117xN/Y1mLzULWfXWS3jaR4JikUZMiGJGdAzH5efLO3FPbxRrTfFI6Y2u6ZaWMU0EcFpd3scUmoQvGpMqRmAtKxYsAUlRQUwV4O5LV2E9L36HZaj4l0nR76Ky1bxDpNjdzAGK3uZ0jkkBOAQrOCckEcd61dtx/z1i/79H/4quF1jWdC0z4latb+I7u0jivNBto0tZ2Ba7Hm3AaNI+shOcbVBJyBjmuafW/E3h5/Dmhzatp+hRwaVbSD+1b2O2FzJuKvCWeGXzCiqgKo8bfNnccggjrbz/wCD/kOStfy/4H+Z6/tuP+esX/fo/wDxVG24/wCesX/fo/8AxVeaaR4u1G48ULCfEQvbkazeWsuiR28WY7SNpdspwPMyNigPnaeFwWOTk6f4717ULHVpLLXEkjdtOe1k3wXMtoJ7vy3jk2QxorhCAYzvKn+M5oXvWt1Bqzaf9a2PYdtx/wA9Yv8Av0f/AIqjbcf89Yv+/R/+KryaS51Hw7qnjCOy8Uzy6q2pacqJeRWzMY5PssZmMaRoSMMyZGF4/vc1o3Gp+JNMuNUd/ElxdR6NrNlZiOW1tx9qinMG4SlYxyPOIUps6DIamle1uv8AwP8AMGj0jbcf89Yv+/R/+Ko23H/PWL/v0f8A4qvI5/GviVb7xS8muaZaS2MGoCHSpLuP7REIkYwyrbmAOchVfcZXQhiQo4AXxdPrA0/UNO1TxLcvBCmk6m115FvH5G+7KyD/AFeBGuwOC2SNvzMwyClrZ97fiFrO39dP80et7bj/AJ6xf9+j/wDFUbbj/nrF/wB+j/8AFUlm6SWMDxXP2tGjUrcZU+cMcPlQF568ADnipqb0ZK1RFtuP+esX/fo//FUbbj/nrF/36P8A8VUtFIZFtuP+esX/AH6P/wAVRtuP+esX/fo//FVLRQBFtuP+esX/AH6P/wAVRtuP+esX/fo//FVLRQBFtuP+esX/AH6P/wAVRtuP+esX/fo//FVLRQBFtuP+esX/AH6P/wAVRtuP+esX/fo//FVLRQBFtuP+esX/AH6P/wAVUTLP9rj/AHkedjYPln1X/aq1UTf8fsf/AFzf+a0AG24/56xf9+j/APFUbbj/AJ6xf9+j/wDFVLRQBFtuP+esX/fo/wDxVG24/wCesX/fo/8AxVS0UARbbj/nrF/36P8A8VRtuP8AnrF/36P/AMVUtFAEW24/56xf9+j/APFUbbj/AJ6xf9+j/wDFVLRQBFtuP+esX/fo/wDxVG24/wCesX/fo/8AxVS0UARbbj/nrF/36P8A8VUMFz9pknjtr21me3k8uZYxuMT4DbWAbg4YHB7EetW65bwfZ22n6z4qtrC2htbePVI9kUMYRFzaW5OAOBySaFq36fqv8wOktP8Ajyg/65r/ACqWorT/AI8oP+ua/wAqloAw7X/kYLP/AK85v/bao38IWr62b4318LdrlbxtODJ9nadQAJD8m/PCnaHC5Gduc1Ja/wDIwWf/AF5zf+21aB1jTF1hdJbUbQak0fmrZGdfOKf3tmd2ODzjFHW4t1Zlyo4/9ZL/AL//ALKKkrPv7ix0+xvtR1Py1t7VGllkdc7UVASf50N21KSu7I0KK5/SbnU72YTal4ds9PsJE3xObsPcJ3Alj8sKhx12yPg/mJrPXfC+oWUl5YappF1axSLFJPBcROiOxAVSwOASSAB1ORQLc2qoaRpFvottPBavI6z3U10xkIJDyyNIwGAOMsce3rVG38R+E7uS0jtdZ0WZ71mW1WO6iYzlTghAD8xB4OM4qeHVvDtxqn9mwX+ly3+GP2VJozLhWKsdgOeCCDxwQRQHka1Fc/rPiTw1ofh+XWLy6sWtVtXuozHJGTcIuP8AV5IDZLKBzjLKO4p6eIvCrwadN/amkoup8WW64iH2k5AxHz85yQMDPPFAbG7RWZb32iXkt1DYz2N3NZ5+0Q27JI8RywwyjkHKsMHupHasrw1rZ1vR/wC2b/S9OsdKmgFzbXCXglPl8k+aDGojYDGQGcA7hnjkA6iisSz1fRtTntW0m50e9s7iOVxNBdo7MUKg7FUEMBu+Y7htO3g54ZH4k8JTaa2oRazor2SyGJrlbqIxhwu8qWzjIUFsegzQBvUVjT614ZtdHi1a51PSYdNmIEV7JcRrDJnphydp6Hoe1SNqnh9dVg0xr7TBqFzH5kFoZo/NlTBO5UzlhgE5A7GgDVorGiv7eXxbdaJ9giH2eyhu/O4+bzHkXbtxxjy85z36cVU1XxNoFhp2tSWU2m39/o9pLc3FhFPH5q7FJwwGSmeBkjvQOzvb+tTV0jSLfRbaeC1eR1nuprpjIQSHlkaRgMAcZY49vWr9YtnrXh2+sLm7hvtMaKyH+mMk8bLakDJEhz8pHOc46Ug8QeFTpKaoNW0c6fI5RLv7TF5TMASQHzgkBScZ7H0p67CvfXubdFc1qvi/wlpNjqtxPqOmSvpMLTXdtDPE00YHRSpYYJJCgHGSQO9TDxL4TFrYXEmraPFHqQ/0MyXMQ+0HIGE5+YgkDjPNLcDforJbVfDyasNLe+0xdQJ2i0M0YlJwDjZnPRgenQj1q5CNPuHmS3FtK0D+XKqbWMbYB2tjocEHB7EUAWqKi+yW/wDz7xf98Cj7Jb/8+8X/AHwKAJaKi+yW/wDz7xf98Cj7Jb/8+8X/AHwKAJaKi+yW/wDz7xf98Cj7Jb/8+8X/AHwKAJaKi+yW/wDz7xf98Cj7Jb/8+8X/AHwKAJaKi+yW/wDz7xf98Cj7Jb/8+8X/AHwKAJaKi+yW/wDz7xf98Cj7Jb/8+8X/AHwKAJaib/j9j/65v/NaPslv/wA+8X/fAqJraD7XGPIjwUYkbB6rQBaoqL7Jb/8APvF/3wKPslv/AM+8X/fAoAloqL7Jb/8APvF/3wKPslv/AM+8X/fAoAloqL7Jb/8APvF/3wKPslv/AM+8X/fAoAloqL7Jb/8APvF/3wKPslv/AM+8X/fAoAloqL7Jb/8APvF/3wKPslv/AM+8X/fAoAloqL7Jb/8APvF/3wKxfD+prrU+qxXOijTn0+7Fv5crI7MDFHIGOzKj/WdAW6dewNwNq0/48oP+ua/yqWorT/jyg/65r/KpaAMO1/5GCz/685v/AG2rj7wSx/EKPR7K40m8kl1mPVJViuCb21UQhW8yIKQq7RgSFhkOqbec12Fr/wAjBZ/9ec3/ALbVuULSSf8AW9/zSDdNf12/UKz9V0yLWtH1LTLhmSK8ieB2Q4ZQyAZHvzWhUAkZJZQsLv8AMOVK+g9TSeqsNOzujmLjSvFOueG9R0DXf7KgiubGW1/tG0mkd5WZSocwMiiPrkjzH9M9xmX3gvWNftbl9YttHtZpUsbf7NbyvNFJFBcCVi7NGp5G5VTaQP7x3cd55z/8+0v5r/8AFUec/wDz7S/mv/xVVfXmF0t/XT/JHHX/AIJubiTXpLf7Gj6lq9jfwscgqsHkbtxC8N+6fGM9RyMnGR4U0TUNSvnkFvp8GnWniXUL1rlHb7TLIJZo9hTZgfeGX3k7Rt2969I85/8An2l/Nf8A4qjzn/59pfzX/wCKpdLf10/yQ27xt/WzX6nm0fgDxFPpUGk3b6ZDa2Oh3uk288VxJI83nLGqSOpjUJxHyoLdeCasal4I1jUtattUu7O0uDLp8Vnd2Sa9d2scZjd2DK0UY85SHOVdBgjg8mvQfOf/AJ9pfzX/AOKo85/+faX81/8Aiqd3e/8AXX/Nieqs/wCtv8kZPhnRJ9D06+hlaDzbnUbu7Vo8kYlmZ13cDkAgH6da5W48D61qUmqXctvpGkS3Qgl+x2dxJNBe3EUwl8yfMaY3bQhIVjgnJbAFegec/wDz7S/mv/xVHnP/AM+0v5r/APFUuqfYbd7+ev6nHa94V1nxYsban9i0x20u/sJRbXL3AQz+WEZSY49wAQ5GB2Az1qlpfgTUEm0qW/srOCSy1GG6mY6zdaj5yxwSoNvnplCGkBCgkdecgZ77zn/59pfzX/4qjzn/AOfaX81/+Kpp22/rW4nqrPz/AB0OItvCGt6NeWuo6Wmm3lxbXeostpcXDwxCK5m8wMrrG5V1wARtIIZufU/4Qq/Xx9cazJBDd2t5dQXbZ1q6gNs6RqhAgRTFNjYCC2084PQV2/nP/wA+0v5r/wDFUec//PtL+a//ABVJaW8get/M5y803X7bx5LrGk2mm3dpc2MFpKLm+kgkjKSSsWAWFw3Eg6leRXN3/gDxHqeoavcXt1ayvdafqFnBNJqE7hhPjyv3JXy4QqqFbZktjJJNej+c/wDz7S/mv/xVHnP/AM+0v5r/APFUraff+JXM07+n4HATeB9Zv7S4e5i0iyuIoLKCztraR3glFrN5w8wmNSoY4XaA2wZOWzirsfhDVLvVrXVtRTT7e4OspqFxbW8jSRoqWzwrtcopdySrElVwOP4cnsvOf/n2l/Nf/iqPOf8A59pfzX/4qqu73+f6k7K3y/C35HnN34A8QapqmrT6jeW7m6sNQs4rhr+eTKzlfKxAVEcIRVCnZktjJJNXb/wt4iu3uZVttGZ9V0hNLvUmupHW1CNJ88Z8r96CJSShEfKj5ucjufOf/n2l/Nf/AIqjzn/59pfzX/4ql0t/XX/MfM/6+T/RHB6xokPh7SPEd5fXtvDJe3NtNpkhb9688MMSxJjjc5kiOFGcg47kV1nhvT5tN0GCO92m9l3T3bKODM5LPj2BJA9gK0POf/n2l/Nf/iqPOf8A59pfzX/4qnd/1/X9WRNtkun9f18yWiovOf8A59pfzX/4qjzn/wCfaX81/wDiqQyWiovOf/n2l/Nf/iqPOf8A59pfzX/4qgCWiovOf/n2l/Nf/iqPOf8A59pfzX/4qgCWiovOf/n2l/Nf/iqPOf8A59pfzX/4qgCWiovOf/n2l/Nf/iqPOf8A59pfzX/4qgCWiovOf/n2l/Nf/iqPOf8A59pfzX/4qgCWom/4/Y/+ub/zWjzn/wCfaX81/wDiqiaV/tcZ+zyfcbjK+q+9AFqiovOf/n2l/Nf/AIqjzn/59pfzX/4qgCWiovOf/n2l/Nf/AIqjzn/59pfzX/4qgCWiovOf/n2l/Nf/AIqjzn/59pfzX/4qgCWiovOf/n2l/Nf/AIqjzn/59pfzX/4qgCWiovOf/n2l/Nf/AIqjzn/59pfzX/4qgCWsnSNLnsNW1y6maNk1C8S4iCE5VRbxR4bjrmM9M8YrR85/+faX81/+Ko85/wDn2l/Nf/iqNgC0/wCPKD/rmv8AKpaitP8Ajyg/65r/ACqWgDDtf+Rgs/8Arzm/9tqLjxG9r4sTSLjT5IrZrKa7F88q7W8sxghUGTj97yW29OAc5Ba/8jBZ/wDXnN/7bUup6HJqPiO0vS6C2j0+7tJVJO8mZoSCBjGMRtnnuPwTv08/ydvxHG19Sv4d8T3Wr3iwajpa6ebm0W+s9tz5plhY4+cbV2SLlcqNwG4YY81b8R6lPo3hfWtStI1kns7aSaNWBILLHkZA5xxWd4Z0HV7O+guddez3WFgunW32R2bzlBBaV9yrsLbE+QbguD8zZ46RVVzMrgMrNggjII2iqmlbTz/N2/Cwotp3l5fkr/jc5oWtp4T0O68S3WpatqL29m9xcvJevIlwAu4lYS3lITjjYqgdOmapXnjvVNJtLn+2PD0S30a2skNvaah5qzJPOIcb2jTa6k8gjaePm642LHwToOnLLHbWkptpYnhNnNdzS2yI33lSB3MaDBIwqjg46cUW3gnQbWzltktZ5UleF3a5vJp5D5Lh4l3u5YKrDIUHbyeOTk6+X9f1/luC0Xn/AMN/wTFPjzV7e4nTUPDtvDHYahBYX8kWpGTY0xj8t4gYh5gxKhbdsI5xuqey8cXtzqcaz6IkGmy6pcaWl19tDSGWNpAG8rZ9w+Wed24E/dIG470/hvSrn7Z59ru+3XMV1cfvHG+WLZ5bcHjHlpwMA45zk1j+HPA1rpV9PqN+pmvm1C7uoSt1K0UYlkchhETsEmx9pYLnqMkUun9eX/B/rQbtbTf/AIf/AIBj658QtQbwLb3+jWEcF7qOg3WpxNJccWxiWM4/1ZDnEmRkAEqAcA5E958QtS02/sNMl8PyXt8bWK5vvsX2idYlkdlXYY7chmwjHEnlL0AY8kbMHw/8N28srpYyv5kE1tslvJpESKXHmRojOVRTgcKABjjFSP4I0R3tJNt+k1pF5EdxFqlykrR7twR5FkDSKDkgOWAycdaatf8Arz/4AS1Wnn+n/BHeHtcvfECam7WMVlBbXc9nby/aDK0rRSPGzFNoCj5QR8xPJHGATy2kay3hO0uYdcj1WXxF5cKyQ3F+89vfySSiJZYCzFYkMjgFQqbQRlMBa7yy0uz062mt7OAJFPNLPIpYtueRiznknqWJx05rKh8DaBDbXcDWs9yt5EIZXvL2e4cIDkKryOzIAeRtIwcEcgGl1/r+v620QO2vr+H9f8OZuq+KptAuLe58SaaIZ49NvryRLDUJJo1SHyjgKyRh2YMMFlG3BAPJqla/ETVrm1tR/wAIu8d7d36WcMc8lxbxHdDJIH3zW6MceWQwVDgEEFj8tdNH4S0dY4kmgmvBFDNbqb67luSY5tvmIxlZiwOxeDnGMDFR2Hg7RtOW2ECXkgtJlntxdajcXAhcIyDb5jtgbXYYHHPTgYat1/rX/IOn3/lp+JlWnji/1KKztNO0aBtZne6WW2nvikEItpRFIfOEbFssV24TkHnbikPj24bxu2gwaHcTwwTR211dxR3DiOR41fgrCY9gDrkvIh6nb0zrXPgzQ7qBImt54SlzLdJLbXk0EqySsWkIkjcOAxYkqDjpxwMSHwppP9tjV40u4bz5PMaC/njWYoMKZUVwspA4y4JwAOgpLfUT62MzxR43bw5rljYx2KXsc7xLcGJ5jLbiSURqxCwsgXJJBkkTO1gMkVXs/Hd5Pq8Ed1oscGmT6nc6ZHdi93yGWHzTuMWwAIwiPO7IPGMfMdrU/CGi6vqiahf20j3C+XnZdSxo/lvvjLorBXKscgsDipk8N6TH5Gy0x9nvZL+P94/yzyb979ec+Y/B454HAoW39eX/AARu39ej/W3yOW0rxHq+teNvD01xZHT9OvtMu7m3jS8MnnJug2NKm0BXAboC4G44brV6OzPinxJrUWpX9/BBpdwlvbWtley