![A picture containing text

Description automatically generated](data:image/jpeg;base64,/9j/4AAQSkZJRgABAQEAYABgAAD/4RvCRXhpZgAATU0AKgAAAAgABgALAAIAAAAmAAAIYgESAAMAAAABAAEAAAExAAIAAAAmAAAIiAEyAAIAAAAUAAAIrodpAAQAAAABAAAIwuocAAcAAAgMAAAAVgAAEUYc6gAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAFdpbmRvd3MgUGhvdG8gRWRpdG9yIDEwLjAuMTAwMTEuMTYzODQAV2luZG93cyBQaG90byBFZGl0b3IgMTAuMC4xMDAxMS4xNjM4NAAyMDIyOjAzOjI1IDEzOjM0OjEwAAAGkAMAAgAAABQAABEckAQAAgAAABQAABEwkpEAAgAAAAMzNAAAkpIAAgAAAAMzNAAAoAEAAwAAAAEAAQAA6hwABwAACAwAAAkQAAAAABzqAAAACAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMjAyMjowMzoyNSAxMzozMzo0NQAyMDIyOjAzOjI1IDEzOjMzOjQ1AAAAAAYBAwADAAAAAQAGAAABGgAFAAAAAQAAEZQBGwAFAAAAAQAAEZwBKAADAAAAAQACAAACAQAEAAAAAQAAEaQCAgAEAAAAAQAAChYAAAAAAAAAYAAAAAEAAABgAAAAAf/Y/9sAQwAIBgYHBgUIBwcHCQkICgwUDQwLCwwZEhMPFB0aHx4dGhwcICQuJyAiLCMcHCg3KSwwMTQ0NB8nOT04MjwuMzQy/9sAQwEJCQkMCwwYDQ0YMiEcITIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIyMjIy/8AAEQgAQgC3AwEhAAIRAQMRAf/EAB8AAAEFAQEBAQEBAAAAAAAAAAABAgMEBQYHCAkKC//EALUQAAIBAwMCBAMFBQQEAAABfQECAwAEEQUSITFBBhNRYQcicRQygZGhCCNCscEVUtHwJDNicoIJChYXGBkaJSYnKCkqNDU2Nzg5OkNERUZHSElKU1RVVldYWVpjZGVmZ2hpanN0dXZ3eHl6g4SFhoeIiYqSk5SVlpeYmZqio6Slpqeoqaqys7S1tre4ubrCw8TFxsfIycrS09TV1tfY2drh4uPk5ebn6Onq8fLz9PX29/j5+v/EAB8BAAMBAQEBAQEBAQEAAAAAAAABAgMEBQYHCAkKC//EALURAAIBAgQEAwQHBQQEAAECdwABAgMRBAUhMQYSQVEHYXETIjKBCBRCkaGxwQkjM1LwFWJy0QoWJDThJfEXGBkaJicoKSo1Njc4OTpDREVGR0hJSlNUVVZXWFlaY2RlZmdoaWpzdHV2d3h5eoKDhIWGh4iJipKTlJWWl5iZmqKjpKWmp6ipqrKztLW2t7i5usLDxMXGx8jJytLT1NXW19jZ2uLj5OXm5+jp6vLz9PX29/j5+v/aAAwDAQACEQMRAD8A9zooAKKACigAooAKKACigAooAKKACigAooAKKACigAooAKKACkR0kQPGwZT0IOc0rgLRTAKzfD11Ne+HdPurh9801uju2AMkjk8U7e6K+ppVly+JNDgmaGXV7JZFOGDTqMH35oUbg5WNEzReQZ/MTyQu/fkY29c56YohniuYUngkSSJxuV0OQw9QaLAmPqJrq3S5S2aaNZ5FLJGWG5gOpA6nFCHclopARXFzBZ27XFzNHDCmN0kjBVGTgZJ98VLTsK4UUhhRQAUUAFMmmjgTdI2MnAHUsfQDuaTdhN2Kk4nkt5JZIyVVcrbg8sf9r1+g/WmWscnltJDPG0gbDDYVVvYr2PuPasre8Z631LcNysrFGUxygZMbdR/iKnrRNtaGidxKx/Cn/Io6T/16x/8AoIq+gvtGb4vnluL7RdCSR44tSnbz2RipMaAErkcjOa6SG0tra2FvDBHHAowI1UBcfSrlpFImOsmZt1p1rp+i6sLRTHHLDI5iU/Ip2HO0ds9eKy9I1eLRvAGkXEiNLJJFHDDEh+aSRuAoppOUdRNqL0L9/q+oaNa/b9St7ZrMMol8h2LQgnGeR8wBIzjH41ma3PMnj7Q2tIlnke1mCBm2qM45JweMe1OMdbilI07fWru312DSNVt4VluY2kt54GJR9vJUg8ggc9xT5tR1M3k8UUNnBsJEMdxN+8uAB1AH3R25zU8iuNTdjD8UarHrfwrudSiQxpPHG2wnO0iVQRnvyK7aiSsrDi7yuFFZmgUUAFFAFe7uJLeMGKCSZycAKOB9TWdBqNus2+WO5luSShIiOARyVUdsVjOdpWMpzsySbVoJFaBre73MQhCptbJGQOvFNivmtdqGyumlmb7zhQXYD68cD9Kh1dbpEud3cbPfme3id7CXbI4WJxIAQx6YParGmXV3OMTQN5eTtlLKPzApxqSc9hxm3LY0e1Y/hT/kUdJ/69Y//QRXT0NPtEPibSbm+Wyv7AKb/TpvOiRjgSD+JM9sipY/EFrNF5d1ZX0MrLh4JLORvwyAQw+hq/iirdCb8sn5mJptpMLzxc0WnXFrb3EMYto2h2b8RMDtA4PP8+eaZ/Y19N4J8PvFbv8AbdMkhufszjYz7eqc9Dg9605rGfK2rF7xHcN4g0ObStPt7o3F0VRjLbvGsI3AksWAAwB259Kh1OG4sPF2h3Ednc3FrbWkkUrxRltg4Hbqe+OtJaaFS11HuJNf8YaVeW9tcR2OmpKzTTRNHvdxtCqGwTiq2kQxWo1W31fTZ59QmuZH3i3Z/PQ/cKPjCgDjqMe1NOy5SWru5Q/s2+/4Ux9h+xXP2zb/AMe/lN5n+vz93GenP0r0Ws5sumrMSiszUKKACigArFtIw2obx0S8l/8AQayqLVGc90PnwNSc4586D+tXL0DzbM+k/wD7K1Rb3ZE20ZVjw2k2RP8ADMmP++8VcsBi0A9Hcf8Ajxq4fEOG5Z7Vj+FP+RR0n/r1j/8AQRW32S/tF+71KxsDGLy9t7YyZ2CaVU3Y64yeaW11Cyvt32S8t7jb97ypA+PrinaVrhzRvYs0VOpQVE1zAlwlu00azyAskZYbmA6kDqcUK7E3YkoouOwUUAFFABRQAUUAFY1i+LoD+9czfyrKo9UZz3RLPj7ZPz0lgP5nFWb7g2p9J1/UEf1qekib6MoQNt0KEk48ucZ/CStGy/1Ug9JpP/Qif60QeqHF6lntWP4U/wCRR0n/AK9Y/wD0EV0dC/tGP4ouI7Txp4WnlSR0X7XlY42kY5jA4VQSetM86DVvHenXFmDZm1ik84zr5UlwCMBQjYYgHnJFbJPlTMW1zM3bm/vI9Se3DWVrCFHlyXEmWmY9cKCMAep/Ks9vFcg8IXms/ZVFxaO0UkO/K71bacH071Cgmi3PUS+1/VtM0+DVbqxthYsyCSNZCZY1YgA9ME89P1NJqkiRePtFldwiLZ3DFicAAY5NUo2YnK5tabfS6islx5Hl2jY+zs+Q8g/vY/hB7d6vVlJWdjWLurhRSGFFABRQAUUAVNTBNi2BIQGUsseclcjI49qopHY8Mun3owSRhXGCfxrGajzaoymlzaj/AC7WQknT7ticZLZ5x06t2pTZWzcnSpz9XX/4up5U+hPIuwn2C2HTSD/wJl/xp0Fmsd5DJDYNb4J3tvGCMHjAPrj8qFDXRAoa7GpWP4U/5FHSf+vWP/0Gun7Jr9ozPEpkt/Fvhu/+z3Mtvb/afNaCFpNm5ABkKD1P9ai1PzvEmr6MbGxuoo7K5E8tzcQtEFUfwruwTn2Hato7JmT3aEs1i0/XtaOs2E9xNdTEwTratMskBACxjaCBjnIOM8VmR6ddr8ONdtVsLiOWS7lMduUO8rvXGPXjv7VV/wBBW+/U3fF1rcXHgd4IYJJZiIf3aIS3DLngVDr2jLq/ivSI7q2llsvssyykZCgnGASOn0qYyS/Ecot/gT+HW1HSbx9Av45p4Il3Wd7sJV4/7jnsw/l+GemrOdr3NIXtYKKgsKKACigAooAKWgAoouFkFFFwuJVPSbH+y9ItLDzPM+zxLHv243YGM4p9LCtqXaKV3ayHpuFFHqAlFABRRYAooAKKACigAooAKKACigAooAKKACigAooAKKACigAooAKKACigD//Z/+Ex6Gh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC8APD94cGFja2V0IGJlZ2luPSfvu78nIGlkPSdXNU0wTXBDZWhpSHpyZVN6TlRjemtjOWQnPz4NCjx4OnhtcG1ldGEgeG1sbnM6eD0iYWRvYmU6bnM6bWV0YS8iPjxyZGY6UkRGIHhtbG5zOnJkZj0iaHR0cDovL3d3dy53My5vcmcvMTk5OS8wMi8yMi1yZGYtc3ludGF4LW5zIyI+PHJkZjpEZXNjcmlwdGlvbiByZGY6YWJvdXQ9InV1aWQ6ZmFmNWJkZDUtYmEzZC0xMWRhLWFkMzEtZDMzZDc1MTgyZjFiIiB4bWxuczp4bXA9Imh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC8iPjx4bXA6Q3JlYXRvclRvb2w+V2luZG93cyBQaG90byBFZGl0b3IgMTAuMC4xMDAxMS4xNjM4NDwveG1wOkNyZWF0b3JUb29sPjx4bXA6Q3JlYXRlRGF0ZT4yMDIyLTAzLTI1VDEzOjMzOjQ1LjM0MjwveG1wOkNyZWF0ZURhdGU+PC9yZGY6RGVzY3JpcHRpb24+PC9yZGY6UkRGPjwveDp4bXBtZXRhPg0KICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgCiAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAKICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgIAogICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgICAgPD94cGFja2V0IGVuZD0ndyc/Pv/bAEMAAwICAwICAwMDAwQDAwQFCAUFBAQFCgcHBggMCgwMCwoLCw0OEhANDhEOCwsQFhARExQVFRUMDxcYFhQYEhQVFP/bAEMBAwQEBQQFCQUFCRQNCw0UFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFBQUFP/AABEIAEIAtwMBIgACEQEDEQH/xAAfAAABBQEBAQEBAQAAAAAAAAAAAQIDBAUGBwgJCgv/xAC1EAACAQMDAgQDBQUEBAAAAX0BAgMABBEFEiExQQYTUWEHInEUMoGRoQgjQrHBFVLR8CQzYnKCCQoWFxgZGiUmJygpKjQ1Njc4OTpDREVGR0hJSlNUVVZXWFlaY2RlZmdoaWpzdHV2d3h5eoOEhYaHiImKkpOUlZaXmJmaoqOkpaanqKmqsrO0tba3uLm6wsPExcbHyMnK0tPU1dbX2Nna4eLj5OXm5+jp6vHy8/T19vf4+fr/xAAfAQADAQEBAQEBAQEBAAAAAAAAAQIDBAUGBwgJCgv/xAC1EQACAQIEBAMEBwUEBAABAncAAQIDEQQFITEGEkFRB2FxEyIygQgUQpGhscEJIzNS8BVictEKFiQ04SXxFxgZGiYnKCkqNTY3ODk6Q0RFRkdISUpTVFVWV1hZWmNkZWZnaGlqc3R1dnd4eXqCg4SFhoeIiYqSk5SVlpeYmZqio6Slpqeoqaqys7S1tre4ubrCw8TFxsfIycrS09TV1tfY2dri4+Tl5ufo6ery8/T19vf4+fr/2gAMAwEAAhEDEQA/AP0zooooAKKKKACjJpeAOfr0qK2uob6BZreZJ4W6SRsGBwcHke/H4UrpBckooopgFFL29/yrjfg7r1/4o+FXhPV9Un+1ajfabBPcTbFTe7ICThQAOfQCnbTmFzLm5Tse1GKPwz+IH4VxWofG74faXqEljeeNdBgu422SRyajECjejc8Y9CfSnGLlshOSjuztaKrtqVounNqBuofsAiM/2nevl+XjcX3ZwVxzn0pNM1Wz1vT7e/066hvbK4QSQ3Fu4eORT0ZWHBFLlaGmmWaKXrVCfXdNtdYttKmv7aHU7qNpYbN5QJpEX7zKudxA7kdM0WcmO6L1FH6UUgCiqWta5p3hvS59S1a/t9M0+Db5t1dSrHGmWCjLMQBliB9SBV3rTs9xXQUUUUhhRRRQAUUUUAL2qpqOqW2kwiW5k2bmCogBLSMeiqo5Lewz+VU/EWtXGj2qNaadcalcSHCRwqcL6lm7D+dcjpPjTTYb7zru21S/1h2eAstmSFZeWjiUE4wM5xknGSa5KleNOXJezZzVK0YPlbsb+qx6jeaXc3lzas8UcfmQ6TGctKw6CUgkNn+4OODndxit4fsblrSW5sNQt5rtJdkyiBoYpcAHa8Z5STnqvbGQelVtS+IenXkc2nyabrIlkZYDHHB5cod1LKoy3BIBqKx8VTaCIYH0LV572+kJ865ESNNIqDORuIHyr09q5HUpc6le6OZzhzp3ujrdM1qPUJGt5I3tL5Rue1m++B0yD0Ye44/EGtD+XavPNW8XHVtMsZ5vDd0YbqZIrSdbpFkWRs7SrA5U5HXp61q+B9e1nVE232nSfZS7iK9aSMEgEjDqvGcg8gAH0rop4mMp8mr+TN4YiMp8l7/JnXHoa8+/Z9/5Ib4E/wCwPa/+ixXoH8Nef/s+/wDJDfAn/YHtf/RYr0vsfM2f8T5HH/tGapeax4k+HXw8t7maysvFmoTDUZoJDG72tuqvJCGXBG/cAcHoCOhr2DTfD2laHpKabY6da2emxpsW1hhVYwo7EDj9O9effHL4eap4qi8OeI/DixSeJ/Ct99vs7eZti3UZAE1vu/h3qBz6gdOtX7T4v6PqViLXV9B8QadeTRlLjS7vQrqY8jBXckbJICCeVJBB/Ct5XnTiofMwi1GpLn+Quu+DdI8G/D3x0uixm0tLyxurlrOJv3EMhgYMY06IGIyQMDOT3NcV8OfiJZfDP9mHwFqVzBJfXVzZ2lhYWFuwEt3cycRxoT3PJz2AJwayfBXh29XXvj5NaeFtR0LStTsbRNKtZbEwCbbZSI3kqowxLkHA5BbDANkCv/wrPxBqf7O/wpntNNnHiPwhc2GsHRrhfIkmMJIeAh8bXwxxnuMcZzXSox5eWbvr+hzuUr80I202+Z6N4s+IviX4Z6MPEXinTdKl8PrLEl3/AGXNI01gkjBd53DEyqzLuxtPcA8CuM+KWqX9r+038NpdGso9UvJ9Hv0hSabyogCVJd32sQoXJ4GTwB1rU+NGsyfF/wCHOoeDfDemas+raw0NvK15pk9rFYp5is8kryIAAoU8Akk4Cgjpn+OtN1Pwj8cvhrqdroWqaxomk6LdWd5dWNq83kqQignaOW4DbR8xGcAnilTUY6vezKqSk9tro7DSPidrekfEjTfBPjDTbGC91e2ludL1PS5na3n8sbpImRwGRwvzdSCMdDU+peNPFj69qVnZ2Wh6Wbd3Wys9Wvc3WqKqg+ZGsZ/doT8oJ3HgkgY54+6jufi98ePA+u6bpepWnhvwnBezS6jqFpJaCe4njEaxRrIAzBcZJxjjGc1kfDnS7PQV8caZ428Lahqviy/1a6uDdLpks41GFj+4MEwUrGirhQCy7CMnbyaFTh21stA9pPVJ6XepH8ePH9r8Uf2LdY8U2du1pBqVtbSfZ3YMY2F5EjLkdQGUjPfHavpJegr5IHgjxCP+Cfx8PHQNU/t8RY/sn7HJ9q/5CW//AFW3d9z5unTnpX1vjt371hW5VGy7s1o8znzPsgakpTSVxnaFFFFABRRRQAdB0rzrw7ZCbxQZx92HXL0/nDg/qa9FrzzwndBNaVD1l1bUPzCg/wAs15+Jtzwv5nFXtzwv5k2rKq+Lrl9vzfb9OP44cfyroPE0Y+26A56pqA/WKUGsfVgv9v6kSeUvNNY/Qybf61seKztbRnP8OpRZ/FXX+tY2XJVRjooTMOxVZvBHhx258u+tiPwn2iuh8Ir5ehon92adT+Ez1yWl3Ah+G+nOzbTa6hHnn+7djP6V1vhdh9jvEHVL65GPTMrMP0IrSjJe0T/rY0otc6Nj+GvP/wBn3/khvgT/ALA9r/6LFegfw15/+z7/AMkN8Cf9ge1/9FivV+x8zqf8T5HT+IPGvh7wjJbJruvaZor3W/yF1C8jgMu3BbbvYbsZGcdMin6B4y0DxV5o0TXdN1jyf9YLC7jn2Z6bghOPxrxX48azbeH/ANoH4JahdwXNxBCNb3R2drJdSnNqijbFGrM3Lc4HAyTwDVUapp3xC/aS8I6noaN4cfR7O6F+2pRmxvNUR1AjhS3k2ySIhBbcVwM8EmuqNBOCeuquc0q7U3HTRn0X/nrRXBa54u1y08WXOmLNoOg6ekafZLvVrnfNfyMMkJCrqVVehZiST0XvXKS/tBXC/AnxD46/seKPVdDnms7rTvPLRefFMImw4AJXkEZHcfWsVRlJXRvKtCLsz2iqU2t6dbapbaZNf2sWpXSNJBZvMomlVfvMiE7mC5GSOmea8k8VfF3xl4H8L6b4x1fw9paeGZpbdbuziupGvrWKV1UPnaI3YbhlBwDwGPWovHl9BY/tNfDq7uJkt7aLQ9UkeaRwqqgCEsT2GOTVxw8r2f8ATIlXVtPI9tP+ec0lcz4I8V3njKG61MacbLQpCv8AZks+Vnuo8cymMgeWpONo+8QMnGcDpjXPJOLs9zoi1JXWwZoooqSgooooAKKKKACiiigDA8dRu/hyUqLiRVliMkVru8ySPzF3qNvJypPT0rm7az8Pr5ckXhrXYyrmQFY51wxGCeX6kcZr0SiuWpQ55c2n3XOedHnlzfocH9i0m8Z2bwzrUzuFDNMWy23lc75BnBp8nhfSZyGfwffye8k8R/Hmeu5o/wA9Kj6tDr+SJ+rx6/ocGvhHSV+54JYjv5ssJ/TzDUuk+G4rPXrC5svDs2jbGYzz/aEKsmxhs2q5zklTyP4a7ein9WprX9EP6vTTv+iErgP2ff8AkhvgT/sDW3/osV6B96ue+HvhM+BPAuheHTdfbTpdnFafaPL2eZsULu25OM46ZNehpycvma2fPzeR5Z8bnudH+OHwe8RnS9UvtJ0v+2Ptk2m2E12YfMtkjjysasfmY4H0J6A1S8dfbvjb46+HreHvD+r2Np4f1ZdTvNa1awlsVjiUYMMYlCu5cjB2rgbRk+n0DRW8cRyqOmqMJYfmb10Z89eG4bTwf8SviM3jrw7qGr6jrN60mnalFo82oQ3OmsqrFaKY0cIUIIZGAByDkjmuOsfBusw/snfEzSIfDmpWV7c6zeSWmlPA5nMRuIigUDJcbR94ZBweTX1tRVfWfLt+Avqy79/xPFv2i9B1LWf2dLnTrDT7m/vyliPstvA0kvyyxFvkUZ4APbgCs34tfDOH4i/GzwHa6vpV1feHRo2oR3kiCRYlYhNiu64AORkA9SB6V72aSojiJR2Xf8Ryw8Z7vt+B418GJfE/w7125+G3iO2vtV02yi8zQfEfks0U9oCQIJ3GQsqAYGcZA4xxu9l5+vvRS+9YzlzyvY3hDkja4lFFFZmgUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFABRRRQAUUUUAFFFFAH/2Q==)

*<BANKING ONLINE SYSTEM>*

PRODUCT SPECIFICATION

Version *<2.0>*

*<03/30/2022>*

VERSION HISTORY

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Version #** | **Implemented**  **By** | **Revision**  **Date** | **Approved**  **By** | **Approval**  **Date** | **Reason** |
| 1.0 | *SIna Kooshesh*  *David Krushnisky*  *Jia Zhu*  *Nada Haber* | *03/26/2022* | *Project*  *Manager* | *03/27/2022* | Initial Design Definition draft |
| 1.5 | *SIna Kooshesh*  *David Krushnisky*  *Jia Zhu*  *Nada Haber* | *03/29/2022* | Customer | *03/29/2022* | Intermediate Design stage |
| 2.0 | *SIna Kooshesh*  *David Krushnisky*  *Jia Zhu*  *Nada Haber* | *03/30/2022* | Project Manager and Development Team | *03/31/2022* | Final Design |

TABLE OF CONTENTS

[**1**](#_heading=h.1fob9te) **INTRODUCTION 5**

[1.1 Purpose of The Product Specification Document 5](#_heading=h.qsh70q)

[**2**](#_heading=h.3as4poj) **GENERAL OVERVIEW AND DESIGN GUIDELINES/APPROACH 5**

[2.1 Assumptions / Constraints / Standards 5](#_heading=h.1pxezwc)

[**3**](#_heading=h.1t3h5sf) **ARCHITECTURE DESIGN 5**

[3.1 Logical View 5](#_heading=h.4d34og8)

[3.2 Hardware Architecture 5](#_heading=h.2s8eyo1)

[3.3 Software Architecture 5](#_heading=h.17dp8vu)

[3.4 Security Architecture 5](#_heading=h.3rdcrjn)

[3.5 Communication Architecture 5](#_heading=h.26in1rg)

[3.6 Performance 6](#_heading=h.lnxbz9)

[**4**](#_heading=h.35nkun2) **SYSTEM DESIGN 6**

[4.1 Use-Cases 6](#_heading=h.1ksv4uv)

[4.2 Database Design 6](#_heading=h.44sinio)

[4.3 Data Conversions 6](#_heading=h.2jxsxqh)

[4.4 Application Program Interfaces 6](#_heading=h.z337ya)

[4.5 User Interface Design 6](#_heading=h.3j2qqm3)

[4.6 Performance 6](#_heading=h.1y810tw)

[**5**](#_heading=h.2xcytpi) **PRODUCT DESIGN SPECIFICATION APPROVAL 7**

[**APPENDIX A: REFERENCES 8**](#_heading=h.3whwml4)

[**APPENDIX B: KEY TERMS 9**](#_heading=h.2bn6wsx)

# INTRODUCTION

## PURPOSE OF THE PRODUCT DESIGN SPECIFICATION DOCUMENT

The Product Design Specification document documents and tracks the necessary information required to effectively define architecture and system design in order to give the development team guidance on architecture of the system to be developed. The Product Design Specification document is created during the Planning Phase of the project. Its intended audience is the project manager, project team, and development team. Some portions of this document such as the user interface (UI) may on occasion be shared with the client/user, and other stakeholder whose input/approval into the UI is needed. This Report explains the design and implementation of a Website for the Banking System “**Global Bank**”.

