VG100 — Introduction to Engineering

Project 1 Report (Team 12)

Rubric

- Game Design (10 pts)
- Code Quality (50 pts)
- Readme (15 pts)
- Personal work (20 pts)

1 Game Design

Not included in this report.

2 Code Quality

Your total score of this part is 41/50.

All related information is listed below:

1 point(s) deduction, should define Type instead of using int, in file Ball.elm, lines 19-25.

```
19          1 -> oneBall
20          2 -> twoBall
21          3 -> threeBall
22          4 -> fourBall
23          5 -> fiveBall
24          6 -> sixBall
25          7 -> sevenBall
```

1 point(s) deduction, duplicate code, in file Ball.elm, lines 114-128.

```
114         ball1 = Tuple.second ( moveOneBall model0 (Tuple.first (oneBall model0 "b")) )
115         ball2 = Tuple.second ( moveOneBall upDatedModel1 (Tuple.first(twoBall upDatedModel1 "b")) )
116         ball3 = Tuple.second ( moveOneBall upDatedModel2 (Tuple.first (threeBall upDatedModel2 "b")) )
117         ball4 = Tuple.second ( moveOneBall upDatedModel3 (Tuple.first(fourBall upDatedModel3 "b")) )
118         ball5 = Tuple.second ( moveOneBall upDatedModel4 (Tuple.first (fiveBall upDatedModel4 "b")) )
119         ball6 = Tuple.second ( moveOneBall upDatedModel5 (Tuple.first(sixBall upDatedModel5 "b")) )
120         ball7 = Tuple.second ( moveOneBall upDatedModel6 (Tuple.first (sevenBall upDatedModel6 "b")) )
121
122         upDatedModel1 = chooseModel model0 ball1 1
123         upDatedModel2 = chooseModel upDatedModel1 ball2 2
124         upDatedModel3 = chooseModel upDatedModel2 ball3 3
125         upDatedModel4 = chooseModel upDatedModel3 ball4 4
126         upDatedModel5 = chooseModel upDatedModel4 ball5 5
127         upDatedModel6 = chooseModel upDatedModel5 ball6 6
128         upDatedModel7 = chooseModel upDatedModel6 ball7 7
```

1 point(s) deduction, duplicate code, in file Ball.elm, lines 137-151.

```
137         ball1 = Tuple.first (oneBall model "b")
138         ball2 = Tuple.first (twoBall model "b")
139         ball3 = Tuple.first (threeBall model "b")
140         ball4 = Tuple.first (fourBall model "b")
```

```
141         ball5 = Tuple.first (fiveBall model "b")
142         ball6 = Tuple.first (sixBall model "b")
143         ball7 = Tuple.first (sevenBall model "b")
144 
145         newBall1 = {ball1 | dx = 0, dy = -1 * model.diffClass.ballSpeed * sqrt(2)}
146         newBall2 = {ball2 | dx = model.diffClass.ballSpeed, dy = -1 * model.diffClass.ballSpeed}
147         newBall3 = {ball3 | dx = model.diffClass.ballSpeed, dy = -1 * model.diffClass.ballSpeed}
148         newBall4 = {ball4 | dx = model.diffClass.ballSpeed, dy = -1 * model.diffClass.ballSpeed}
149         newBall5 = {ball5 | dx = model.diffClass.ballSpeed, dy = -1 * model.diffClass.ballSpeed}
150         newBall6 = {ball6 | dx = model.diffClass.ballSpeed, dy = -1 * model.diffClass.ballSpeed}
151         newBall7 = {ball7 | dx = model.diffClass.ballSpeed, dy = -1 * model.diffClass.ballSpeed}
```

1 point(s) deduction, should define Type instead of using int, in file Block.elm, lines 38-77.

```
38              0 ->
39                  case List.length block.textureList of
40                      1 ->
41                          (Longer, ["./assets/long3.png"])
42                      2 ->
43                          (Longer, ["./assets/long3.png", "./assets/long2.png"])
44                      3 ->
45                          (Longer, ["./assets/long3.png", "./assets/long2.png", "./assets/long1.png"])
46                      _ ->
47                          (Longer, [""])
```

...

```
68              3 ->
69                  case List.length block.textureList of
70                      1 ->
71                          (Skills, ["./assets/skill3.png"])
72                      2 ->
73                          (Skills, ["./assets/skill3.png", "./assets/skill2.png"])
74                      3 ->
75                          (Skills, ["./assets/skill3.png", "./assets/skill2.png", "./assets/skill1.png"])
76                      _ ->
77                          (Skills, [""])
```