2uMwpIZWMZVnJLkAElQE4Gc1o6V4J0HRNRjvtNs5I54o5IoS91LIsMbkFkRGYqi5UYVQAMcAVLqnhPSNX1Bb+6iuYrsR+U09nezWryIDkK5idd6g5wGyBk46mjTT5/ncDJu/GV5Z6lexwaUt1pml3MNne3j3eybzJFQ5SIJtdQJUJJdT97AOBmp/wn2rS3iR23huFoLjU7jSraWTUdpeeIyfMyiM7YyIm+blgeNhGGO/N4P0OfWF1J7NhOrRuUS4kSGRo/uM8IYRuy4GGZSRtXB+UYnj8N6VF5Gy1x9nvZL+L94/yzyb979ec+Y/B454HAprz/rb/AIP/AAQ0tp/Wj/WxzcHjzVL59Os9P8Pwyaldm9SWKXUNkUD2sqxuPMEZLKS3BC56ZAySskfxESbSL+/i01ttnoSaxsacZYnzQYsgEDBhPzDOc9OOZNS8AWV94g06eNXgsIFvXmWC9ngmM1xJG5ZXRgwBKvkbgOQMY6XtR8B+HdVt4be6sZFghtPsQit7qaBGgxgRusbqHUdg2cZOOtLp/Xn/AMAfup/13/yOcXx5rOmyeKb3VrCGeysbu3gsIbeZ5JC80cOxCqw5IJl3EjewJKqrYGdDTPHOp6lfaTZDw6be5vjcGb7TLNAsUcLRZdBLArvkS8ZRfmUjp81bNx4N0K7a/NxZu66hGkdzH9plCPsChGCBtquNi4cAMNo54qaw8M6bp1xb3EIu5p7ZZUhlu76e5dVk2bxukdiQfLXg9McYyctWvqT0X9dDl9W8+6+LYtHttcvLaLTrWVV07U2tobdmnmBklQTx7wQoyArnC4x2Nqz8d3k+rwR3WixwaZPqdzpkd2L3fIZYfNO4xbAAjCI87sg8Yx8x29Q8KaXqWtJq1x9tjvVjSLzLXUbi3DorFlVljdVYAs33gepqVPDekx+RstMfZ72S/i/eP8s8m/e/XnPmPweOeBwKXS3r+f8AkOVm2/T8v87HIXnxAvH0h5dR0AwWV7o13qdq8GqMsrxRKhCsVQGJ2EgOVZtvYk9Lk3jy9t9QuY00NH02xvbSzuLpr794DcLEVZY9h3bTMA2WHHIySQKekfDr/ieXE2q6bZ2WmGwnsY7K21O4u96TMpcAyKnkoFQARxjA3E8YFda/hjR5I7qN7TK3c8NxMPNf55Itnlt14x5ScDg45zk1Sto3/Wv+QO23r+n/AAf+CcsPikBe6tJJoV7/AGTpq3WbxIZyXa33BskwiEAlGC4lY5xkDJwWvxE1a6tbVf8AhF2ivbu/SzhjuJLi3iIaGSTdvmtkY48sghUIGQQT0ro18G6Il9d3S20w+2+Ybm2+1zfZpi4w5a33+US3c7ck89eaSw8HaNpy2wgS8kFpMs9uLrUbi4ELhGQbfMdsDa7DA456cDEx6X8v+CD628/y0/EwLfxlfC4h07QtDF3c3NzqQxeaq4Vfs04RiXZHYBt/CgYXhenIS4+JF1JoJ1bR9BF3BBoyatdrPeiFo1dXKxphG3t+7bOdoAxgknFdTa+G9Jsr6O7trTZPG1wyv5jnBncPLwTj5mUH2xxiuR8V/Doalp8GlaBplnb2wsRp5vJdUuI3hhzjaYVUrcBQSVEj4DHtySdEv66/8D+t37t2/wCt/wDI76CXz7aKXG3zEDYznGRmpKbFGIYUjT7qKFH0FOpu19CI3srhUTf8fsf/AFzf+a1LUTf8fsf/AFzf+a0hktFFFABRRRQAUUUUAFFFFABRRRQAVzPhIXUWqeJbW71G7v8A7PqSLHJdOCyqbWBtoCgKoyx4UAc56kmumqtbafbWdzdz28eyW9lE07bid7hFQHnp8qKOPShaN+n6oCS0/wCPKD/rmv8AKpaitP8Ajyg/65r/ACqWgDDtf+Rgs/8Arzm/9tq3Kw7X/kYLP/rzm/8AbaqtwLqH4n6cP7Ru3trnTbtjaM4EKMj24DBQBk/M3LFiMnGAcUbtL+trgdNVfYTJM3nNGobnG3H3RzyKwfCQuotU8S2t3qN3f/Z9SRY5LpwWVTawNtAUBVGWPCgDnPUk1e8SabPrHhXW9Ns3CXF3bSwxsxIAZo8DJHOOaT0V/K/4FJa2ZFpfiTTNZvDb6bfXk2VLRzmydYJgO8czRiOT1+Rjxz0rY8l/+fmX8l/+Jrk5fEd7qXhW/svD+k6pp+uRWEohhubB4khmVCFUSuPKf5sAbWYHr0ya5t4dVl0i+XwxN4qhs3Onrvvzc/aUm+0r5zR+eDJtEX3uPL9M/NVW1sv6/wCAStrv+tv8/wAGeoeS/wDz8y/kv/xNHkv/AM/Mv5L/APE15vcaJrFhcapLY3fiGX+ztZsl05JLy4lV7dzAZwQSfOT55cl923BwVxUHh651C98UBre61+e7j12+juDM0xsUs1kmAUEjyiQwQAf6wH0QYpdL/wBdP8/wY2rK/wDXX/L8T0u4ZLS2luLq+MEEKF5JZCiqigZJJIwAB3pkcolumgS4uSyxrJv8n92VbOMPt2k8dAcjjPUV5Pepr2v+E4NDmt/ED3Nv4cv7e/MkdzCs12BEIx5h2iUkq+CCwYFhkgkVo3kOsPZvBoD+IYbJrDS0hZ/tIlRvtric/vfnDCP727+DGflxTSu7f11/yBqy/ruv8z07yX/5+ZfyX/4mjyX/AOfmX8l/+Jrzi8tdT0w31hM/iOXQYdaj3Pby3M90bZrVWwkikzMgnIyUJYcjO0EV0Hw3up7vwrNJcz3k+NSvUje9ctKI1uHVQxPoABjtjFC1V/66f5ien9ev+R0/kv8A8/Mv5L/8TR5L/wDPzL+S/wDxNS0UgIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaPJf8A5+ZfyX/4mpaKAIvJf/n5l/Jf/iaiaJ/tcY+0SfcbnC+q+1Wqib/j9j/65v8AzWgA8l/+fmX8l/8AiaPJf/n5l/Jf/ialooAi8l/+fmX8l/8AiaPJf/n5l/Jf/ialooAi8l/+fmX8l/8AiaPJf/n5l/Jf/ialooAi8l/+fmX8l/8AiaPJf/n5l/Jf/ialooAi8l/+fmX8l/8AiaPJf/n5l/Jf/ialooAi8l/+fmX8l/8AiaztI1jT9eW5bR9WN4lrN5EskQUqH2q2A23DcMORkduoNa1YPh+3nh17xPJNDJGk+oxvEzqQJFFpAuVPcZUjI7gjtQt36fqgNm0/48oP+ua/yqWorT/jyg/65r/KpaAMO1/5GCz/AOvOb/22rTk0+2l1ODUHjzdW8UkMcm4/KjlSwx0OTGv5fWsy1/5GCz/685v/AG2q3/wkGlHXzogvom1FYWne3U5KIu3JYjhfvrgHBIORxmgCxbafbWdzdz28eyW9lE07bid7hFQHnp8qKOPSnCeKKWUSSoh3A4ZgOwqlpPiPTdbuJ4LCSfzrcKzx3FrLA21iQrqJFUshKnDDIODzUmqanDoukalqd0rtDZxtO6xjLMFQHAHrxQ9ENXbsW/tdv/z8Rf8AfYo+12//AD8Rf99isWwudeto31LxNd6TbaeIWlkgiidWtABn5p2fbIAAcnYnr2wYk8f+Gzp1zfS30trBa+UZvtdnNbsqysFjfZIgYozHAcDbweeDR5C31N/7Xb/8/EX/AH2Kq2EGmaXDJFYtFEks8lw483dmSRi7nknqxJx09KyYPiF4buLiKBLu4WSSdbYrLYXEfkysQFSXcg8otkbQ+3dkYzmprXxv4fvdX/sy2vne58+S25tpRH50e7fF5hXZvG0nbnJHIBBBo8/6/rYP6/r8Ta+12/8Az8Rf99ij7Xb/APPxF/32K5zWviBo+l+F/wC2bd5L0S6dLqFpDHDLm4jjC5PCEoMumSRwCSeAcKPHGlQxyXuoX/2S0W0t52gnsJ4pYfNlaNWYsAcMwwBtBGCScEYP6/r7h2f9fL/NGrqlrp+r2f2a7vJo49wbNpfyWz5H+3E6tj2zil0u20rRdMg0/TPJt7WBdqIJM+5JJJJJJJJJJJJJJNUF8c6A2lvfC5uAiXP2QwNYzi487AbyxAU80ttO7AX7vPTmnyeJ4bzwhf634bifVjbRzeVAiOrSyxkgoARuzuUjgH2zRsmw3aNj7Xb/APPxF/32KPtdv/z8Rf8AfYrm9J8UxxeHP7V1nW9N1OCWUR28+kWkoLsePKEIeV2kBB4Bz1yo2mrLeLNOhnuJrq+8m3js4bn7PLYTRzoJHdFJDcksy7RGED5HfcBQJao2/tdv/wA/EX/fYo+12/8Az8Rf99isCbx/4et4bd5ri7V7nzfLtxp1yZz5ZXeDCI/MBAdTgqPlO7pzVp/F+ig2AhuZbo6hEs9uLO1luCYmxtkYRq2xDn7zYHXng0Aav2u3/wCfiL/vsUfa7f8A5+Iv++xWda+KNJvdak0u2nle5jZ0LfZpRCzJ99FmK+WzLzlVYkYbI4ONagCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32KPtdv/z8Rf8AfYqWigCL7Xb/APPxF/32Kia6g+1xnz48BGBO8eq1aqJv+P2P/rm/81oAPtdv/wA/EX/fYo+12/8Az8Rf99ipaKAIvtdv/wA/EX/fYo+12/8Az8Rf99ipaKAIvtdv/wA/EX/fYo+12/8Az8Rf99ipaKAIvtdv/wA/EX/fYo+12/8Az8Rf99ipaKAIvtdv/wA/EX/fYo+12/8Az8Rf99ipaKAIvtdv/wA/EX/fYo+12/8Az8Rf99ipawvDeralqV3rVvrEFpBLp96IEW1dnXYYIpBlmA3HMh52r6Y4yRagbFp/x5Qf9c1/lUtRWn/HlB/1zX+VS0AYdr/yMFn/ANec3/ttUWpxzJ470q9W3mkgg0y+DvHGWAYvblV4/iIVsDvg+lS2v/IwWf8A15zf+21blHmv60sNaM5HwbqC6zqF3qt3BqMGpXMEavBc6XcWsdtEpYrErSookYF23MDyewAFdDe6fb6rp9/p99H5ltdI0Mqf3lZACPyNXagBlEsvlojDcOWcjsPY0OzVhJtO5zn/AAi2sXui3mia94gjvtMuLSS1VorHyrkqy7Qzyb2RmAP8MaAnnGOKry+CdQ1KGV9c1qC4vGNoqS21iYY0jgnWbGwyMSzEEFt2BxhRg563dcf88ov+/p/+Jo3XH/PKL/v6f/iad9bh0t/X9aHOX3gz7b/bH+n7P7T1G0vv9TnyvI8n5Pvc7vJ68Y3dDjnI8MeGdVuLp5tTu/I06112+vYbJrNkldzNKEYyl8GMh9wATJODuI4rut1x/wA8ov8Av6f/AImjdcf88ov+/p/+Jpf1+X+SG3dW/rZr9ThIvhpdtZJYXmuxSWFtpV3pVpHFYlHSKYIAzuZG3soQDgKD6Cr1z4FutQZptQ1aFrh7exhdoLMoh+zXJnBCmRiNwIXGTjGeeldbuuP+eUX/AH9P/wATRuuP+eUX/f0//E002tf66/5hdv8Ar0/yRxniHQW0u5u9dt9SnhupdUjvIPK0ia+EZFsIGR4ojvZSoY7gVwSOeObPgfT9Vh8CyfaHez1C9ubq7je5t8NH5szuheLIxwwJTIIyRkEZrqt1x/zyi/7+n/4mjdcf88ov+/p/+JpLa39f1oDd7f13/wAzj/8AhBL9rmXVpNYtV15r2O8juIdPKWylIjDhoPNLNlHYE+YD93BAUCl1zwA/iSO9bV9Rt5Li7srW3bZY/ufMgmeUOY3dtyEsAUJ6A/Nzx1+64/55Rf8Af0//ABNG64/55Rf9/T/8TQF3/Xrf8zl9D8Ef2RqGn3e7Srf7FFcx/Z9J0v7HC/nGI7tnmPhh5XJzzkdMcxaP4Iv/AA7/AGa2i6xbq8FhBYXv2qxaRbmOIkqyBZVMbfO45LDkccc9buuP+eUX/f0//E0brj/nlF/39P8A8TTu/wCvn/mxdLHJaD8P4dA8V3Oq2y6PJHPcTXAkfSR9uQyksy/ag4yu5jgFM7cDPGa7Kot1x/zyi/7+n/4mjdcf88ov+/p/+JpdEg6t9yWiot1x/wA8ov8Av6f/AImjdcf88ov+/p/+JoAloqLdcf8APKL/AL+n/wCJo3XH/PKL/v6f/iaAJaKi3XH/ADyi/wC/p/8AiaN1x/zyi/7+n/4mgCWiot1x/wA8ov8Av6f/AImjdcf88ov+/p/+JoAloqLdcf8APKL/AL+n/wCJo3XH/PKL/v6f/iaAJaKi3XH/ADyi/wC/p/8AiaN1x/zyi/7+n/4mgCWiot1x/wA8ov8Av6f/AImjdcf88ov+/p/+JoAloqLdcf8APKL/AL+n/wCJo3XH/PKL/v6f/iaAJaKi3XH/ADyi/wC/p/8AiaN1x/zyi/7+n/4mgCWom/4/Y/8Arm/81o3XH/PKL/v6f/iaiZp/tcf7uPOxsDzD6r/s0AWqKi3XH/PKL/v6f/iaN1x/zyi/7+n/AOJoAloqLdcf88ov+/p/+Jo3XH/PKL/v6f8A4mgCWiot1x/zyi/7+n/4mjdcf88ov+/p/wDiaAJaKi3XH/PKL/v6f/iaN1x/zyi/7+n/AOJoAloqLdcf88ov+/p/+Jo3XH/PKL/v6f8A4mgCWs7TdJ/s7UtWuvO8z+0rpbjbsx5eIY4tuc8/6vOeOuO2aubrj/nlF/39P/xNG64/55Rf9/T/APE0AFp/x5Qf9c1/lUtRWn/HlB/1zX+VS0AYdr/yMFn/ANec3/ttTZdW1OLx5a6TJBaLp1xYzzxyK7NMzxtCORgBR+9PHzZwDkdC61/5GCz/AOvOb/22qzdaQbjxFZ6qtx5bWtpcWwj2ZyZWibdnPbyumOc+3J1+/wDJ/qCMzwrreoapqOpW15d6bqVvaiPZfaZGyRCQlw8By75dNqkkEffGVHd3jv8A5J14q/7Blz/6INS6LoF9aa3d6xrV/a3l9cQR226zsjbII0ZmG4GRyzZc87sAdAOSdeS3hu4bq2u4Y54JspJFIoZXUqAVIPBBHalJXjYqMuWfN/X9f15HnN1/ZvgPURfeGNOggWHw/c3uoafZqIYpNgQxOyqNquT5ihyMkBuu3ieHxd4zWy0xb+wsLOfVNRjtbe5uYlWNo3gkfcEiuZckMgxl13hsYX71dxpehaRodrJbaJpVlp0Ejb3itLdIlZsYyQoAJwAKw774c+HLhbKGy0fS7G0hvRdXNtDp8Yjux5Uke11AAP8ArM5IPTGOaq93/Xe5KVo29fy0/H+tDnNY+IWu2PhlprJLO51W0a9a4SK0LQzQ2z7GlBe4j8pc7QeZGBJwrYJpvijxD4ov7fVxpV9Y6bbafqenW6H7NK8z+abZzl1lQBcykEY+ZcjjrXdz+FvD91aWlrdaFps1vZDFrDJZxskA6fIpGF/DFWJtG0u5trq3uNNtJYLzH2mJ4FZZ8AKN4Iw2AqjnsB6UlpqPr/X9adzidT8W+KbK81UwDR5LbSr+zsXV4ZVe4adIQWBDkRhWmzjDZHy8EbjFqPjjxJpsc+l/ZrO+1ldZTTYp7a32ROrWwuA3lSzr82MrtMwyeQT9092ujaWkDQpptmsTtG7RiBQrNGFCEjHVQi4PbaMdBSXmh6TqFvdQX+l2V1DeMr3Mc1ujrOygBS4IwxAVQCemB6Uf1+X+T+8NDhNQ8YeMbW3vWaz0yym0rRE1S7guoWd5W3zBo18uUqm5YgQdz7c4+fqNfwfdaxd+LfFTX+oRT2Md3ELe3EDq0Ia3icAMZGAGG5AUZbLcZ2joYPD+jWto9ra6RYQ27wfZmhjtkVGiyx8sqBgrl2O3p8x9TU0Wk6dBqT6hBYWsd7JGInuUhUSMg6KWAyQMdOlO+v8AXf8A4ZC6f15f8E8v0HVrnwy+uLbne2uarfJp6P8AdF6Lp49p9ipRsekUhqpp+u6h4F8BS2Ph4i9urK81SeRLmASmSCG4YNI8jTxBOSuT87Hdwhwa9ej0+yi2+VZwJtmaddsSjEjZ3OOPvHc2T1O4+tU7vwzoN+sa32iadcrHK8yCa0jcI7nLuMjhmPJPU96S0X9dNv66r7ym02/W/wCf9etzzXWbvXrq18WPcX1tcwR61pgtLVo5E8os9o6rvLsAuG5wnLbm4ztrW1Hxx4k02OfTPs1nfawusppsU1tb7YmV7YXAbypJ1+bGV2mYZPIP8J7h9A0eS8e7k0mxe5kVEeZrZC7KjBkBbGSFKggdiAR0p15oek6hb3UF/pdldQ3jK9zHNbo6zsoAUuCMMQFUAnpgelPS1v66f5P7xJ6a/wBaHC3/AIx8Y2kN6XsdNs5tK0RNUvILqNmeRg8waNfLlKpuWIEHc+wnHz5yLU3i/W9Ok1Oz1OSxe7FraXGnta2btl7iR41hZGmG9tyAbt8YO7J2gV1sHh/RrW0e1tdIsIbd4PszQx2yKjRZY+WVAwVy7Hb0+Y+pp93omlX8c0d9plncpPEsMqzW6uJI1JKowI5UEkgHgEmh/wBfj/wA/r8v+D9557oviHxPr/irw891c2tlGYdShvbL7OxWVoJ40JIWdlDYIxy4Q7+W3caHhPxFqut22jWGkR6TpCLpNtfzobNnR1kZl8uBFkTYF2H5iWxuUYrrl8N6GkdpGmjaeqWMhltVFqgFu56sgx8p9xim3HhnQbuOyjutE06dNP8A+PNZLSNhbdP9WCPk6DpjoKE/6+//AD28hdH/AF/Wml/mZ3h/WdVu/EGo2Gu+TbSxlpLezSzdWEO8qsnn+YyS5ABwArKTyBxXM33xE1i11LWTbQW1xp0OnX9zYTyW3lbpLUqpU4nZpF3FlJMcXTjIOa7zT9C0jSbi5uNK0uysZrtt9zJbW6RtM2ScuVALHJPJ9TUS+GdBW5u7hdE04T3qst1KLSPdOG+8HOMsD3znNT29Bpq+vc5Kbxj4g0039pqX9lSXfkWM1rNHHJHDD9qmaHEoLkuEIzkFN3TC9aueCXvTrfjL7bNa3N4moxq8lqhSNmFpCOFLMV9wWOD3rqp9J026WZbrT7WZbiEW8wkhVhJEM4jbI5X5m4PHJ9aTTdI03R4DDpGn2thExBMdrAsSnAAHCgdAAPoBVaa+f+a/yEtP6/rqcl4K03Qrvw/p/iS7t7a615l/0rUJQDcrc9JIt/3lw2U8sHAA24xWanj3X4vDa6zP/ZM6X+iXWq2dvDFIrWpiRWCSkufNHzhSwEeCOnPHcjw5oi64dZXR9PGqnrfC1Tzzxt/1mN3Tjr04pIPDWhWzXzW2i6fC2ogi9Mdqim6BznzMD587j1z1PrS3/rb+v0KTSd2cVqPizxjYR6tvbQy+m6UmsEC2mIeNvMzb/wCsHzDyj+96HI/dirF3401tdW1SS2/ssadpl/Z2xt5I5GuLhbhITgMGwjAynHytu6YXG49tLplhN53nWNtJ58At5d8KnzIhnEbccr8zfKeOT61kWXgvS7fxNf65c2lndXdxcJNbSyWq+ZZhYUiKo5yRnZnjHXFPS/8AXf8AyJ6f15frcyG8YapNBZRQ/YoLq81280tTJEzBEiE5R9u8En90hPIBBOMZBHN6X4m1jSvBOh6jf/YNT1H/AIRq+v47ya2fzV8pIWVC5kJO4t85yN2F4GK9KHhvQ11htWXRtPGpMwZr0WqecSBtBL43Zxx16UkXhrQreF4oNF06KOQSh0S0QKwkx5gIA53bRu9cDPSktF/Xa3/BKuua9tP+C/8AgI5Gbxj4g0039pqX9lSXfkWM1rNHHJHDD9qmaHEoLkuEIzkFN3TC9a3fCetalqV9rtjq8ljNLpV4lsJrKNkWTMMbklWZtpy5GMnGMZPWtHVtGhvtPu4ra205bi5gFuz3lkJ42jBPyOgZS6fM3y7gPmNUvB/hVPCthdReZbyTXdwZ5fsloLaBPlVFSOIFtihUUY3HnJzzindXf9dV+lyNkv66f5nQUUUUhhRRRQAVE3/H7H/1zf8AmtS1E3/H7H/1zf8AmtAEtFFFABRRRQAUUUUAFFFFABRRRQAVyvg2yh0/WPFdvbeZsXVUOZZWlYk2luSSzksevc11VRxW8EMk0kMMcbzuHlZFAMjBQuWPc4UDJ7ADtQtG35fqv8gEtP8Ajyg/65r/ACqWorT/AI8oP+ua/wAqloAw7X/kYLP/AK85v/batysO1/5GCz/685v/AG2rL1WK3034l2WqeXczSHRr55EjaSZmCPbYWOPJAJ9FA3H1NHX7/wAmxpX2OwrM1e9t9J0nU9VvBO0NjC9xIsLkMyom4gDIGcDviuN8AamNR8da7cXEWoRXt7ZWk80d1Y3ECwkNKBGvmoowq7Rx94hmHfHU+K7G51TwZ4hsLCPzbq6sp4YY9wXe7RYUZOAMkjrRK6Q4WcrPYr6N4it9U1Iafd6bquk3r2/2mGG+kU+dFkAsrRSOpwWUFSQw3A4wQa3/ALMn96X/AL+t/jXC32keIfE1o8sdjN4fntNIubOzN1PGZmuJVUb8wu6qi7Bg5LEk8DaN3It4XGj6ZolrP4b1VkuNbiaXTLo6dGtwRaXAYRi2KRnIGG8zbvAAPGael7f1vb8v6RC+G78/wVz2j7Mn96X/AL+t/jVXUbmx0mz+1ahPLFD5kcW7fI3zO4RRgZPLMB+NeV6/4I1y+8HW2lW/h/bATezW1tALN5NOd3zBHvm3LGgUnJhyykKFIAydDXfh6+qw+Ib2+8PW2p3019YzWvnCGSSWKNLfzlUucKW8uRSCVDd+MGktd/6/r+rldbHp32ZP70v/AH9b/Gj7Mn96X/v63+Neaaj4Ae/m1i/j0NYbqXUdPk0/96ivb26pbpMqFWxH8qyIwUjcFx8w21DrvgC/FlqOn6PpjRaH/bcV2mm2ItQJoPsqo4SKYGHib59jgAlSRzg0f1+X+f4Alc9R+zJ/el/7+t/jVW1ubG9vLy1tp5XmsZFiuF3yDYxRXAyeD8rKeM9a80ufhzLfaZqAbRriV4vDqW2ljUXt/Ogule4ZceUfLjZd8e1lwFBwCORXT+E/Dh0bxn4hvZdCit31F4p01GJIR5n7qMSRkg79xkV3OV2nOc5NOyv/AF3F0/ry/wA/wZ1ptowOWl/7+t/jWRout2OteHzrYjvLLTyrSRzXc20SRAZ80Yc7VI5+ba3qBXIWng25l8SN9v8ADsbXDajcz3euSPEy3tpJ5m23I3GRhteNDG6hAI8gnC519A8F/Z/g5F4WktYdMubjTTBcLEiELMyYZjt4Y56nnNT9lv8Ar+v67FWXNY1tI1kavcDZo2sWtnIm+C9uWVY5h2wgkMiZHPzov54FbX2ZP70v/f1v8a5W4uPE+t+GdR0htEn0bUZLGWJL/wC1xG380qVUxMjGTBOCCyIQPfiuZfwVc3ekX0Ok+Fm8O2lwdPR9OSeGMyvHcq8s37lyoITjduDtjkDC5rrb+v6/rQlbXf8AW39fI9Q+zJ/el/7+t/jR9mT+9L/39b/GvN7j4dC2uNUn0jQ7eCSDWbK40hoii/Z4QYDP5XP7sEibcoxu54ORVPwtocl54kN7Z6G0M1v4h1CWbW2ljO6DzZlMCjf5nLEfJtCdWzupdP68v8/wG1ZX/rr/AJHpmoS2el6bc399NLFa2sTTTSeY7bUUZY4BJPA7UQlZrgosN0IfKWRLgzfI+c/KBu3ZGATlQORgnnHlkvgzXdV8OWeg3vh4qmm+H73ThNdTQPFPOwi8l0UOxAzHuBYKQQOBV6+8GX19ayRWPh86bZy2OlwCzEkMRjMV68kw/duVGEO7IPOeOeKaSv8A15/5A0rf13X+b+49N+zJ/el/7+t/jR9mT+9L/wB/W/xrzi88Fz2Jvra08Nx3vh9daju10WBoUjnhNqqNtjZljwJvn2MVBKk9cZ2vhYqjwXI0UIgifU75oo1k3hV+0yYAbuO2aFqv68v8xPS39d/8jrfsyf3pf+/rf40fZk/vS/8Af1v8alopARfZk/vS/wDf1v8AGj7Mn96X/v63+NS0UARfZk/vS/8Af1v8aPsyf3pf+/rf41LRQBF9mT+9L/39b/Gj7Mn96X/v63+NS0UARfZk/vS/9/W/xo+zJ/el/wC/rf41LRQBF9mT+9L/AN/W/wAaPsyf3pf+/rf41LRQBF9mT+9L/wB/W/xo+zJ/el/7+t/jUtFAEX2ZP70v/f1v8aia3T7XGMycox/1req+9Wqib/j9j/65v/NaAD7Mn96X/v63+NH2ZP70v/f1v8alooAi+zJ/el/7+t/jR9mT+9L/AN/W/wAalooAi+zJ/el/7+t/jR9mT+9L/wB/W/xqWigCL7Mn96X/AL+t/jR9mT+9L/39b/GpaKAIvsyf3pf+/rf40fZk/vS/9/W/xqWigCL7Mn96X/v63+NZWiavZa81+LSLUIfsNz9nkF0JIWZvLR8hWO4DDj7wB9sYJ2qxdE0+5s9a8RT3EeyK9v0mgbcDvQW0KE8dPmRhz6ULd+n6oDVtP+PKD/rmv8qlqK0/48oP+ua/yqWgDEayeWSC4jlvIJI49qvbiMhlZY8g7we6Cmtpsz3SXLXmpNPGjIkpgtdyqxBYA+XkAlVyO+B6VaCbVAV5AAMACRuP1pcH/npL/wB/G/xoAqLp0yXL3C3upLNIqo8ogtdzKucAny8kDccfU+tSC0vASRqWrfMcn93bf/G6nwf+ekv/AH8b/GjB/wCekv8A38b/ABoAg+zXv/QS1b/v3bf/ABuoptMluHhe4u9RlaB/MiZ4LVjG+CNy5j4OGIyOxPrVzB/56S/9/G/xowf+ekv/AH8b/GgCD7Ne/wDQS1b/AL923/xuj7Ne/wDQS1b/AL923/xup8H/AJ6S/wDfxv8AGjB/56S/9/G/xoAg+zXv/QS1b/v3bf8Axuj7Ne/9BLVv+/dt/wDG6nwf+ekv/fxv8aMH/npL/wB/G/xoAg+zXv8A0EtW/wC/dt/8bo+zXv8A0EtW/wC/dt/8bqfB/wCekv8A38b/ABowf+ekv/fxv8aAIPs17/0EtW/7923/AMbo+zXv/QS1b/v3bf8Axup8H/npL/38b/GjB/56S/8Afxv8aAIPs17/ANBLVv8Av3bf/G6Ps17/ANBLVv8Av3bf/G6nwf8AnpL/AN/G/wAaMH/npL/38b/GgCD7Ne/9BLVv+/dt/wDG6it9MltEZLW71GBXdpGWOC1UM7HLMcR9SSST3Jq5g/8APSX/AL+N/jRg/wDPSX/v43+NAEH2a9/6CWrf9+7b/wCN0fZr3/oJat/37tv/AI3U+D/z0l/7+N/jRg/89Jf+/jf40AZmqeHodcs/smtG71G23B/Ju7S0lTcOh2tGRnnrVi20yaytYrazvNSt7eFAkUUUFqqIoGAoAjwAB2FW8H/npL/38b/GjB/56S/9/G/xoAg+zXv/AEEtW/7923/xuj7Ne/8AQS1b/v3bf/G6nwf+ekv/AH8b/GjB/wCekv8A38b/ABoAg+zXv/QS1b/v3bf/ABuj7Ne/9BLVv+/dt/8AG6nwf+ekv/fxv8aMH/npL/38b/GgCD7Ne/8AQS1b/v3bf/G6Ps17/wBBLVv+/dt/8bqfB/56S/8Afxv8aMH/AJ6S/wDfxv8AGgCD7Ne/9BLVv+/dt/8AG6Ps17/0EtW/7923/wAbqfB/56S/9/G/xowf+ekv/fxv8aAIPs17/wBBLVv+/dt/8bo+zXv/AEEtW/7923/xup8H/npL/wB/G/xowf8AnpL/AN/G/wAaAIPs17/0EtW/7923/wAbo+zXv/QS1b/v3bf/ABup8H/npL/38b/GjB/56S/9/G/xoAg+zXv/AEEtW/7923/xuj7Ne/8AQS1b/v3bf/G6nwf+ekv/AH8b/GjB/wCekv8A38b/ABoAg+zXv/QS1b/v3bf/ABukNndlw/8AaOrbgCAfLtuhx/0z9qsYP/PSX/v43+NGD/z0l/7+N/jQBB9mvf8AoJat/wB+7b/43R9mvf8AoJat/wB+7b/43U+D/wA9Jf8Av43+NGD/AM9Jf+/jf40AQfZr3/oJat/37tv/AI3R9mvf+glq3/fu2/8AjdT4P/PSX/v43+NGD/z0l/7+N/jQBB9mvf8AoJat/wB+7b/43R9mvf8AoJat/wB+7b/43U+D/wA9Jf8Av43+NGD/AM9Jf+/jf40AQfZr3/oJat/37tv/AI3R9mvf+glq3/fu2/8AjdT4P/PSX/v43+NGD/z0l/7+N/jQBB9mvf8AoJat/wB+7b/43R9mvf8AoJat/wB+7b/43U+D/wA9Jf8Av43+NGD/AM9Jf+/jf40AQfZr3/oJat/37tv/AI3R9mvf+glq3/fu2/8AjdT4P/PSX/v43+NGD/z0l/7+N/jQBXSzu0RUXUdWCqMAeXbdP+/dL9mvf+glq3/fu2/+N1Pg/wDPSX/v43+NGD/z0l/7+N/jQB//2Q==)

