

# MODEL BASED TEST AUTHORIZING

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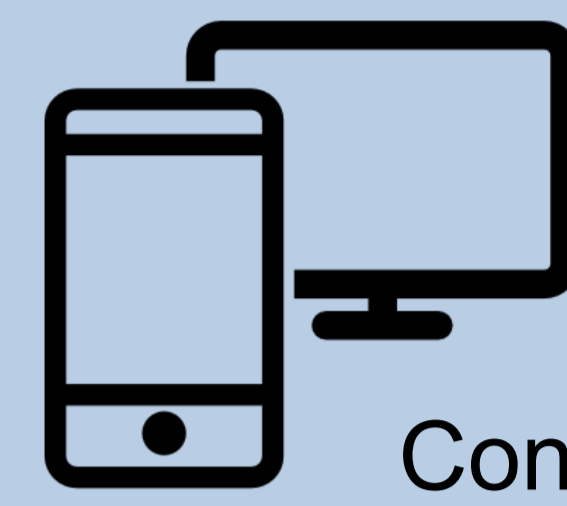
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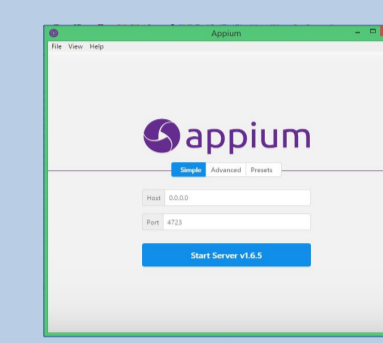
Program for Undergraduate Research

## IN THIS PROJECT,

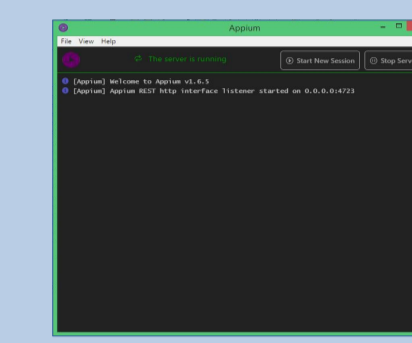
Our purpose is to develop a tool which synthesizes test code for the mobile applications as based on model. Tool asks user route which user wants to test and tool asks inputs which are on the this route. After the collecting information from user, tool synthesizes a test code and creates as a document. I used Appium as mobile automation test tool. So this synthesized code runs with Appium.



Connect mobile device and computer



Run Appium



RUN CODE

```
Bu sayfada yapabileceğiniz işlemler
(1)Üye Ol
(2)Giris Yap
(3)Kurye Çağır
(4)Gonderi Takibi
(5)Fiyat Sorgula
(6)Şube Sorgula
Seciminiz?
5
Nereden/ilDenizli
Nereden/ilçeMerkez
Nereye/ilIstanbul
Nereye/ilçeTuzla
```

- Tool asks route and inputs
- At the end, it synthesizes a test code

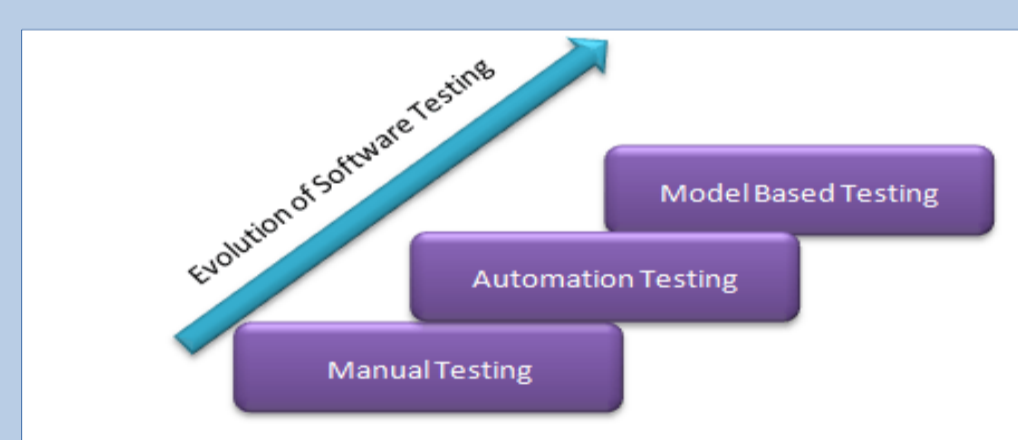
```
driver.findElement(By.id("com.yurticikargo.android:id/main_btn_calculate_price")).click();
driver.findElement(By.id("com.yurticikargo.android:id/pricing_source_and_destination_btn_from")).click();
driver.findElement(By.id("com.yurticikargo.android:id/city_list_edit_search")).sendKeys("Denizli");
driver.findElement(By.id("com.yurticikargo.android:id/city_county_list_item_btn_select")).click();
driver.findElement(By.id("com.yurticikargo.android:id/county_list_edit_search")).sendKeys("Merkez");
driver.findElement(By.id("com.yurticikargo.android:id/city_county_list_item_btn_select")).click();
driver.findElement(By.id("com.yurticikargo.android:id/pricing_source_and_destination_btn_to")).click();
driver.findElement(By.id("com.yurticikargo.android:id/city_list_edit_search")).sendKeys("Istanbul");
driver.findElement(By.id("com.yurticikargo.android:id/city_county_list_item_btn_select")).click();
driver.findElement(By.id("com.yurticikargo.android:id/county_list_edit_search")).sendKeys("Tuzla");
driver.findElement(By.id("com.yurticikargo.android:id/city_county_list_item_btn_select")).click();
driver.findElement(By.id("com.yurticikargo.android:id/pricing_source_and_destination_btn_confirm")).click();
```

