In this exercise, you will get an opportunity to apply the Lean Startup with Design Thinking techniques.

In this assignment you will apply some of the Design Thinking techniques (identify assumptions and risks, select the riskiest assumptions, and write MVP tests for the riskiest assumptions) to a fictitious situation. Feel free to make reasonable assumptions about user needs and additional functionality required to satisfy user needs.

Case​ ​Study:​ ​Remote​ ​Deposit​ ​Capture

1. Recently,​ ​several​ ​banks​ ​have​ ​started​ ​offering​ ​customers​ ​remote​ ​deposit​ ​capture.​ ​With this​ ​new​ ​service,​ ​customers​ ​do​ ​not​ ​have​ ​to​ ​physically​ ​go​ ​to​ ​banks​ ​or​ ​ATM​ ​machines​ ​to deposit​ ​checks​ ​anymore.​ ​Instead,​ ​they​ ​can​ ​send​ ​checks​ ​as​ ​a​ ​scanned​ ​image​ ​through​ ​an Internet​ ​portal​ ​provided​ ​by​ ​the​ ​bank.
2. This​ ​technology​ ​can​ ​save​ ​banks​ ​and​ ​customers​ ​time​ ​and​ ​money​ ​making​ ​the transactions.​ ​Blue​ ​Bank​ ​is​ ​considering​ ​implementing​ ​this​ ​new​ ​service.
3. To​ ​use​ ​it,​ ​customers​ ​need​ ​a​ ​remote​ ​capture​ ​account​ ​with​ ​Blue​ ​Bank.​ ​In​ ​addition,​ ​they can​ ​either​ ​download​ ​an​ ​app​ ​on​ ​their​ ​phone​ ​or​ ​they​ ​need​ ​to​ ​install​ ​a​ ​browser​ ​plugin​ ​to use​ ​any​ ​general​ ​purpose​ ​scanner​ ​attached​ ​to​ ​their​ ​computer.​ ​The​ ​customer​ ​will​ ​be prompted​ ​to​ ​install​ ​the​ ​browser​ ​plugin​ ​when​ ​customer​ ​tries​ ​to​ ​deposit​ ​checks​ ​using bank’s​ ​internet​ ​portal.
4. Once​ ​the​ ​account​ ​is​ ​established​ ​in​ ​the​ ​system​ ​and​ ​customer​ ​has​ ​setup​ ​the​ ​mobile​ ​phone or​ ​browser​ ​plugin,​ ​customers​ ​will​ ​be​ ​able​ ​to​ ​scan​ ​all​ ​of​ ​their​ ​checks​ ​anytime​ ​and anywhere​ ​by​ ​using​ ​the​ ​bank​ ​mobile​ ​app​ ​or​ ​by​ ​accessing​ ​the​ ​bank’s​ ​Internet​ ​portal, logging​ ​in,​ ​and​ ​scanning​ ​the​ ​checks.
5. The​ ​service​ ​should​ ​be​ ​as​ ​easy​ ​as​ ​sending​ ​an​ ​attachment​ ​in​ ​an​ ​email.​ ​Of​ ​course,​ ​this new​ ​application​ ​has​ ​to​ ​be​ ​very​ ​reliable,​ ​secure,​ ​and​ ​easy​ ​to​ ​use.​ ​It​ ​must​ ​be​ ​integrated into​ ​the​ ​current​ ​Blue​ ​Bank​ ​Web​ ​site,​ ​and​ ​the​ ​Web​ ​site​ ​must​ ​also​ ​provide​ ​the​ ​ability​ ​for customers​ ​to​ ​purchase​ ​the​ ​general​ ​purpose​ ​pre-tested​ ​scanners.
6. Blue​ ​Bank​ ​will​ ​set​ ​up​ ​the​ ​scanner-purchasing​ ​ability​ ​with​ ​several​ ​appropriate​ ​hardware vendors​ ​and​ ​sell​ ​the​ ​devices​ ​at​ ​its​ ​physical​ ​banks​ ​as​ ​well.
7. Blue​ ​Bank​ ​is​ ​not​ ​sure​ ​yet​ ​what​ ​to​ ​charge​ ​for​ ​the​ ​scanners​ ​or​ ​service.​ ​The​ ​Website​ ​will also​ ​provide​ ​online​ ​technical​ ​support​ ​and​ ​instructions​ ​showing​ ​customers​ ​how​ ​to​ ​setup and​ ​use​ ​the​ ​new​ ​scanner​ ​and​ ​service.​ ​Support​ ​will​ ​be​ ​provided​ ​24/7​ ​via​ ​the​ ​Web​ ​site and​ ​telephone.
8. Several​ ​managers​ ​at​ ​Blue​ ​Bank​ ​are​ ​not​ ​sure​ ​that​ ​they​ ​should​ ​invest​ ​in​ ​remote​ ​deposit capture.​ ​The​ ​bank​ ​prides​ ​itself​ ​on​ ​being​ ​customer-oriented,​ ​having​ ​several​ ​large​ ​bank buildings,​ ​ATMs​ ​and​ ​remote​ ​bank​ ​sites​ ​in​ ​many​ ​grocery​ ​stores,​ ​primarily​ ​throughout​ ​the Midwest.​ ​Many​ ​of​ ​its​ ​customers​ ​have​ ​banked​ ​with​ ​Blue​ ​Bank​ ​their​ ​whole​ ​lives,​ ​but​ ​less than​ ​half​ ​of​ ​them​ ​use​ ​any​ ​of​ ​its​ ​current​ ​Internet​ ​banking​ ​services.
9. The​ ​new​ ​VP​ ​of​ ​IT​ ​was​ ​hired​ ​to​ ​prepare​ ​Blue​ ​Bank​ ​for​ ​the​ ​future​ ​and​ ​to​ ​reduce​ ​the​ ​loss​ ​of younger​ ​customers​ ​who​ ​have​ ​moved​ ​to​ ​banks​ ​that​ ​are​ ​more​ ​progressive.