1 point(s) deduction, duplicate code and hard-coded contents, in file Block.elm, lines 116-204.

```
116             1 ->
117                 initRow durability2Color 8 2 2.5 0 14 True
118                 ++ initRow durability2Color 8 5 2.5 0 14 True
119                 ++ initRow durability1Color 4 8 2.5 0 14 True
120                 ++ initRow durability1Color 4 11 2.5 0 14 True
121             2 ->
122                 initRow durability3Color 12 2 17.5 0 8 True
123                 ++ initRow durability2Color 8 5 2.5 0 14 True
124                 ++ initRow durability1Color 4 8 2.5 0 14 True
125                 ++ initRow durability3Color 12 11 2.5 0 5 True
```

...

```
195                 ++ initRow durability2Color 8 11 60 0 1 True
196                 ++ initRow durability2Color 8 13 10 0 2 True
197                 ++ initRow durability2Color 8 13 55 0 2 True
```

```
198                 ++ initRow durability2Color 8 15 10 0 3 True
199                 ++ initRow durability2Color 8 15 50 0 3 True
200                 ++ initRow durability2Color 8 17 10 0 4 True
201                 ++ initRow durability2Color 8 17 45 0 4 True
202                 ++ initRow durability2Color 8 19 10 0 11 True
203                 ++ initRow durability3Color 12 21 30 0 3 True
204                 ++ initRow durability3Color 12 23 35 0 1 True
```

1 point(s) deduction, duplicate code, in file Model.elm, lines 192-220.

```
192 --Get the second ball of model.balls
193 twoBall : Model -> String -> (Ball, Model)
194 twoBall model kind =
195     oneBall (Tuple.second (oneBall model kind)) kind
196
197 --Get the third ball of model.balls
198 threeBall : Model -> String -> (Ball, Model)
199 threeBall model kind =
200     oneBall (Tuple.second (twoBall model kind)) kind
201
```

...

```
211
212 --Get the sixth ball of model.balls
213 sixBall : Model -> String -> (Ball, Model)
214 sixBall model kind =
215     oneBall (Tuple.second (fiveBall model kind)) kind
216
217 --Get the seventh ball of model.balls
218 sevenBall : Model -> String -> (Ball, Model)
219 sevenBall model kind =
220     oneBall (Tuple.second (sixBall model kind)) kind
```

1 point(s) deduction, duplicate code, in file Skill.elm, lines 45-59.

```
45         ball1 = Tuple.first (oneBall model "b")
46         ball2 = Tuple.first (twoBall model "b")
47         ball3 = Tuple.first (threeBall model "b")
48         ball4 = Tuple.first (fourBall model "b")
49         ball5 = Tuple.first (fiveBall model "b")
50         ball6 = Tuple.first (sixBall model "b")
51         ball7 = Tuple.first (sevenBall model "b")
52
53         v = sqrt(2) * model.diffClass.ballSpeed
54
55         newBall3 = {ball3 | exist = True, xPos = 27.5, yPos = 50, dx = -1 * sqrt(3) * v / 2, dy = -1 * v / 2}
56         newBall4 = {ball4 | exist = True, xPos = 32.5, yPos = 50, dx = -1 * v / sqrt(2), dy = -1 * v / sqrt(2)}
57         newBall5 = {ball5 | exist = True, xPos = 37.5, yPos = 50, dx = 0, dy = -1 * v}
58         newBall6 = {ball6 | exist = True, xPos = 42.5, yPos = 50, dx = v / sqrt(2), dy = -1 * v / sqrt(2)}
59         newBall7 = {ball7 | exist = True, xPos = 47.5, yPos = 50, dx = sqrt(3) * v / 2, dy = -1 * v / 2}
```

1 point(s) deduction, duplicate code, in file View.elm, lines 65-135.

```
65         button [ onClick (ChangeDisplayState DisplayChoice)
66               , style "box-shadow" "inset 27px 22px 26px 17px #ad1454"
```

```
67                , style "background" "linear-gradient(to bottom, #a34b3e 5%, #de7062 100%)"
68                , style "background-color" "#a34b3e"
69                , style "border-radius" "42px"
70                , style "display" "inline-block"
71                , style "cursor" "pointer"
72                , style "color" "#ffffff"
73                , style "font-family" "Georgia"
74                , style "font-size" "2vw"
```

