Taking the App for a Drive

We'll cover the following

- Writing main() function
- Running the application

Writing `main()` function

Let's write a `main()` function to call the `getAirportStatus()` function with a few different airport codes and print the status of the airports with those codes to the console. In your local setup create a file named `AirportApp.kt` in the directory `src/main/kotlin/com/agiledeveloper/ui` and key in the following code:

```
package com.agiledeveloper.ui

import kotlinx.coroutines.*
import com.agiledeveloper.airportstatus.*

fun main() = runBlocking {
  getAirportStatus(listOf("SFO", "IAD", "IAH", "ORD", "LAX"))
    .forEach { println(it) }
}
```

AirportApp.kt

Since `getAirportStatus()` is a function that may be suspended, it can only be called within a coroutine. So we invoke it from within the block passed to the `runBlocking()` function. Whatever data is returned for each airport is printed in the lambda provided to the `forEach()` function. Since the data obtained by this program is real, the output will be different for each run.

Running the application

Run the program to see the relevant output.

```
PK□□
  □□   A     □           META-INF/□ PK□□
  □□   A m±>=@   ?   □   META-INF/MANIFEST.MFóMÌËLK-.ÑK-*ÎÌÏ³R0Ô3àåòÌ-ÈIÍMÍ+I,□
ê□d□äqZ) □%¦äq*□□%□□q□ñcñc□ PK□□
```