10. **Initial**​ ​**estimates**​​ ​suggests​ ​that​ ​the​ ​project​ ​will​ ​take​ ​6​ ​months​ ​to​ ​complete​ ​and​ ​cost​ ​about $500,000.​ ​Annual​ ​operating​ ​costs​ ​would​ ​be​ ​about​ ​$150,000​ ​per​ ​year​ ​for​ ​three​ ​years. Estimated​ ​benefits​ ​are​ ​about​ ​$400,000​ ​per​ ​year​ ​for​ ​three​ ​years.

11. Harold​ ​Johnson,​ ​the​ ​project​ ​sponsor,​ ​had​ ​told​ ​you​ ​that​ ​​**you**​ ​**will**​ ​**be**​ ​**leading**​ ​**this**​ ​**project** and​ ​​​it​ ​is​ ​important​ ​to​ ​finish​ ​on​ ​time​ ​and​ ​within​ ​budget,​ ​but​ ​it​ ​is​ ​even​ ​more​ ​important​ ​to provide​ ​a​ ​high-quality​ ​service​ ​and​ ​avoid​ ​any​ ​potential​ ​technical​ ​or​ ​user​ ​problems​ ​after implementation.​ ​Blue​ ​Bank​ ​wants​ ​to​ ​attract​ ​new​ ​customers​ ​with​ ​remote​ ​deposit​ ​capture and​ ​avoid​ ​losing​ ​current​ ​customers,​ ​so​ ​quality​ ​and​ ​customer​ ​service​ ​is​ ​key.

12. **The**​ ​**team**​​ ​to​ ​work​ ​on​ ​this​ ​project​ ​has​ ​4​ ​developers,​ ​2​ ​testers.​ ​Most​ ​of​ ​the​ ​developers​ ​and testers​ ​has​ ​offices​ ​on​ ​different​ ​floors​ ​of​ ​the​ ​building​ ​and​ ​generally​ ​works​ ​in​ ​their​ ​office.

13. The​​ ​**team**​ ​**members**​​ ​have​ ​some​ ​​**experience**​ i​​ n​ ​web​ ​development​ ​but​ ​none​ ​in​ ​mobile development.​ ​Nobody​ ​on​ ​team​ ​has​ ​performance​ ​testing​ ​experience​ ​or​ ​User​ ​experience expertise.​ ​Also,​ ​since​ ​this​ ​is​ ​the​ ​first​ ​agile​ ​project​ ​for​ ​the​ ​team,​ ​they​ ​are​ ​not​ ​familiar​ ​with engineering​ ​practices​ ​like​ ​automated​ ​testing,​ ​continuous​ ​integration,​ ​etc.

