

# VG100 — Introduction to Engineering

## Project 1 Report (Team 15)

### 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 37/50.

All related information is listed below:

1 point(s) **deduction**, too many ++ in string, in file [Animation.elm](#), lines 213-215.

```
213     transstring = "translate(" ++ (String.fromFloat (Tuple.first ltp)) ++ ", " ++ (String.fromFloat (Tuple.second ltp)) ++ ") "
214     ++ "scale(" ++ (String.fromFloat (Tuple.first nowtrans.scale)) ++ ", " ++ (String.fromFloat (Tuple.second
    ↪ nowtrans.scale)) ++ ") rotate("
215     ++ (String.fromFloat nowtrans.rotate) ++ ", " ++ (String.fromFloat (Tuple.first newrotatecenter)) ++
    ↪ ", " ++ (String.fromFloat (Tuple.second newrotatecenter)) ++ ")"
```

1 point(s) **deduction**, too many ++ in string, in file [Collide.elm](#), lines 41-45.

```
41     "p= " ++ String.fromInt (floor (Tuple.first c.point)) ++ ", " ++ String.fromInt (floor (Tuple.second c.point)) ++ " d=" ++
    ↪ String.fromInt (floor c.distance) ++ " t="
42     ++ String.fromInt (floor (c.theta*10000)) ++ " ID=" ++ temp ++ " p1=" ++ String.fromInt (floor (Tuple.first c.p1))
    ↪ ++ ", " ++ String.fromInt (floor (Tuple.second c.p1)) ++
43     " p2=" ++ String.fromInt (floor (Tuple.first c.p2)) ++ ", " ++ String.fromInt (floor (Tuple.second c.p2)) ++
44     " ori=" ++ String.fromInt (floor (Tuple.first c.ori)) ++ ", " ++ String.fromInt (floor (Tuple.second c.ori)) ++
45     " next=" ++ String.fromInt (floor (Tuple.first c.next)) ++ ", " ++ String.fromInt (floor (Tuple.second c.next)) )
```

1 point(s) **deduction**, should define Type instead of using int, in file [CreateShape.elm](#), lines 30-39.

```
30     1 -> { red=238, green=130, blue=238 }
31     2 -> { red=34, green=139, blue=34 }
32     3 -> { red=178, green=34, blue=34 }
33     4 -> { red=65, green=105, blue=255 }
34     5 -> { red=218, green=165, blue=32 }
35     6 -> { red=255, green=0, blue=0 }
36     7 -> { red=255, green=200, blue=0 }
37     8 -> { red=0, green=139, blue=139 }
38     0 -> { red=75, green=100, blue=13 }
39     10 -> { red=255, green=255, blue=255 }
```

1 point(s) **deduction**, should define Type instead of using int, in file [CreateShape.elm](#), lines 128-133.

```

128     6 -> 1
129     8 -> 2
130     4 -> 3
131     5 -> 4
132     0 -> 5
133     _ -> 0

```

1 point(s) **deduction**, duplicate code, in file [PreRender.elm](#), lines 9-31.

```

9  renderSingleButton: Model ->ShapeInfo
10 renderSingleButton model =
11     let
12         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
13         b1next=Animation.transforminit (Animation.tupleScale model.size (0.125,0.644)) (0,0)
14         b1ani =Animation.AnimateInfo b1ori b1next model.currenttime (model.currenttime+1000) 0 False
15         size= Animation.tupleScale model.size (0.18,0.153)
16         b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =50, shapetype = -2,duration = 10000, special=0,size
17             ↪ = Just size,angle = 0,id=PaddleID -1,opacity=0}
18         lb= Animation.ShapeInfo b1ani b1shape [Svg.Events.onClick (SelectMode 1) ] Global.ChooseMode
19             ↪ (Animation.SelectSingleDoubel 1) 2
20     in
21         lb
22
23 renderDoubleButton: Model ->ShapeInfo
24 renderDoubleButton model =
25     let
26         b2ori=Animation.transforminit (Animation.tupleScale model.size (1.875,0.644)) (0,0)
27         b2next=Animation.transforminit (Animation.tupleScale model.size (0.875,0.644)) (0,0)
28         b2ani = Animation.AnimateInfo b2ori b2next model.currenttime (model.currenttime+1000) 0 False
29         size2= Animation.tupleScale model.size (0.18,0.153)
30         b2shape={color = {red=0,green=0,blue=0},center= (500,500), radius =50, shapetype = -2,duration = 10000, special=0,size
31             ↪ = Just size2,angle = 0,id=PaddleID -1,opacity=0}
32         lb2= Animation.ShapeInfo b2ani b2shape [Svg.Events.onClick (SelectMode 2) ] Global.ChooseMode
33             ↪ (Animation.SelectSingleDoubel 2) 2
34     in
35         lb2