□□ A □ □ org/□ PK□□
□□ A □ □ org/gradle/□ PK□□
□□ A □ □ org/gradle/wrapper/□ PK□□
□□ A ªÙfØ□□ ê - org/gradle/wrapper/BootstrapMainStarter.class□V[W□W□þ□□d`□□c@□□□7
?(□â□□□LÊxKÆE□¼,¤à2®(□ÂU±L+□!£`□³b¹Ö□ëBòv□ædde□(èÂ¼□□□g±(ãÆNÄð□□\□n
wKb¹%□Û□xWÁ{x_□Þ□e±Í+8□□Î□9gX□;Á□J$□□¤I»@Ò®□añÙji□;óú²I□hÆÎëæ¢î□â¼.□ÜU£Â□ÌØN1]tô□ÉÓ÷□½\æNú□
□ÚàñÊ`JÅ·øN¤ö=Ãày¾]û·ëCºA□GÉv-µ6JØµ□æ¦□ÚD²ñzL□7□{ª®□Ù¢□!Í□□r□í□+r7û°âòRóE<´Zx·□»×u□[43□ÁÌ□"m
vå«□p□¾Ç□ÂúR□|□»□mÆE_â□á:MÚ×çÅñÄÖaµ□`□ZP□7ÛØ,m±I¾hÐDë□}□ºúl£/ÿ^4ùª□□[ETÔ¼,1G[□J□D□jj\q.¦d"¹¥
□D□□Ô□"-2f□¤'□□□□¬aÇì□□rÒ□□r¡Ñ□Â5D²ë□kèXCç□´□%.Õº3.EÕ□v□□ãáènÒîÊ□¢ÝÙ□ö□Eâ□F□h.4Li{oÄ¥¿□{,
&Ë□□Ñ-£×û□Éè□é÷□0æeÍ0N□è□SgýgÊ*BÏé'èÍG÷a□ñ□□§□¡3R□tèG□□é□N □jè□□¨áàcDâá_□Ii§çÿ<Á¡\´?àj□□× ý
□□ A hQþ}¢ Ò # org/gradle/wrapper/Download$1.class}□M
Â0□□ßh5µ*v/□□×□¾□?àB\x□Ø□Ø□□□T{7□□ÀC□)âÖ□æ□¾÷^ïÇ□À□C□Æ0 $g{s□Ü□Z□Æ[Û□mE¾,Å]□&;□ië□£□²¾Ú□
□□ A Çåî©□□ L□ 4 org/gradle/wrapper/Download$ProxyAuthenticator.class□S]O□A□=³-l]¶XWmEä
ó□nb!□Å□□Ìö□□eÜv□□ocÅÆ□□ñga□êç ?¿Å□,Ë□`,X cñº½»#Ô□¾□QÄ«È*□¶,
Í¹□LêFØ¢Ü□□{Ýµ¶n□X□U®¥bp_Æ±På□·Z□0Å□Tõ ®x-□AGñfS¨à□ìÄ□äµ¥³□%□©ºÐ□DïHU□È□2fXôó□÷ü□□b¡□á □□»
□□ A 5¶<□À□ □□ ! org/gradle/wrapper/Download.class□Y |\ÇYÿ□Òî¾§ÕÓáõ¹¾²NìXÖi;□□Ë□□K¾dË
ÊrYaÊJuë*CV□²Æ□°)kYgÊú □d□)□M¹Eí□¡&²É□[M¹Í□Í¦l1åvS¶□Ò 6ØfH£!M□«+□pÜÎ,□J9)A¨ÏM^□9□ö&□□□□µ½¤+
Ä□□□□åëN º□m□®=□wÚ.¹öô´ã¶uëI□18î±§□ú□¾!ÇMÅ□ Aý´□□p□Tª;□ò□□Ú§¥Ü>□□□□ñ¤=Ö·□□;□î□%bÞ~AGÃ□□,
O¼#ç¹HE]Ñíìu□Ùn<¦,V□q□□)Ï,§□1 #ËÎê¢□□2»õ□£²K°□E=□□Û□3XðÄå□Rj¶ö\B#□9ÍM/%]Z□*ÙNg«`ECÙ□□□6ä$Æ□
È□}¦7t.□+□}óÏ□ÀxÒ□²¾□&□ñT□□r\Ø□õè□À□□0b8Ïþ□ □□c-¦□(□□□O□□□BH½□Ø□©□□þ¦s_>#ø□÷2fØ>ÌÑ üõñ[Õ
¶□`âV¼□¼Æ,#¾□oÓ?ëUiA¢{JT□î)a□ZÄ£9□ïä□ú!pcã,*□□®¡²±å□|□aß5ø□□¯!À c^îF□l¦´-ÜïvÔb+V □□Ø□ÔBé²
ûf±□._Ón□}¡pØÈ`mØ□Áºvÿ²□|Êl7ÕhÃî`Õ□êª=5a□ØÌ`ãðîª□ç1u□·d□y
+?□M¡[3,m□□□C[fqûÊ«jVV]±÷Ô¬ªÖßêUÕ+°uªê=Ï¡©ñ□¨mË ñ□&:{ªI Ü@H}□V□¯¬ªù$□□h □□+«2h~áæ»
ØËù}ä,□îßÏ□¹□ÔûÐ□□Ø□□Ît²=□.□F□□ÐáG1ÄÑ□□±ú□3□º□Þ=K/□ ÇÓ8□□¢□□%çÇ1□Wq□²Oã□8□/á,¾□□ð□□£□§ñ
«□s□¢Þ=Ä½y□Þ_À□ý□□Ù□□□`: waç46¾]cvÅ□¨f□V□□ØL&¾ï³P)q
pæqºã`□□N4□□gp$t´ôÓèÊàXOsè,□wû8□®□□□Øík□Î÷dÐÛî□ûÂ~NöW6□ú28I□ÞWÐ□□+□ÔÊÁÒ□a□□ãn÷Íah8tJ□Ø[^¦□&
×TJGoò\ñ□H$h*□d0□;¤□æH□sGh□□Ô□Ði¶=Í7p□□n]._xÄ□¨oÏàLK6_®2»Î^-dÌ*}R¾□□|□º¿□eô□aî□¢LÙQÐ~□Îe^a¨ñ
³Uð<öü Ô¯□!□t□ºGX}[Y}Ê¶£Y□r¶□□È□Ò□±□□OkÛB□□ÏhÛÂ□ú□õ!Â*z□=?÷Ù□_a/@ÎWµä_Å□¾FU`\ÿ_M□êÿEN"ømPK□