14. **The**​ ​**Business**​ ​**stakeholders**​​ ​who​ ​wrote​ ​the​ ​high​ ​level​ ​vision​ ​for​ ​the​ ​mobile​ ​application are​ ​going​ ​to​ ​help​ ​refine​ ​or​ ​define​ ​the​ ​user​ ​needs.​ ​They​ ​currently​ ​sit​ ​in​ ​different​ ​building. They​ ​are​ ​working​ ​on​ ​writing​ ​detailed​ ​requirements​ ​and​ ​planning​ ​to​ ​hand-off​ ​to​ ​you​ ​in​ ​2 weeks.

1. Your​ ​peers​ ​have​ ​suggested​ ​that​ ​you​ ​want​ ​to​ ​be​ ​sure​ ​that​ ​the​ ​project​ ​will​ ​please​ ​key stakeholders,​ ​in​ ​particular​ ​Harold,​ ​the​ ​project​ ​sponsor,​ ​and​ ​Tricia,​ ​the​ ​VP​ ​of​ ​Marketing. Both​ ​of​ ​these​ ​senior​ ​managers​ ​are​ ​very​ ​aware​ ​of​ ​customers’​ ​needs,​ ​so​ ​it​ ​is​ ​important that​ ​the​ ​new​ ​service​ ​is​ ​stable,​ ​secure,​ ​and​ ​easy​ ​to​ ​use.
2. They​ ​both​ ​want​ ​the​ ​remote​ ​deposit​ ​capture​ ​capability​ ​to​ ​be​ ​ready​ ​as​ ​soon​ ​as​ ​possible​ ​so the​ ​company​ ​can​ ​start​ ​promoting​ ​this​ ​new​ ​service.

17. **High**​ ​**Level**​ ​**Vision**​:​ ​Here​ ​are​ ​the​ ​High​ ​Level​ ​Vision​ ​for​ ​the​ ​Remote​ ​Deposit​ ​Capture: **18.** Using​ ​the​​ ​**new**​ ​**mobile**​ ​**app,**​ ​​Blue​ ​Bank​ ​customers​ ​can:

1. Download​ ​an​ ​app​ ​for​ ​iPhone,​ ​android​ ​phones,​ ​windows​ ​phones
2. Login​ ​in​ ​the​ ​app​ ​using​ ​their​ ​internet​ ​portal​ ​account​ ​or​ ​identify​ ​themselves​ ​using

other​ ​authentication​ ​methods.

1. View​ ​balance​ ​of​ ​their​ ​accounts
2. Deposit​ ​checks​ ​to​ ​deposit​ ​account
   1. take​ ​secure/fraud​ ​proof​ ​pictures​ ​of​ ​checks​ ​(back​ ​and​ ​front)
   2. enter​ ​details​ ​of​ ​the​ ​check​ ​-​ ​like​ ​amt
   3. Select​ ​account​ ​to​ ​deposit
   4. validate​ ​check​ ​image​ ​against​ ​the​ ​entered​ ​details
   5. deposit​ ​the​ ​e-check​ ​into​ ​the​ ​bank​ ​account
3. Provide​ ​opportunity​ ​for​ ​bank​ ​to​ ​share​ ​new​ ​offers​ ​and​ ​promotions​ ​to​ ​customers.

**19. New**​ ​**browser**​ ​**plugin**​ ​​should​ ​support:

1. Secure/fraud​ ​proof​ ​scanning​ ​of​ ​checks
2. Support​ ​IE,​ ​Firefox,​ ​Chrome​ ​and​ ​Safari
3. Add​ ​support​ ​for​ ​pre-approved​ ​supported​ ​scanners.
4. Work​ ​with​ ​other​ ​scanners​ ​that​ ​supports​ ​ISO​ ​protocols​ ​for​ ​scanners.

e. Work​ ​seamlessly​ ​with​ ​pre-approved​ ​supported​ ​scanner  
20. **Changes**​ ​**to**​ ​**bank’s**​ ​**internet**​ ​**portal**​​ ​will​ ​allow​ ​Blue​ ​Bank​ ​customers​ ​to:

1. Create​ ​/​ ​update​ ​/​ ​delete​ ​deposit​ ​account
2. Scanning​ ​checks​ ​using​ ​the​ ​browser​ ​plugin​ ​(back​ ​and​ ​front)
3. Deposit​ ​e-check​ ​to​ ​deposit​ ​account

* ○  Enter​ ​details​ ​of​ ​the​ ​check​ ​-​ ​like​ ​amt
* ○  Validate​ ​check​ ​image​ ​against​ ​the​ ​entered​ ​details

Identify some of the assumptions made about the success of remote deposit capture functionality. Assess the risk of each assumption affecting our product by classifying the assumptions into following four categories:

1. High impact if wrong, High Probability of it being wrong
2. High impact if wrong, Low Probability of it being wrong
3. Low impact if wrong, High Probability of it being wrong
4. Low impact if wrong, Low Probability of it being wrong

For each assumption, provide the reason why you categorized the assumption into the particular category.