# GENERAL OVERVIEW AND DESIGN GUIDELINES/APPROACH

This online banking allows the customers of the bank to make financial transactions on a secured website operated by the bank. The customer may perform banking transactions electronically without visiting the bank. The bank provides the customers online services to login, perform and check transactions as well as transfer money to other clients.

## ASSUMPTIONS / / STANDARDS

*The banking interface system is primarily designed for online banking.*

The Website user should be able to perform following tasks:

* Should be able to login into the account.
* Should be able to see all the transactions.
* Should be able to add a contact so that he/she can send money.
* Should have an option to cancel the money within two hours which will work if the receiver didn’t receive it yet.
* Receiver gets the money, and it should show the updated amount on their accounts.
* The user can update personal information.

## CONSTRAINTS

* The customer must have a correct card number and password to log in to the system.
* For security purposes, if the incorrect password is given three times wrong, the user will be blocked to use the system for minutes.
* When choosing the desired account, a page will be opened to show the existing balance of the chosen account number.
* Customers may transfer money to another account that they own or to another client who is in their contact list.
* The sender and the receiver are allowed to access the online website.
* The administrator can add new customers to the banking system, and assign his username, password and type of account.
* The customer, after logging with his correct credentials, can request a balance enquiry for one of his account numbers. The system should allow him to change his personal data and add a contact in his contact list.

# ARCHITECTURE DESIGN

*The user submits a request through the URL. The Laravel controller is called through a specific route. The controller gets alert about particular events., which updates the model and returns or saves the data in the Database. The View grabs the model data, updates itself and shows the view in the user’s browser.*

The Routes implemented in Laravel functions are as follows:

**localhost/** opens the index.html file.

Then we can navigate the website to perform the tasks listed in Section 2.1.

**localhost/customer/id** gives us a view page of the Customer credentials, his accounts information, his contact list and all his related transactions.

*Diagram

Description automatically generated*

*(Figure:1)*

## LOGICAL VIEW (DATABASE Entity relationships(ER))

Analyzing the data in the online banking system includes the following **entities**:

A) Customer:

The customer is the one who is using the website to create an account, to transfer and receive money. He can have more than one account. Customer entity will store data like customer id, card number, first name, last name, phone number, email, and address.

B) Login:

This entity will have a list of usernames and passwords available in the system. Each customer will have unique “Username” and “Password”.

C) Account:

Every user can have more than one account. This entity contains Account Number, Customer ID, Type, and Balance.

D) Transaction:

For every Account, we can have many transactions, which can be transferring or receiving amounts of money. This entity contains: Transaction Id, Account Number (of sender), Contact Id (of receiver), the amount of money and a Flag(boolean) that will allow the sender to cancel the transaction in 2 hours if the amount is not accepted by the Receiver.

E) Contact:

Every customer has a list of related contacts in which he can send money to. The contact entity has contact Id, customer Id (of sender) and account number.

**The Database ER-Diagram is the following:**

**Diagram

Description automatically generated with medium confidence**

## SOFTWARE ARCHITECTURE

*The following software requirements are demanded:*

* *Technology: Apache Server*
* *Language used: Laravel*
* *User Interface designed using: HTML*
* *Web Browser: Google Chrome, Internet Explorer*

## SECURITY ARCHITECTURE

Laravel comes with a native hash mechanism, which speeds up the searching and adding procedures. Its built-in login (*LoginController*) and register (*RegisterController*) classes enable the default method for saving user passwords, registration, and for the authentication process.

In addition, it has built in encryption features. To ensure that no encrypted data can be modified by an unauthorized party, Laravel encrypts\* the values transferred using a Message Authentication Code (MAC). To enable this security feature, you must add the “*key*” option in the *config/app.php*configuration file.

