**Program 1**:

CLASS SandClock

ARRAY stars[4] = [‘\*\*\*\*\*\*\*\*\*’, ‘\*\*\*\*\*\*\*’, ‘\*\*\*\*\*’, ‘\*\*\*’];

for line in stars

print(line)

print(‘\*’)

for line in stars.reverse()

print(line)

END

**Program 2**:

CLASS bmr

SCAN input = new SCANNER

Print(“Sex (f or m)? ”)

char sex = next().charAt(0)

print(“Weight? “)

int weight = nextInt()

print(“Height? “)

int height = nextInt()

print(“Age? “)

int age = nextInt()

print(“How much do you exercise: “)

print(“

1. You don't exercise: BMR x 1.2 = Calories Allowed

2. You engage in light exercise one to three days a week: BMR x 1.375

3. You exercise moderately three to five times a week: BMR x 1.55

4. You exercise intensely six to seven days a week: BMR x 1.725

5. You exercise intensely six to seven days a week and have a physically active job: BMR x 1.9”)

int exercise = nextInt()

if sex == f || sex == F

double bmr = femaleBMR(height, weight, age)

else if sex == m || sex == M

double bmr = maleBMR(height, weight, age)

switch

case(exercise)

1:

double kcal = bmr \* 1.2

break

2:

double kcal = bmr \* 1.375

break

3:

double kcal = bmr \* 1.55

break

4:

double kcal = bmr \* 1.725

break

5:

double kcal = bmr \* 1.9

break

default:

print(“Something went wrong!”)

break

print(“%d, %d\”, %d lbs, Age %d, BMR: %d, Exercise %d, DCA(Daily KCal): %d”, sex, height, weight, age, bmr, exercise, kcal)

END

METHOD maleBMR(height, weight, age) (bmr int)

double bmr = 66+(6.23 \* weight) + (12.7 \* height) - (6.8 \* age)

RETURN bmr

END

METHOD femalBMR(height, weight, age) (bmr int)

double bmr = 655+(4.35 \* weight) + (4.7 \* height) - (4.7 \* age)

RETURN bmr

END

**Program 3**:

CLASS pattern

ARRAY pattern[] = [1, 2, 3, 4, 5, 6]

METHOD func whittle(arr)

if len(arr)>0

printRightJustify(arr)

arr.insert(0,0)

arr = arr[0:-2]

whittle(arr)

END

METHOD printRightJustify(arr)

for I in arr

if i == 0

print(‘ ‘)

else

print(‘%d’, i)

END

END

**Program 4**:

CLASS LargestOccurenceCount

int largest = 0

int count = 0

print(“Enter positive integers (0 to quit): “)

do

if input is positive

if input > biggest

biggest = input

count = 1

else if input == biggest

count++

continue

else

continue

while input != 0

print(“Largest value: %d“, biggest)

print(“Occurences: %d times”, count)

END