**SWE 434**

**Software Testing and Validation**

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***Assignment 1***

(*5% of the Total Course Mark*)

Deadline 13 Feb @ 11:00 AM

***Instructions:***

* *It is a pair assignment.*
* *A* ***hardcopy*** *of the assignment should be submitted on Thursday. 13th of Feb before 11:00 am in room S13.*
* *Use this page as cover page.*
* *Handwritten assignments will not be accepted.*
* *No late delivery of the assignment.*
* *Beware of Plagiarism: copying and handing in for credit someone else's work*
* *Any plagiarism case will result in an automatic ‘****0****’ for the Assignment.*

***Questions/Student Outcomes:*** *This assignment covers/targets the following student outcomes (SOs):*

* *SO(1). an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics*
* *SO(6). an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions*
* *SO(7).  an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PLO** | **Part 1** | | **Part 2** | | **Part 3** | | **Total** |
| **SO(1)** |  | 2 |  | |  | | / 2 |
| **SO(6)** |  | |  | 1 |  | | / 1 |
| **SO(7)** |  | |  | |  | 2 | / 2 |
| **Total** | / 2 | | / 1 | | / 2 | | / 5 |

|  |  |
| --- | --- |
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| **Section:** 49495 | |

1. **Input Conditions:**
   1. National ID
   2. National ID Type
   3. Date of birth
   4. Mobile No
2. **Valid and Invalid Equivalence Classes:**
3. *Intervals of values*

|  |  |  |
| --- | --- | --- |
|  | Valid | Invalid |
| **National** **ID** | - length=10 (1)  - present (7)  -valid (9) | - length < 10 (2)  - length > 10 (3)  - has characters (4)  - has special characters(5)  - has blanks (6)  - absent (8)  - Invalid (10) |
| **National ID Type** | - National ID Type [Saudi, Non- Saudi]  - present | - National ID Type [Saudi, Non- Saudi]  - absent |
| **Date of birth** | - 1341≤ year ≤ 1423 (11)  - 1≤ day ≤ 31 (14)  - 1 ≤month ≤ 12 (16)  - present (19) | - year < 1343 (12)  - year > 1423 (13)  - absent of day (15)  - absent of month (17)  - absent of year (18)  - absent (20) |
| **Mobile No** | - length =10 (21)  - start with "05" (27)  - third digit digits ≠ 2 (28)  - present (29) | - length <10 (22)  - length >10 (23)  - has characters (24)  - has special characters(25)  - has blank s(26)  - absent (30) |

1. *Constraints*

|  |  |  |
| --- | --- | --- |
|  | Valid | Invalid |
| **National ID** | - if National ID Type is Saudi then, National ID start with 1 (31)  - if National ID Type is Non-Saudi then, National ID start with 2 (33) | - if National ID Type is Saudi then, National ID Non-start with 1 (32)  - if National ID Type is Non-Saudi then, National ID Non-start with 2 (34) |
| **National ID Type** |
| **Date of birth** |
| **Mobile No** |

1. **Use-Case:**
   1. *Valid use case*

|  |  |
| --- | --- |
| Use-Case Data | Covers Equivalence Classes |
| T01: 1102955554, Saudi, 8/3/1419, 0508106364. | (1), (7), (9), (11), (14), (16), (19), (21), (27), (28), (29), (31). |
| T02: 2105632299, Non-Saudi, 7/5/1350, 0508106666. | (1), (7), (9), (11), (14), (16), (19), (21), (27), (28), (29), (33). |

* 1. *Invalid use case*

|  |  |
| --- | --- |
| Use-Case Data | Covers Equivalence Classes |
| T03: **123456789**, Saudi, 8/3/1419, 0508106364. | (2) |
| T04: **12345678999**, Saudi, 8/3/1419, 0508106364. | (3) |
| T05: **123456789A**, Saudi, 8/3/1419, 0508106364. | (4) |
| T06: **123456789\***, Saudi, 8/3/1419, 0508106364. | (5) |
| T07: **1234567 899**, Saudi, 8/3/1419, 0508106364. | (3), (6) |
| T08: , Saudi, 8/3/1419, 0508106364. | (2), (8) |
| T09: **1111111111**, Saudi, 8/3/1419, 0508106364. | (10) |
| T10: 1234567899, Saudi, **8/3/1330**, 0508106364 | (12) |
| T11: 1234567899, Saudi, **8/3/1440**, 0508106364 | (13) |
| T12: 1234567899, Saudi, **/3/1440**, 0508106364 | (15) |
| T13: 1234567899, Saudi, **8//1440**, 0508106364 | (17) |
| T14: 1234567899, Saudi, **8/3/**, 0508106364 | (18) |
| T15: 1234567899, Saudi,,0508106364 | (20) |
| T16: 1234567899, Saudi, 8/3/1440, **05081063**. | (22) |
| T17: 1234567899, Saudi, 8/3/1440, **050810636444**. | (23) |
| T18: 1234567899, Saudi, 8/3/1440, **050810636A.** | (24) |
| T19: 1234567899, Saudi, 8/3/1440, **050810636\*** | (25) |
| T20: 1234567899, Saudi, 8/3/1440, **05081 06368**. | (23), (26) |
| T21: 1234567899, Saudi, 8/3/1440, | (30) |
| T22: **7234567899**, Saudi, 8/3/1440, 0508106368. | (32) |
| T23: **7234567899**, Non-Saudi, 8/3/1440, 0508106368. | (34) |

1. Boundary Value Analysis: