Northern Michigan University (Marquette Co, MI)

Time: 50 minutes.

1. I have the following method in Kotlin:

```
fun ATimesTwo (Board:Array<String>):Boolean { ... }
```

This method accepts an array of string representing a rectangular grid of characters. (All strings in the array are the same length as each other; you may assume this to be true.) Are there two capital A's adjacent to each other, horizontally, vertically, or diagonally? Return true if yes, false if no.
Write the code for this method. Be careful not to go out of bounds.

```
fun ATimesTwo (Board:Array<String>):Boolean {

 for (i in Board.indices)
  for (j in Board[i].indices)
   if (Board[i][j]=='A')
    for (dr in -1..1)
     for (dc in -1..1) {
      if (dr==0 && dc==0) continue
       if (i+dr >= 0 && i+dr < Board.size &&
           j+dc >= 0 && j+dc < Board[i].length &&
           Board[i+dr][j+dc]=='A') return true
     }
 return false
}
```

2. I have a table called Sidekick in an SQLite database containing the fields MainHeroName (text) and SidekickName (text). Write Kotlin code that prints out every sidekick in the database that has teamed with Batman. You do not have to open or create the database. Just write the code that issues the query and moves the cursor through the table.

```
val cursor = query("MainHeroName=\"Batman\"",null)
cursor.moveToFirst()
while (!cursor.isAfterLast) {
  val ss = cursor.stuff
  println("${ss.sidekickname}))
  cursor.moveToNext()
}
cursor.close()
```

3. Write Kotlin code that will take an image stored at http://www.dccomics.org/batman.jpg and display it into a ImageView called batpic in the layout and mBat in the Kotlin code. You will not have to stretch or shrink the image, so don't worry about that.

```
mBat = findViewById (R.id.batpic)
val executor = Executors.newSingleThreadExecutor()
executor.execute {
 doInBackground("http://www.dccomics.org/batman.jpg")
```

Northern Michigan University (Marquette Co, MI)

CS345-01-23W Android Programming (Andrew A. Poe)   Name: _____
Practice Endterm (Exam 2) Page 2/2   Monday 24 April 2023 1:00 P.M. EDT

```kotlin
}
while (!webthread);
onPostExecute (mIcon11!!,mBat!!)


fun doInBackground(url: String)  {

 val infile = java.net.URL(url).openStream()
 mIcon11 = BitmapFactory.decodeStream(infile)
 webthread = true
}


fun onPostExecute (result:Bitmap,bmImage:ImageView) {

 bmImage.setImageBitmap(result)
}
```

4. Write the Kotlin code that will open the webfile
("http://philos.nmu.edu/bestbatmancomics.txt") and display it on a TextView named Stories.

```kotlin
val obj = URL("http://philos.nmu.edu/bestbatmancomics.txt")
val con = obj.openConnection() as HttpURLConnection
con.requestMethod = "GET"
var website =
BufferedReader(InputStreamReader(con.inputStream))
var info = ""
while (true) {
 val c = website.read()
 if (c == -1) break
 info += (char) c;
}
website.close()
Stories.text = info
```