Select DeptName, Count(deptname) AS DeptNameCount

From Department

WHERE deptName IS NOT NULL

GROUP BY DeptName

ORDER BY DeptNameCount DESC, DeptName

;

## **Graphical user interface Description automatically generated with low confidence**Task 1.2

Select t1.Title, t1.Givename, t1.Famname,Count(t1.ACNUM) As PaperCount

From Academic t1 join Interest t2 on t1.ACNUM = t2.ACNUM

join author t4 on t1.ACNUM = t4.ACNUM

join paper t3 on t4.PANUM = t3.PANUM

Where t1.title = 'Dr'

AND t2.DESCRIP like '%database%'

AND t3.TITLE like '%database%'

GROUP BY t1.ACNUM

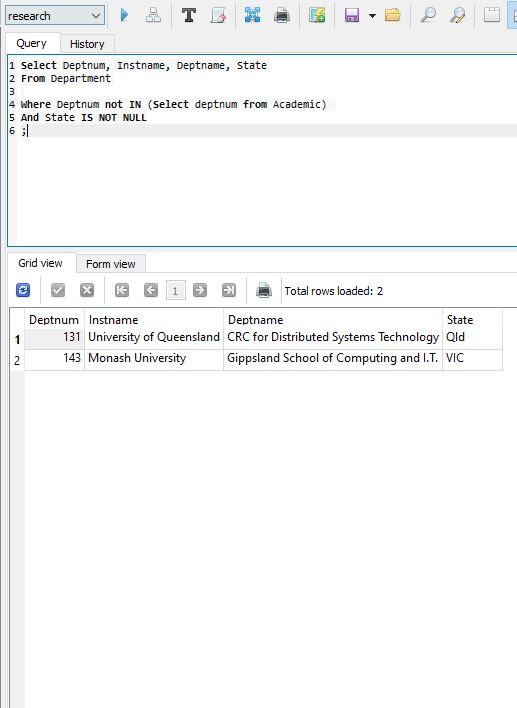
HAVING Count(t1.ACNUM) >1

Order By PaperCount Desc, Famname

;

# Task 2

## Task 2.1

****

Select Deptnum, Instname, Deptname, State

From Department

Where Deptnum not IN (Select deptnum from Academic)

And State IS NOT NULL

;

## Task 2.2

Select d.Deptnum, d.Instname, d.Deptname, d.State

From Department d

Where NOT EXISTS (

Select A.Deptnum

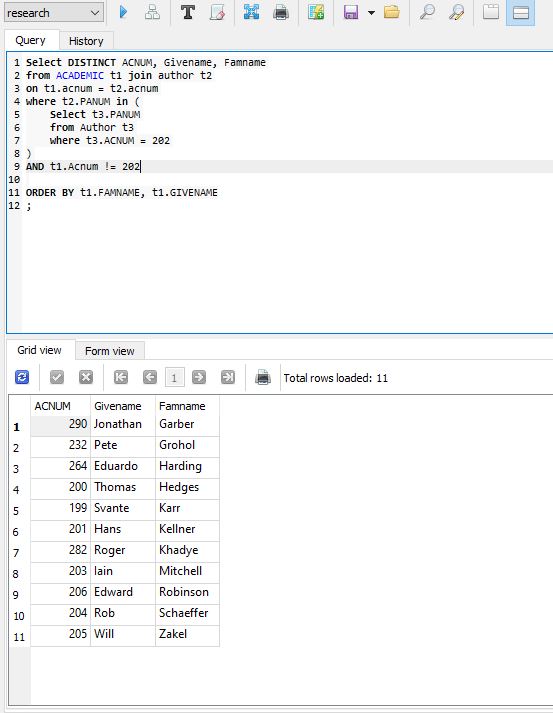
from Academic a

Where a.DEPTNUM = d.DEPTNUM)

AND State IS NOT NULL

;

## Task 2.3

****

Select DISTINCT ACNUM, Givename, Famname

from ACADEMIC t1 join author t2

on t1.acnum = t2.acnum

where t2.PANUM in (

Select t3.PANUM

from Author t3

where t3.ACNUM = 202

)

AND t1.Acnum != 202

ORDER BY t1.FAMNAME, t1.GIVENAME

;

## Task 2.4

SELECT Deptname, MAX(Amount)

from ( Select DEptname, COUNT(DEPTNAME) AS Amount

from department

Group by Deptname

)

;

## Task 3 Task 3.1

Select t1.acnum

from interest t1

group by t1.Acnum

Having Count(t1.acnum) >= 5

Intersect

Select t2.acnum

from Academic t2

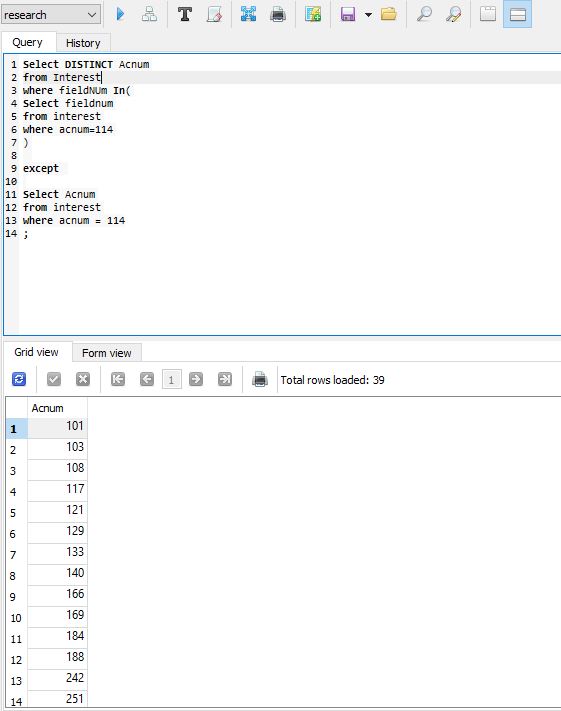
where t2.acnum NOT IN (

Select t3.acnum

from Author t3)

;

## Task 3.2

****Task 4Task 4.1

Select DISTINCT Acnum

from Interest

where fieldNUm In(

Select fieldnum

from interest

where acnum=114

)

except

Select Acnum

from interest

where acnum = 114

;

Course  
CCode → Name  
  
CourseOffering  
CCode, OCode → Start Date, Weeks, Has Break

Contract  
CNumber → Start Date, End Date, Salary, Is Full Time, Is Casual  
Start Date → SNo, Staff Name  
  
Staff  
SNo → Staff Name, Academic Level

Lecture  
CCode, OCode, SNo → (They are all determinants in this table)

Tutor

CCode, OCode, SNo → Hours, Rate  
  
Coordinate  
CCode, OCode, SNo → Hours

## Task 4.2

Using the methods provided to us in Week 4 ‘Mapping the ER Model to the Relational Model’ and then figuring out from there the functional dependencies within those tables. While for the most part they are the same as the above functional dependencies there are some key differences.

The following functional dependencies are different. Any not shown should be assumed the same as the previous task

Course Offering  
CCode, OCode → Start Date, Weeks, Has Breaks  
CCode, OCode → SNo

The difference for Course Offering is that SNo is included as There is a 1: N relationship between the Staff Table and the Course Offering table. This also makes sense as a staff member must be assigned to the Course to Offer It.

Contract  
CNumber → Start Date, End Date, Salary, Is Full Time, Is Casual  
StartDate → SNo

The main change here is to remove staff name as following the methods provided, staff name is not required in the Contract Table as it is neither a Partial Key, Foreign Key or Primary Key in either table. Again, SNo is included due the nature of the relationship between the tables.

So, the New Functional Dependencies based on the Entity Relationship Map provided are as follows:

Course  
CCode → Name  
  
Course Offering  
CCode, OCode → Start Date, Weeks, Has Breaks  
CCode, OCode → SNo

Contract  
CNumber → Start Date, End Date, Salary, Is Full Time, Is Casual  
StartDate → SNo  
  
Staff  
SNo → Staff Name, Academic Level

Lecture  
CCode, OCode, SNo → (They are all determinants in this table)

Tutor

CCode, OCode, SNo → Hours, Rate  
  
Coordinate  
CCode, OCode, SNo → Hours

## Task 4.3

Course  
CCode → Name  
3NF  
  
Course Offering  
CCode, OCode → Start Date, Weeks, Has Breaks  
CCode, OCode → SNo  
3NF

Contract  
CNumber → Start Date, End Date, Salary, Is Full Time, Is Casual  
StartDate → SNo  
2NF as there is a transitive dependency between CNumber → Start Date → SNo. The easiest way to achieve 3NF would be to create a table in between the Contract and Staff Table, Staff Contract(SNo\*, CNumber\*, Start Date, End Date) and to reduce data redundancy remove Start Date and End Date from the contract table

CNumber → Start Date, End Date, Salary, Is Full Time, Is Casual  
Which would be 3NF  
  
Staff  
SNo → Staff Name, Academic Level  
You might argue that the staff name holds multiple values, but I am assuming it is just the staff member’s last name. If it had multiple values it would need to be broken down as follows  
SNo → Staff First Name, Staff Last Name, Academic Level.  
But for the remainder of the assignment and as it is not indicated in the ERM that it is storing multiple values I will continue the rest of the tasks under the assumption that it is a single value store.  
3NF

Lecture  
CCode, OCode, SNo → (They are all determinants in this table)  
3NF

Tutor

CCode, OCode, SNo → Hours, Rate  
3NF  
  
Coordinate  
CCode, OCode, SNo → Hours  
3NF

Task 4.4Course(CCode, Name)

CourseOffering(CCode\*, OCode, Start Date, Weeks, Has Break, SNo\*)

Contract(CNumber, Salary, Is Full Time, Is Casual)  
  
StaffContract(CNumber\*, SNo\*, Start Date, End Date)

Staff(SNo, Staff Name, Academic Level)

Lecture(SNo\*,CCode\*, OCode\* )

Tutor(SNo\*,CCode\*, OCode\*, Hours, Rate)  
  
Coordinate(SNo\*,CCode\*, OCode\*, Hours)

# Task 5

The Department of Health is exploring an online vaccination system that will allow Australians to perform three main tasks via the internet. The three main tasks are booking a vaccine, reviewing their immunisation history and seeing the recommendations for future vaccines based upon their vaccine history.