□□ A y□L¢¡ Ê 1 org/gradle/wrapper/DownloadProgressListener.classu□Á
□@□Eï+Ój□DËöEÐ@Û□E□□ERûI□¦□#3cþ[□> □□4Úv□□»9□×ûñ□°ÂÀ□ç¡O□Äª.r%ãÐJ[□ÍM□ Ç□ñ,Èä]□□8□ökß□_
□□ A !9|□¶□ □ 3 org/gradle/wrapper/ExclusiveFileAccessManager.class□WÛs□W□ÿ□YÒÚ«u|iªVÍM
t□_2/□YÛtæ³S¾g9óý□C®SñMÇ□1íª□hñ□t«þDE@ä□v□]ÛÎ;¾ô.□¶"Æ□,Çò□ Ä2ù|÷□@tÈ-R°mÜrä©jiNzÓæ□-□=·`Ú3¦g
□äMn,Ér¹Q□□ïíõÀôtÿ1□□)ß,,N□å@LÃ×5|CÃ75|K@gùdÙ·□'ÂhÊ□wL¿êQ÷ÄÀtnk□□}¢2□□ts¥□óÒ□&J',ÛVXjÊt³□□%s
úð²□Wð□ï©åûx□À¹cóLÕQ½V$□ÃCnÕ.¦□×O□<iú2]6UÒÓÅ□□Ó□]/ □¾HÛi□¯□□~``□§□□¾□,□"Þ□□□âG□~□□□x□g4½
□²□^2-□É L¯µ\:lþ´ï□□ä(ö3¾eà:®jø¹□·qZÃ/ü□WYÐ;A¯□¶}3□□öÜ□r□û»µS#»Û□□^L/xîR¨□X□ □|
Ú□F[F
ý□f□º >#□&¤□A7□zx□ □N5@,ïT3□Ï(ïú□åz□§Yò4©□}Ï□□]□ Ò³û□4½□□?□□E¹vqÝ□□□À□<Ì□□ □□áÓøLø¥□□□Á
□Wÿ□□ßÄ®T□□U4]»□Ýï¬~¨Tô®7½□6□□□övîãþà□7□ÝBZ §§Hè
□Ò«@'□¼c ¥¿□Klï□,□3Ö1□·□ÿ¿ãcÑÆ□¶□□õDQDDwp>¨□äPõz□□p}□ÕÊ□@8B □gmÎ³*&□_$W□Ô
ëö□+ô□kô□□rÖ}□¿F□¿A?~□□Ô(µ□AZ□ÆÇ8□□ðÃñ□ü:ü□Æ°□q□Á¤Ð8Ó□□"□¼Ø□Q±□câ ï?□ z5)□□çq□j□□sDP□·
□□ A □ì□,y□ □□ - org/gradle/wrapper/GradleUserHomeLookup.class□SÛNÛ@□=□$v□□Ô□K
□J)$´Ä□ÚÒ□E¢`@"\□@¤<E&Y□□±#Ç¡¢_Õ□□¨H}ìC¿©ª:ë□K □äaföäìÌ9ëÝ?ÿ~þ□0□□□Q□Ix&c\Á□â□□
B□□ñ\¬_DÐ□) I□
Ædè"¿□1-ò□□Y□þeceq7µ□_M/.§□ünÆHç×¶6□-u`□□ºm:%=ã{□SúÀ0t□□ßNom□é□\~ÝÈ1t,¹NÅ7□?kÚUNýïð□Íl□□□·□
qhN□aê^-ëN□3ß¾□û0Þd6□ÐÃ□Ò□jEL□□U1tS&>Õ-□Þsc-□ÂÄg¥ØO□N□Q□M□□}□(1□á ìÁ#□j□□□R□`□□ë□¿□Í□iõ□
□□ A À!lá7 "□ * org/gradle/wrapper/GradleWrapperMain.class□X□\□W□ÿ□,Ì2□□□m□"1*□□<Ë©`
^Ëµ\õJ¼j®×äº^ÙåäÕë%×{ï½z½ær÷□3Ë²e□üî÷□·ó¾÷½ÿ×¿÷□□=rå□□R¥□')Ø□'+Pp□□□"□§Êx□□□A.ÁÓe<C£½^<Ó□g
□:ä□+x ^*`_&□□□á□
.â~□¯ôâU^¼Z□□×Èx□5x□□j¼^Æ□□¬□ □ñF□oòâÍ
□x□□□ð øz«□Þ&□·{ñ□/Þ© □ï□ów+,□Ë
Þ□÷*x□Þ¯ □□□I□□P°□W□L`Ê□□□W½,&ãºøü□Xü°Xü□@á×Gñ11|\Á'ðI□□Â§e<¤ □□□°¬½§¹5Øv¬¿·çXG÷Á¶cÝ□ú:»»$ø
Ô□□ài1□)"□□é]□è ÝìÓNDt¡¤□Ò"G43,æi¢Ç□Ç%¬□□æHÃ□©Gô□qS□□ÓÍ□v{:àÌ□já□□òDù+ai`¨Ðd[ºf□□¯ÊeY
¶¯□ü,KÕl?□□□□□ãý±Ó1ÖV÷t/_□¨□Ï□Rb¤Awº□s³@tO·¥Y□¶;^6ªÅ□Í□DT□Ys©□Á□gÛÉðHÂd®+hY□Æ□¾]l□□óµÆõxËÚf
Î»²æ□ðò□÷b□□Iià¯Äßâú□□\¶Yz8□ØÄÕèå¨:èC?□Kq□□äâfé>*UFÚõI□□7LÂs□Cq×□J□S□□=~O□Þ□¿§ø*J□□|e½□□□U
Õ□þÒ)H□}«}5)Ü<□5□~o
·¤°v
ë□´>□Ú□³□ÀÇq=½\KC□(G=□a□Va#¶c□:è¯ÃØ□Ça+□□¢c□&°□÷`7îE□ÎãV\`□®a□íº1Ç=ä□´c7ÅÇÈ□ÝY□$îä×□J,ÌgÉ□□
□á³0-fWZLù□Ú□^AQ)tä;ýd□\y□NÂ□l®'þ□PK□□
□□ A úâ□æª Û " org/gradle/wrapper/IDownload.classE□Á
Â0□ÿÌéæ□□¼
^õbÁë®*□AÑ{ÝÊØ(í¨Óùl□| □JìTf $_òçÏóu□ X ï¡ë! ø□®□Ô<!L¦□□_9S¢d□]□~)Ól□I□Î□□`u□EQfZ□=ô,ïõÅÄ¢Þ□
□□ A p@áõc□ □ " org/gradle/wrapper/Install$1.class□Wù□□e□~Þì1ÓÍ□¦□□□¶□¥ÐÍ□d{ÐÖ¦

```
  □□   A äfC□§□  £□  8          ¤□n□  org/gradle/cli/CommandLineParser$OptionParserState.classP
  □□   A ¢Æ÷E«□  ¶□  3          ¤□k□  org/gradle/cli/CommandLineParser$OptionString.classPK□□□
  □□   A gAq²□□  x□  =          ¤□g□  org/gradle/cli/CommandLineParser$OptionStringComparator.c
  □□   A `M~U□□  ¸□  2          ¤□V□  org/gradle/cli/CommandLineParser$ParserState.classPK□□□□
  □□   A pÍXÝ□  k□  ?          ¤□ª¡  org/gradle/cli/CommandLineParser$UnknownOptionParserState.c
  □□   A dZ□Ô□□  l)  &          ¤□ä¤  org/gradle/cli/CommandLineParser.classPK□□□□
  □□   A □□å>É□   □  &          ¤□>·  org/gradle/cli/ParsedCommandLine.classPK□□□□
  □□   A yß□tÚ□  E□  ,          ¤□K¿  org/gradle/cli/ParsedCommandLineOption.classPK□□□□
  □□   A \vÆB|□  □□  :          ¤□oÂ  org/gradle/cli/ProjectPropertiesCommandLineConverter.clas
  □□   A
Ï8=|□  ü□  9          ¤□CÄ  org/gradle/cli/SystemPropertiesCommandLineConverter.classPK□□□□
  □□   A □ÿÃW□   □   □          ¤□□Æ  gradle-cli-classpath.propertiesPK□□    1 1 □□  gÆ
```

The Gradle build file uses the application plugin to specify the main class. The Maven build file creates the manifest information with the main class. You can easily run the program locally using the following commands:

If using Gradle, run this command:

```
gradlew run
```

If using Maven, run the following command:

```
java -jar target/airportapp-1.0-jar-with-dependencies.jar
```

Here's one sample output from the program execution:

```
Airport(code=ORD, name=Chicago O'hare Intl, delay=true)
Airport(code=IAH, name=George Bush Intercontinental/houston, delay=true)
Airport(code=LAX, name=Los Angeles Intl, delay=false)
Airport(code=SFO, name=San Francisco Intl, delay=true)
Airport(code=IAD, name=Washington Dulles Intl, delay=false)
```

Try including other airports, along with invalid airports or airports not supported by the web service, to see how the program behaves. Also, see if the program fails gracefully if there's no network connection.

You can find the final code, including the tests and the build files in the `unittest/final/airportapp` directory.

The next lesson concludes the discussion for this chapter.