* Queries 1 - 3 must retrieve at least two attributes and must be based on a single table. Each query must include at least two conditions. Provide an explanation of what the query is retrieving. Use complete, coherent sentences with no database terminology.

Solution:

1. Retrieve Player ID and Email for the player whose name is John Smith.

PLYR <- **σ** first\_name= John ^ last\_name= Smith (PLAYER),

RESULT <- π player\_id, email (PLYR)

1. Retrieve Player name (First and Last Name) for the player whose age is 20 and email is jsmth18@gmu.edu.

PLYR <- **σ** age= 20 ^ email= jsmth18@gmu.edu (PLAYER),

RESULT <- π first\_name, last\_name (PLYR)

1. Retrieve Player age and Email for the player whose name is John Smith.

PLYR <- **σ** first\_name= John ^ last\_name= Smith (PLAYER),

RESULT <- π age, email (PLYR)

* Queries 4 - 6 must retrieve at least three attributes in total and must be based on two tables. Each query must include at least two conditions. Provide an explanation of what the query is retrieving. Use complete, coherent sentences with no database terminology.

1. Retrieve Name (First and Last) of those players whose age is under 19 who’s category\_id is 5.

PLYCT1 <- **σ** category\_id = 5 (PLAYERCAT),

PLYR1 <- **σ** age<19 (PLAYER),

PLYR <- PLYR1 ⟕(PLYR1.player\_id = PLYCT1.player\_id) PLYCT1

RESULT <- π first\_name, last\_name (PLYR)

1. Retrieve category\_id and drill id of those drills whose duration is under 20 minutes who’s type is dribbling.

DRL <- **σ** drill\_duration <20 ^ drill\_type = dribbling (DRILL),

DRL1 <- CAT\_DRILL ⟕(CAT\_DRILL.drill\_id = DRL.drill\_id) DRILL

RESULT <- π category\_id, drill\_id (DRL1)

1. Retrieve player id and age of those players whose last name is smith and enrolled in category 4

PLYCT <- **σ** category\_id = 4 (PALAYERCAT),

PLYR <- **σ** last\_name = smith (PALAYER),

PLYR2 <- PLYR ⟕(PLYR.player\_id=PLYCT.category\_id) PLYCT

RESULT <- π player\_id, age (PLYR2)

* Queries 7 - 8 must retrieve at least three attributes in total and must be based on three tables. Each query must include at least two conditions. Provide an explanation of what the query is retrieving. Use complete, coherent sentences with no database terminology.

1. Retrieve Player Name (First and Last) and ID of those players whose type is goalkeeper and level is beginner.

CAT <- **σ** player\_type=goalkeeper ^ player\_level=beginner  (CATEGORY),

PLYR1 <- PLAYERCAT ⟕(PLAYERCAT.category\_id = CAT.category\_id) CAT

PLYR <- PLAYER ⟕(PLAYER.player\_id = PLYR1.player\_id) PLYR1

RESULT <- π first\_name, last\_name, player\_id (PLYR)

1. Retrieve Player Name (First and Last) and ID of those players whose type is striker and level is intermediate.

CAT <- **σ** player\_type=striker ^ player\_level=intermediate  (CATEGORY),

PLYR1 <- PLAYERCAT ⟕(PLAYERCAT.category\_id = CAT.category\_id) CAT

PLYR <- PLAYER ⟕(PLAYER.player\_id = PLYR1.player\_id) PLYR1

RESULT <- π first\_name, last\_name, player\_id (PLYR)

* Queries 9 - 10 must be based on at least two tables, include at least two conditions, and one grouping function operator. Provide an explanation of what the query is retrieving. Use complete, coherent sentences with no database terminology.

1. Retrieve player id and age of those players whose last name is smith and enrolled in category 4 . What is the average age of them.

PLYCT <- **σ** category\_id = 4 (PALAYERCAT),

PLYR <- **σ** last\_name = smith (PALAYER),

PLYR2 <- PLYR ⟕(PLYR.player\_id=PLYCT.category\_id) PLYCT

RESULT1 <- π player\_id, age (PLYR2)

RESULT <- ℱAVERAGE age (RESULT1)

1. Retrieve Name (First and Last) of those players whose age is under 19 who’s category\_id is 5. Count their number also.

PLYCT1 <- **σ** category\_id = 5 (PLAYERCAT),

PLYR1 <- **σ** age<19 (PLAYER),

PLYR <- PLYR1 ⟕(PLYR1.player\_id = PLYCT1.player\_id) PLYCT1

RESULT1 <- π first\_name, last\_name (PLYR)

RESULT <- ℱCOUNT last\_name (RESULT1)