```

1 point(s) **deduction**, duplicate code, in file [PreRender.elm](#), lines 88-109.

```

88 renderShopButton : Model -> ShapeInfo
89 renderShopButton model =
90     let
91         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
92         b1next=Animation.transforminit (Animation.tupleScale model.size (0.98,1)) (0,0)
93         b1ani =Animation.AnimateInfo b1ori b1next model.currenttime (model.currenttime+1000) 0 False
94         size= Animation.tupleScale model.size (0.14,0.48)
95         b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =(Tuple.second size)/2, shapetype = 0,duration =
96             ↪ 10000, special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
97         lb= Animation.ShapeInfo b1ani b1shape [Svg.Events.onClick (SelectLevel Messages.LeveltoShop)] Global.ChooseLevel
98             ↪ (Animation.LeveltoShop) 2
99     in
100         lb
101
102 renderShopBackButton : Model -> ShapeInfo
103 renderShopBackButton model =
104     let
105         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)

```

```

103     b1next=Animation.transforminit (Animation.tupleScale model.size (0.95,0.95)) (0,0)
104     b1ani =Animation.AnimateInfo b1ori b1next model.currenttime (model.currenttime+1000) 0 False
105     size= Animation.tupleScale model.size (0.14,0.17)
106     b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =50, shapetype = -2,duration = 10000,
107     ↪ special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
108     lb= Animation.ShapeInfo b1ani b1shape [Svg.Events.onClick (Messages.Shop Messages.StoreBack) ] Global.Shop
109     ↪ (Animation.StoreBack) 2
110
111 in
112     lb

```

1 point(s) deduction, duplicate code, in file [PreRender.elm](#), lines 255-274.

```

255 renderLackBg : Model->ImageInfo
256 renderLackBg model =
257     let
258         ori= Animation.transforminit (Animation.tupleScale model.size (0.5,0.5)) (Animation.tupleScale model.size (0.03,0.03))
259         modif={ori|opacity=0}
260         next=Animation.transforminit (Animation.tupleScale model.size (0.5,0.5)) (Animation.tupleScale model.size (0.3,0.3))
261         ani=Animation.AnimateInfo modif next model.currenttime (model.currenttime+500) 0 False
262         sd= Animation.ImageInfo ani "assets/moneylack.png" [] Global.ResumeLackMoney (Animation.LackMoneyBanner) 0
263     in
264         sd
265 renderLackBgdelete : Model->ImageInfo
266 renderLackBgdelete model =
267     let
268         ori= Animation.transforminit (Animation.tupleScale model.size (0.5,0.5)) (Animation.tupleScale model.size (0.3,0.3))
269         modif={ori|opacity=0}
270         next=Animation.transforminit (Animation.tupleScale model.size (0.5,0.5)) (Animation.tupleScale model.size
271         ↪ (0.03,0.03))
272         ani=Animation.AnimateInfo modif next model.currenttime (model.currenttime+200) (model.currenttime+200) False
273         sd= Animation.ImageInfo ani "assets/moneylack.png" [] Global.ResumeLackMoney (Animation.LackMoneyBanner) 0
274     in
275         sd

```

1 point(s) deduction, duplicate code, in file [PreRender.elm](#), lines 397-429.

```

397 renderWinRetry : Model -> ShapeInfo
398 renderWinRetry model =
399     let
400         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
401         b1next=Animation.transforminit (Animation.tupleScale model.size (0.34,0.83)) (0,0)
402         b1ani =Animation.AnimateInfo b1ori b1next (model.currenttime+2000) (model.currenttime+3000) 0 False
403         size= Animation.tupleScale model.size (0.041,0.112)
404         b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =(Tuple.first size), shapetype = 0,duration =
405         ↪ 10000, special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
406         lb= Animation.ShapeInfo b1ani b1shape [Svg.Events.onClick (WinResult Messages.WinRetry) ] Global.WinResult
407         ↪ Animation.WinMenu 2
408     in
409
410 ...
420 renderWinNext model =
421     let
422         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
423         b1next=Animation.transforminit (Animation.tupleScale model.size (0.665,0.83)) (0,0)
424         b1ani =Animation.AnimateInfo b1ori b1next (model.currenttime+2000) (model.currenttime+3000) 0 False

```

```

425     size= Animation.tupleScale model.size (0.041,0.112)
426     b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =(Tuple.first size), shapetype = 0,duration =
    ↳ 10000, special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
427     lb= Animation.ShapeInfo blani b1shape [Svg.Events.onClick (WinResult Messages.Next) ] Global.WinResult
    ↳ Animation.WinMenu 2
428 in
429     lb

```

1 point(s) deduction, duplicate code, in file [PreRender.elm](#), lines 466-487.

```

466 renderLoseOK : Model -> ShapeInfo
467 renderLoseOK model =
468     let
469         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
470         b1next=Animation.transforminit (Animation.tupleScale model.size (0.405,0.575)) (0,0)
471         blani =Animation.AnimateInfo b1ori b1next (model.currenttime+1000) (model.currenttime+1000) 0 False
472         size= Animation.tupleScale model.size (0.031,0.112)
473         b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =(Tuple.first size), shapetype = 0,duration =
    ↳ 10000, special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
474         lb= Animation.ShapeInfo blani b1shape [Svg.Events.onClick (Messages.LoseWindow Messages.LoseConfirm) ]
    ↳ Global.Lose Animation.LoseConfirm 1
475     in
476         lb
477 renderLoseResume : Model -> ShapeInfo
478 renderLoseResume model =
479     let
480         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
481         b1next=Animation.transforminit (Animation.tupleScale model.size (0.585,0.575)) (0,0)
482         blani =Animation.AnimateInfo b1ori b1next (model.currenttime+1000) (model.currenttime+1000) 0 False
483         size= Animation.tupleScale model.size (0.031,0.112)
484         b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =(Tuple.first size), shapetype = 0,duration =
    ↳ 10000, special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
485         lb= Animation.ShapeInfo blani b1shape [Svg.Events.onClick (Messages.LoseWindow Messages.LoseResume) ]
    ↳ Global.Lose Animation.LoseResume 1
486     in
487         lb

```

1 point(s) deduction, duplicate code, in file [PreRender.elm](#), lines 516-548.

```

516 renderLoseRetry : Model -> ShapeInfo
517 renderLoseRetry model =
518     let
519         b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
520         b1next=Animation.transforminit (Animation.tupleScale model.size (0.34,0.83)) (0,0)
521         blani =Animation.AnimateInfo b1ori b1next (model.currenttime) (model.currenttime+1000) 0 False
522         size= Animation.tupleScale model.size (0.041,0.112)
523         b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =(Tuple.first size), shapetype = 0,duration =
    ↳ 10000, special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
524         lb= Animation.ShapeInfo blani b1shape [Svg.Events.onClick (LoseResult Messages.LoseRetry) ] Global.LoseResult
    ↳ Animation.LoseRetry 2
525     in
    ...
539 renderLoseNext model =
540     let

```

```

541     b1ori=Animation.transforminit (Animation.tupleScale model.size (1.125,0.644)) (0,0)
542     b1next=Animation.transforminit (Animation.tupleScale model.size (0.665,0.83)) (0,0)
543     b1ani =Animation.AnimateInfo b1ori b1next (model.currenttime) (model.currenttime+1000) 0 False
544     size= Animation.tupleScale model.size (0.041,0.112)
545     b1shape={color = {red=0,green=0,blue=0},center= (500,500), radius =(Tuple.first size), shapetype = 0,duration =
    ↪ 10000, special=0,size = Just size,angle = 0,id=PaddleID -1,opacity=0}
546     lb= Animation.ShapeInfo b1ani b1shape [Svg.Events.onClick (LoseResult Messages.ResulttoShop) ] Global.LoseResult
    ↪ Animation.LosetoShop 2
547 in
548     lb