## COMMUNICATION ARCHITECTURE

*The bank’s database is stored on secure servers in the bank in which backups take place every day from 2:00 a.m. till 3:00 a.m. during which the website user will not be able to do any online transactions.*

## PERFORMANCE

*[Additional changes in the future.]*

# SYSTEM DESIGN

## USE-CASES

*In the LOGIN process, when the user fills the username and password, and clicks “Log*

*In”, he is redirected to “MY PROFILE” page.*

*In the SINUP process, when the user is signing up for a new account, and clicks “Sign Up” button, he is redirected to his account in account.html webpage.*

*When the user creates a new CONTACT (to have the possibility to send money to), he is redirected to account.html webpage.*

*When the user fills up the form to transfer the money to another account, he is redirected to…*

## DATABASE DESIGN

*The database architecture is stored as tables in the “Model” folder of the project, whose relation are illustrated in section 3.1.*

## DATA CONVERSIONS

*[Insert any documents describing any necessary data conversions or provide a reference to where they are stored.]*

## APPLICATION PROGRAM INTERFACES

*[Insert any application program interface documents or provide a reference to where they are stored.]*

## USER INTERFACE DESIGN

*The Website forms are as follows:*

*Graphical user interface, application, website

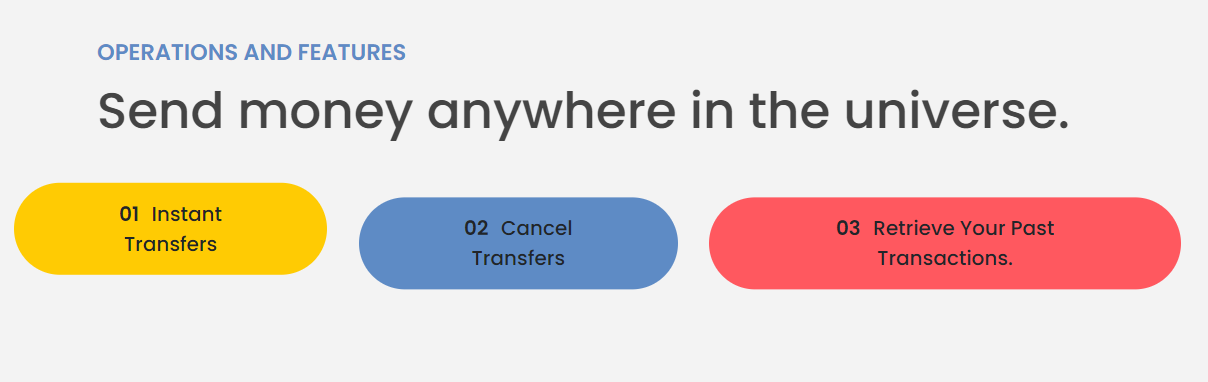
Description automatically generated*

*Graphical user interface

Description automatically generated*

**Graphical user interface, application

Description automatically generated**

**

*Graphical user interface, application, Word

Description automatically generated*

# PRODUCT DESIGN SPECIFICATION APPROVAL

The undersigned acknowledge they have reviewed the *Banking Online System* **Product Design Specification** document and agree with the approach it presents. Any changes to this Requirements Definition will be coordinated with and approved by the undersigned or their designated representatives.

|  |  |
| --- | --- |
| ***Name*** | ***Responsibility*** |
| *Sina Kooshesh* | *Back End Developer* |
| *Nada Haber* | *System Analyst: Report* |
| *Jia Zhu* | *Front - Back End Developer* |
| *David Krushnisky* | *Front - Back End Developer* |

**Appendix A: References**

***Security Architecture:***

[Laravel Security Best Practices - Features to Secure PHP Apps | ASPER BROTHERS](https://asperbrothers.com/blog/laravel-security/)

*www.Laravel.com*

**Appendix B: Key Terms**

The following table provides definitions for terms relevant to this document.

|  |  |
| --- | --- |
| **Term** | **Definition** |
| *Encryption* | *Converting the information into a code, to prevent unauthorized access* |
| *Entity* | *A thing, person, place or any object that we need to store information related to it in the database.* |
| *[Insert Term]* | *[Provide definition of the term used in this document.]* |