## Mobile Testing

- Mobile testing is used to test functionality and usability of mobile applications. In manual testing, evaluation, analysis or input made by the way of human. This is sometimes more useful but many times, mostly for complex applications it is hard and takes time. (Hetchel E., 2016).
- Mobile test automation is basically the automatic way of the manual tests by using script or tool. Test automation minimizes human-dependent process and by this way decrease mistakes, increase quality of system test and saves time of software development process. Automated tests can run 7/24 as independent of human(Sarlioglu D. 2014) . Thus some errors are noticed earlier. Also an automated test can easily repeated after it is created and it can be extended to do things that are impossible for manual testing. Because of this, automated testing is very importing component of successful development projects.(Automated Testing,smartbear)

## Model Based Testing

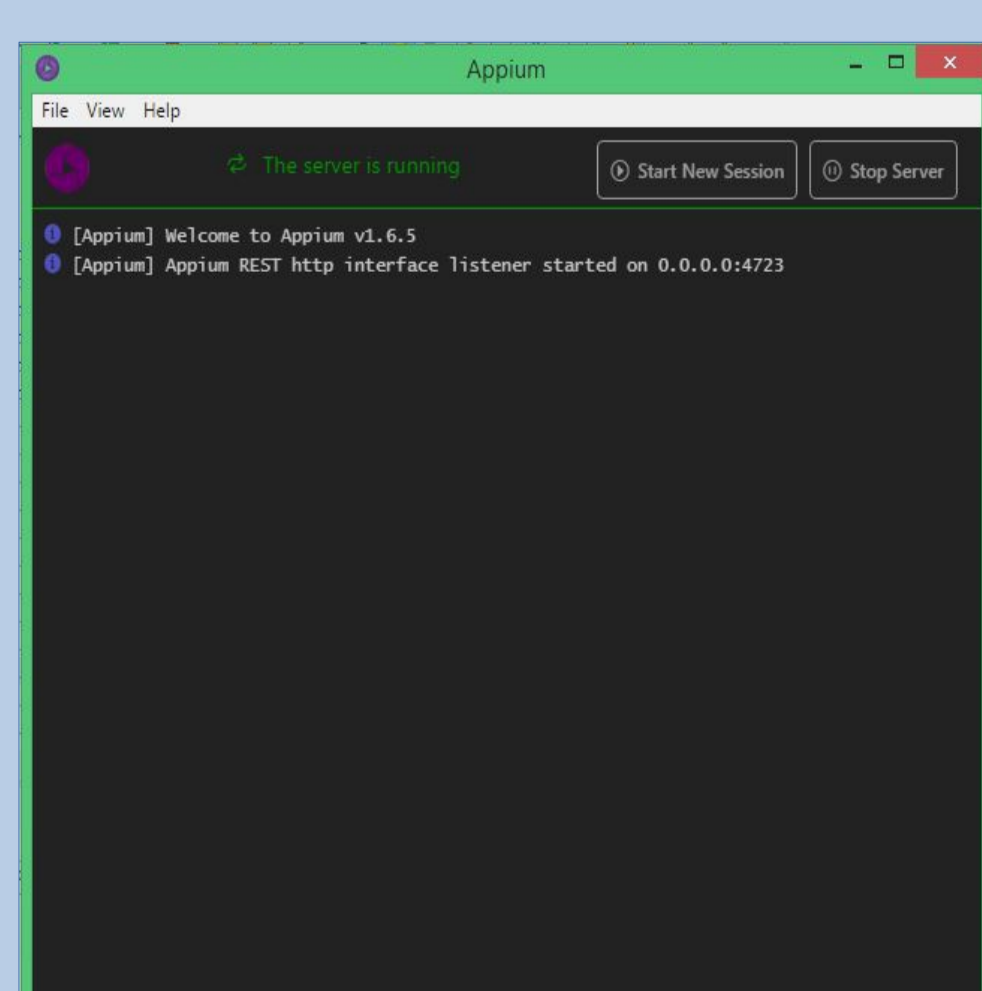
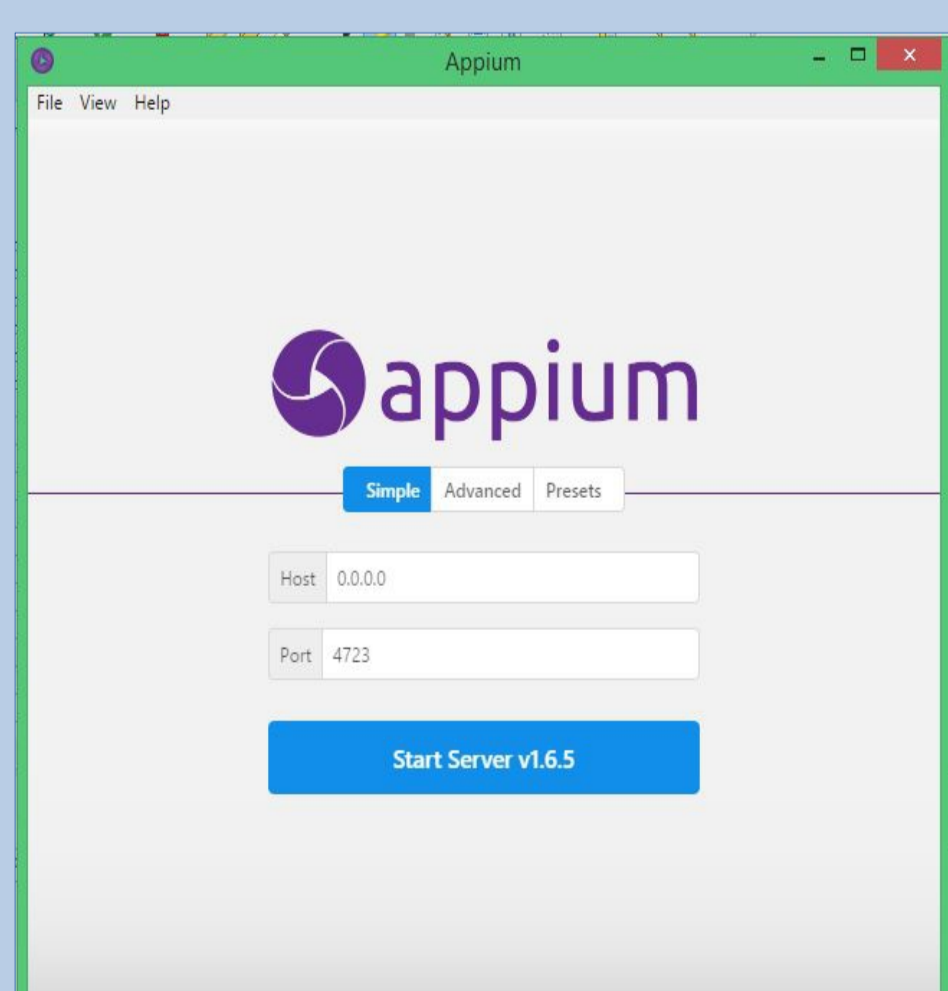
Model based testing, the definition of MBT in Wikipedia is the following: "Model-based testing is software testing in which test cases are derived in whole or in part from a model that describes some (usually functional) aspects of the system under test (SUT).Model base testing is more advantageous than the others. Project maintenance is lower. For each new feature, there is no need to write new tests. If there is a model, generation or regeneration test case is easier than hand-coded test case(Model Based Testing).



## MOBILE TEST AUTOMATION TOOL : APPIUM

Mobile test automation tools are able to playback pre-recorded and predefined actions, compare the results to the expected behavior and report the success or failure of these manual tests to a test engineer

Appium is an open-source tool for automating native, mobile web and hybrid applications on iOS and Android platforms



- ❖ Appium uses WebDriver interface to run the tests.
- ❖ It supports Java, C#, Ruby and many other programming languages that belong to WebDriver library
- ❖ Appium allows automated tests to be run on real devices, emulators and simulators.
- ❖ Appium is being able to test both platforms , iOS and Android, with the same tool. It prevents difficulties and costly process because of to use different tools for different platforms

## References



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