```

1 point(s) deduction, duplicate code, in file [PreRender.elm](#), lines 668-691.

```

668 renderbest : Model ->Int -> List TextInfo
669 renderbest model tp =
670     let
671         ori=List.map (\x -> Animation.transforminit (Animation.tupleScale model.size x) (0,0))
    ↪ [(0.07,0.29),(0.18,0.585),(0.389,0.18),(0.435,0.76),(0.795,0.20),(0.755,0.675)]
672         modif=if tp==1 then List.map (\x->{x|opacity=0}) ori else ori
673         next=if tp==2 then List.map (\x->{x|opacity=0}) ori else ori
674         ani= if tp==1 then List.map3 (\x y z->Animation.AnimateInfo x y (model.currenttime+1000 + (toFloat z)*100)
    ↪ (model.currenttime+1000+(toFloat z)*100+200) 0 False) modif next (List.range 0 5)
675             else List.map3 (\x y z->Animation.AnimateInfo x y (model.currenttime) (model.currenttime)
    ↪ (model.currenttime+300) False) modif next (List.range 0 2)
676         slist= List.map (\x->if x /= 1000000 then Global.timetostring x else "--:--") model.best
677         sd=List.map2(\x y-> Animation.TextInfo x y 40 (1500,750) (Shapes.Color 255 255 255) Global.WinResult
    ↪ Animation.ResultTexts 2) ani slist
678 in
679     sd
680 renderMsg : Model ->Int-> List TextInfo
681 renderMsg model tp =
682     let
683         ori=List.map (\x-> Animation.transforminit (Animation.tupleScale model.size (0.5,x)) (0,0)) [0.2,0.3,0.4]
684         modif=if tp==1 then List.map (\x->{x|opacity=0}) ori else List.map (\x->{x|opacity=0.5}) ori
685         next=if tp==2 then List.map (\x->{x|opacity=0}) ori else List.map (\x->{x|opacity=0.5}) ori
686         ani= if tp==1 then List.map3 (\x y z->Animation.AnimateInfo x y (model.currenttime+1000 + (toFloat z)*400)
    ↪ (model.currenttime+1000+(toFloat z)*400+400) 0 False) modif next (List.range 0 2)
687             else List.map3 (\x y z->Animation.AnimateInfo x y (model.currenttime) (model.currenttime)
    ↪ (model.currenttime+300) False) modif next (List.range 0 2)
688         slist= ["Press Enter to Start","Press ESC to Quit"] ++ [(if model.gamemode == Model.Single then "Use ↑ ↓ ←
    ↪ → to move" else "Player1 : WASD   Player2 : ↑ ↓ ← →")]
689         sd=List.map2(\x y-> Animation.TextInfo x y 60 (1500,750) (Shapes.Color 200 200 200) Global.WinResult
    ↪ Animation.ResultTexts 2) ani slist
690 in
691     sd

```

1 point(s) deduction, duplicate code, in file [StoreOperation.elm](#), lines 26-93.

```

26 BuyPower ->
27     if model.shopstate.power==5 then
28         model
29     else if model.money < Global.coinsConsumption (model.shopstate.power+1) then
30         PreRender.renderLackMoney {model|state=Global.ShopLackMoney}
31     else
32         let

```

```

33      model1= {model|money= model.money - Global.coinsConsumption (model.shopstate.power+1),shopstate=
      ↳ {shopstate| power= shopstate.power+1 }}
34      ptext= List.drop 0 (PreRender.renderShopLabel model1 2 )
35      |> List.take 1

...

84      ptext= List.drop 3 (PreRender.renderShopLabel model1 2 )
85      |> List.take 1
86      newtext = Animation.replacetext model.viewtext (PreRender.renderMoney model1 2)
87      nexttext=Animation.replacetexts newtext ptext
88      in
89      {model1|
90      viewimage= model.viewimage ++[PreRender.rendersingleShopBar model 4 (shopstate.duration+1)],
91      viewtext= nexttext}
92      else
93      model

```

1 point(s) **deduction**, part of code format is bad.

### **3 Readme**

Not included in this report.

### **4 Personal work**

Not included in this report.