...

```
126               , style "font-weight" "bold"
127               , style "font-style" "italic"
128               , style "text-decoration" "none"
129               , style "text-shadow" "0px -1px 0px #7a2a1d"
130               , style "position" "absolute"
131               , style "width" "15%"
132               , style "height" "10%"
133               , style "top" "70%"
134               , style "left" "42.5%"
135               ]
```

1 point(s) deduction, duplicate code, in file View.elm, lines 140-242.

```
140   displayTutorial : Model -> Html Msg
141   displayTutorial model =
142       div [ style "width" "100%"
143           , style "height" "100%"
144           , style "left" "0%"
145           , style "top" "0%"
146           , style "background" "url(./display/Tutorial1.jpg) 0% 0% / 100% 100% no-repeat"
147           , style "position" "absolute"
148           , style "z-index" "-1"
149           ]
```

...

```
233               , style "text-decoration" "none"
234               , style "text-shadow" "0px -1px 0px #ffee66"
235               , style "position" "absolute"
236               , style "width" "15%"
237               , style "height" "10%"
238               , style "left" "50%"
239               , style "top" "70%"
240               ]
241               [ text "Back" ]
242               ]
```

1 point(s) deduction, duplicate code, in file View.elm, lines 265-348.

```
265           button [ onClick (ChangeDisplayState DisplayGame)
266               , style "box-shadow" "inset 27px 22px 26px 17px #8a2a21"
267               , style "background" "linear-gradient(to bottom, #c62d1f 5%, #f24437 100%)"
268               , style "background-color" "#c62d1f"
269               , style "border-radius" "42px"
270               , style "display" "inline-block"
```

```
271                 , style "cursor" "pointer"
272                 , style "color" "#ffffff"
273                 , style "font-family" "Georgia"
274                 , style "font-size" "2vw"
```

...

```
339                 , style "font-style" "italic"
340                 , style "text-decoration" "none"
341                 , style "text-shadow" "0px -1px 0px #810e05"
342                 , style "position" "absolute"
343                 , style "width" "15%"
344                 , style "height" "10%"
345                 , style "left" "42.5%"
346                 , style "top" "77.5%"
347                 ]
348                 [ text "Back" ]
```

1 point(s) deduction, hard-coded contents, in file View.elm, lines 496-522.

```
496         FiveBall ->
497             text "The enemy has become weak and exhausted.\nSolider Take advantage of this opportunity, use your wisdom,
                ↪ courage, and our army's most fierce cannon to completely destroy them!\n1.Press A to use the Skill. \n2.Effect: Fire
                ↪ five additional balls.\n3.Warning: Because this is an extreme waste of our military resources, this skill is only
                ↪ allowed to be used when there is just one ball on the battlefield."
498         LongLife ->
499             text "Ottoman soldiers are still constantly adding to the front.They vowed to seize this City of World's Desire.\n1.Press
                ↪ D to use the Skill.\n2.Effect: Lives +1."
500         LongPaddle ->
501             text "A large number of craftsmen were attracted by money and glory, serving in the Ottoman army.\nRelying on their
                ↪ wisdom and creativity, our cannons will not only be more powerful, but also be more safer.\n1.Press S to use the
                ↪ Skill. \n2.Effect: Width of Paddle +2.\n3.Warning: Subject to the technical level of our army, the maximum length
                ↪ of paddle is 17. (the initial length is 11)"
502
503 --GUI: Start-> Level
504 displayLevelChoose : Model -> Html Msg
505 displayLevelChoose model =
```

...

```
513                 Difficult ->
514                   ("Veteran, if you're a skillful and calm enough, go and help Mehmed II to conquer Constantinople at any cost!",
                      ↪ "#8B0000")
515         prompt_2 =
516             case model.difficulty of
517                 Easy ->
518                     "Easy:\nIn this mode, the speed of the cannon ball is relatively slow, and there's fewer possibilities that you'll be
                        ↪ attacked by Greek Fire.\nThe scoring factor is 1 in this mode."
519                 Medium ->
520                     "Medium:\nIn this mode, the speed of the cannon ball is neither fast nor slow, and there's more possibilities that
                        ↪ you'll be attacked by Greek Fire.\nThe scoring factor is 2 in this mode."
521                 Difficult ->
522                     "Difficult:\nIn this mode, your tactic and reaction will be tested.\nThe cannon ball is nearly out of control, and
                        ↪ you'll be bombarded with Greek Fire.\nBe careful with the splitted balls, sometimes they will help you but
                        ↪ sometimes distract you from making correct choice.\nThe scoring factor is 3 in this mode."
```

2 point(s) bonus, some comments found.

3 Readme

Not included in this report.

4 Personal work

Not included in this report.