1.     The​ ​service​ ​should​ ​be​ ​as​ ​easy​ ​as​ ​sending​ ​an​ ​attachment​ ​in​ ​an​ ​email.​ ​Of​ ​course,​ ​this new​ ​application​ ​has​ ​to​ ​be​ ​very​ ​reliable,​ ​secure,​ ​and​ ​easy​ ​to​ ​use.​ ​It​ ​must​ ​be​ ​integrated into​ ​the​ ​current​ ​Blue​ ​Bank​ ​Web​ ​site,​ ​and​ ​the​ ​Web​ ​site​ ​must​ ​also​ ​provide​ ​the​ ​ability​ ​for customers​ ​to​ ​purchase​ ​the​ ​general​ ​purpose​ ​pre-tested​ ​scanners. – High impact if wrong, high probability of it being wrong – many issues surrounding the scanner functions, also a new feature for the bank if rolled and done badly will affect clients and as unknown territory for the bank has a high probability.

2.     This​ ​technology​ ​can​ ​save​ ​banks​ ​and​ ​customers​ ​time​ ​and​ ​money​ ​making​ ​the transactions.​ ​Blue​ ​Bank​ ​is​ ​considering​ ​implementing​ ​this​ ​new​ ​service. – low impact if wrong, low probability of it being wrong – customers already bank with Blue bank so if the feature isn’t rolled out then it won’t change clients behaviour

3.     To​ ​use​ ​it,​ ​customers​ ​need​ ​a​ ​remote​ ​capture​ ​account​ ​with​ ​Blue​ ​Bank.​ ​In​ ​addition,​ ​they can​ ​either​ ​download​ ​an​ ​app​ ​on​ ​their​ ​phone​ ​or​ ​they​ ​need​ ​to​ ​install​ ​a​ ​browser​ ​plugin​ ​to use​ ​any​ ​general​ ​purpose​ ​scanner​ ​attached​ ​to​ ​their​ ​computer.​ ​The​ ​customer​ ​will​ ​be prompted​ ​to​ ​install​ ​the​ ​browser​ ​plugin​ ​when​ ​customer​ ​tries​ ​to​ ​deposit​ ​checks​ ​using bank’s​ ​internet​ ​portal. – Low impact of wrong, high probability of being wrong, if the client install the app or can’t unlikely to affect their banking experience, however high probability due to the nature of rollout required

4.     Blue​ ​Bank​ ​is​ ​not​ ​sure​ ​yet​ ​what​ ​to​ ​charge​ ​for​ ​the​ ​scanners​ ​or​ ​service.​ ​The​ ​Website​ ​will also​ ​provide​ ​online​ ​technical​ ​support​ ​and​ ​instructions​ ​showing​ ​customers​ ​how​ ​to​ ​setup and​ ​use​ ​the​ ​new​ ​scanner​ ​and​ ​service.​ ​Support​ ​will​ ​be​ ​provided​ ​24/7​ ​via​ ​the​ ​Web​ ​site and​ ​telephone. – High impact if wrong, low probability of it being wrong, clients wont be happy for a free service at present to now being charged and may well affect their view point, technical support should be easy to do and walk through so low impact

For any **three**assumptions you identified, please list the MVP Tests or Minimum Viable Experiments you can conduct to validate the assumptions? Please categorize your MVP Tests according to the following categories. It is okay to have 1 or 2 categories with no tests.

1. High Cost, High Quality Data (tests that will be costly to conduct, but will result in high quality data)
2. High Cost, Low Quality Data (tests that will be costly to conduct and will result in low quality data)
3. Low Cost, High Quality Data (tests that will be inexpensive to conduct, but will result in high quality data)
4. Low Cost, Low Quality Data (tests that will be inexpensive to conduct and will result in low quality data)

For all the points above I think the below tests / experiments could be applied to all

Survey of customers, who would actually use the service if it was rolled out?, low cost, low quality

Observe and interview customers and staff about the feature of the app and how it works, how it can save time – high cost, high quality

Video & demonstration of how to use the new functionality, step by step guide – low cost, high quality

Test build of the app and rolled out to a sample of clients / customers for them to feedback – high cost, low quality