The objective of this report is to consider the two commercially available database platforms either a traditional relational database system or a No-SQL database system that would be best suited as the backend database solution for this new system. The report will look at the advantages and disadvantages of each, Touching on scope, scalability, performance issue and data security among other points.

It will also compare two real world examples of how a Traditional Relational Database System and a Np-SQL database system have performed and compare them to this proposed system. Both of these platforms could provide the support for this new system as they can both scale to the amount of data needed while differing in performance and data consistency. However, given the track record of Traditional Relation Database Systems and the amount of data that will be handled in addition to the level of data consistency required. This report would recommend that a traditional database system would be the best choice for this system.

Data stored in a traditional database system is stored in rows and columns to make up different tables when collected. The information stored in each table is one snippet of data relevant to the whole system. While some tables may not interact with others in the system they all are imported to keep the data organised and consistent when additional data is added to the system. The difference between normal files being saved and stored on your computer and using a database is the relationships that the tables (or ‘files’) have with each other and interact with each other. It also allows developers to use Structured Query Language (SQL) to write queries that allow data points from multiple tables (‘files’) to be analysed in ways that are not available through conventional data storage options. This often leads to traditional relational databases being referred to as SQL databases. Traditional Database systems come with a variety of advantages and disadvantages for proposed projects including scalability, performance and cost among others. To properly integrate a database system a Relational Database Management System is needed, this is the software that represents the data in tables with rows and columns. Two popular Relational Database management systems are Oracle which was established in 1977, and SQL Server which was established in 1989 by Microsoft.

While SQL databases were the first set of Database management systems designed to work with large amounts of data that is very structured and rigid in its design. Non-SQL Database systems are a newer way to handle data of varying sizes without the need to have it structured as rigidly as a traditional relational database. The main reason it is referred to as a Non-SQL database is because it doesn't make use of SQL. Instead using graph databases, key-value pairs or document-oriented storage. MongoDB is a document-based database. The key difference here is that the data is not stored in tables with rows and columns, each having a relationship between each other, so they all fit into the strict schema of a SQL database. Instead, data is stored on multiple tables such as Employee information, Contact information, Department etc. it is stored as one object with multiple field-value pairs. These documents are then collected into Collections with other documents with similar fields. This is the biggest difference as the documents forming a collection don’t have to conform to any particular schema although some document databases do offer schema validation. The advantages for flexibility of data being stored is a clear example of an advantage of Non-SQL database systems.

One of the advantages that both databases have been their scalability both horizontally and vertically. Scaling often refers to adding or sometimes removing large portions of data. For example, a business that is scaling up means its employing more. However, the business can’t upscale if it doesn’t have the room or can’t afford to. While MongoDB allows for it to scale vertically well, other non-SQL databases lack the same customisation. However traditional relational databases scale well both vertically by adding more CPU, RAM or SSD, or horizontally through sharding and indexing. The reliability on traditional databases to have the functionality to scale as needed with the project, especially with the amount of data that may eventually be stored. Is evident as to why it is more suitable for this project.

The flexibility of data storage is a key aspect to be considered for this project. While Non-SQL databases offer unmatched flexibility in organizing data, this also creates potential discrepancies between different sets of documents in a collection. On the other hand, traditional SQL-based databases offer a structured approach to storing data, reducing the potential for inconsistencies. With the type of data being collected for this project, and the consistency needed. Makes the flexibility of Non-SQL databases redundant, as strict schemas help led to a greater data consistency. Data consistency is important as it helps to ensure the data is accurate and as vaccinations can be potentially life threatening depending on allergies and reactions to previous vaccines. It is important that the data is up to date.

One disadvantage that a traditional relational database has opposed to a Non-SQL database is the potential performance issues. Non-SQL databases such as MongoDB and optimised around dealing with processing high volume and velocity data. This is ideal for applications that generate large amounts of data as the project has the potential too with the large number of potential users in Australia. Traditional databases struggle as the amount and different types of data being input may require multiple updates of the schema which could lead to degradation of the performance. However, because of the strict nature of the data being generated by this project, this data degradation and need for schema updates is unlikely. However, if more features were to be added to the project in the future, then this risk increases greatly. Meaning that if the project is not going to change in the future a traditional relational database would perform adequately unless additional changes were made to the scope of the project.

Data security is also something to consider for this project as much of the information being stored in the system is personal and also medical information for potentially millions of users in Australia. While Non-SQL databases systems like MongoDB do have security features built into them including mechanisms for secure data management, however when comparing them to traditional relation databases they are still new and are not as tested. Traditional databases systems also have a large community of driven developers who have been working on improving security measures for a lot longer. There is also a large market for third party security software unlike with Non-SQL systems.

Netflix is an example of a company who started off with a small number of features and low user load but has now ballooned to a company that offers a variety of products across a range of products. While having originally started with an Oracle a traditional relationship database, they have now moved to a Non-SQL based database. The reasoning behind their move was to reduce downtime occurring with schema updates and managing accessibility to the cloud. They are currently using amazon-based web services. This move also helped to save costs as system and database administrators were not required to be hired to build their own datacentre. Similar to Netflix if this current project reaches a certain scope, it may be beneficial to start with one style and swap to another.

However, the guardian is an example of a company that evaluated their business and decided that encryption was more important to them then the flexibility that a Non-SQL database. While deciding to switch to a cloud-based system similar to Netflix they also made their decision to opt out of the obvious cloud-based choice DynamoDB, because it did not offer encryption at rest (at the time of their change). While the platform that they did chose to go with did, PostgreSQL. Similarly, to the proposed project, the guardian had large data that needed to be safely encrypted and Non-SQL databases just couldn’t provide that at the time.

Something to note with both of these examples is they moved to a system reliant of Amazon Web Services (AWS). More and more companies are moving to AWS to help reduce the operating cost and reduced hardware and management overhead. This cloud-based solution may work for most systems. However, the legal requirements for Government run applications may require it to be stored in a government facility.

In summary a traditional relational database system is more appropriate for this project. It will provide a much greater ability to scale vertically with additional users signing up for the project. While there are some performance risks, they are outweighed by the data security and data consistency benefits. It is this reports recommendation to use a traditional relational database system.

References  
  
D.D.A. (2023) *Why the Guardian switched from mongodb to postgresql*, *Medium*. Better Programming. Available at: https://betterprogramming.pub/why-the-guardian-switched-from-mongodb-to-postgresql-861b6cf01e1f (Accessed: February 5, 2023).

*Document database - nosql* (no date) *MongoDB*. Available at: https://www.mongodb.com/document-databases (Accessed: February 5, 2023).

IT, B. (2017) *What is encryption at rest, and why is it important for your business?*, *Brightline Technologies*. Available at: https://brightlineit.com/encryption-at-rest-important-business/ (Accessed: February 5, 2023).

Kanaracus, C. (2010) *Netflix turns from Oracle, IBM to Amazon to save cash*, *PCWorld*. Available at: https://www.pcworld.com/article/498983/netflix\_turns\_from\_oracle\_ibm\_to\_amazon\_to\_save\_cash.html (Accessed: February 5, 2023).

Lampitt, T.B.D.B.A. and Lampitt, A. (2013) *Big movies, big data: Netflix embraces NoSQL in the cloud*, *InfoWorld*. InfoWorld. Available at: https://www.infoworld.com/article/2614318/big-movies--big-data--netflix-embraces-nosql-in-the-cloud.html (Accessed: February 5, 2023).

*Solutions* (1991) *Amazon*. National Council on Vocational Education. Available at: https://aws.amazon.com/solutions/case-studies/amazon-database-migration/ (Accessed: February 5, 2023).

*SQL vs. NoSQL databases: What's the difference?* (no date) *IBM*. Available at: https://www.ibm.com/cloud/blog/sql-vs-nosql (Accessed: February 5, 2023).